



International Congress of Health and Well-being Intervention (ICHWBI 2019)

**Proceedings of the
International Congress of Health and Well-being Intervention
(ICHWBI 2019)**

<http://workjournal.org/health-and-well-being-intervention-international-congress-abstracts>

Edited by:
Gustavo Desouza

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International Congress of Health
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Experts panel

Zaida Azeredo | Abel Figueiredo | Ana Margarida Ferreira | Ágata Vieira | Beatriz Minghelli | Carlos Laranjeira | Carlos Tavares | Carlos Simões | Catarina Martins | Elisângela Pessoa | Ernesto Filgueiras | Isabel Silva | João Borges Lopes | Joaquim Antunes | Lia Araújo | Magda Guerra | Maria Helena Chéu | Maria João Amante | Maria João Oliveira | Miguel Fernandes | Neide Feijó | Nuno Carvalho | Orquidea Campos | Paulo Alves | Providência Marinheiro | Rosa Martins | Rita Barros | Samuel Honório | Sandra Gagulic | Silvia Tavares Silva | Sofia Fraga Almeida | Sónia Lopes | Ximene Rego

This book contains information obtained from authentic and highly regarded sources. This is an edition made for publication of the works resulting from the ICHWBI2019 which are available individually on ©WORK journal website, where the reader will find a significant heterogeneity. Abstracts are ongoing or completed project-based research papers submitted by researchers from various academic degrees. This diversity is also found in the authors' scientific areas, reflecting on the variety of research themes presented at the Congress itself.

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PREFACE

Dear participants,

RECI (Research in Education and Community Intervention) and the Jean Piaget Health School (ESS) - Viseu, promoted an International Congress under the "Intervention in Health and Well-being" at the University Campus of Viseu of the Piaget Institute, on May 31 and June 1, 2019.

The Congress intends to contribute to the discussion of current and emerging issues related to the health and well-being of the population and to count on the participation of researchers and professionals from different areas of practice and training.

This edition meets the work presented at this event in various spheres of knowledge in the areas of health and wellness.

This Congress has as its main objectives:

- Reflect on the challenges posed to the health and well-being of the population;
- Create a space for dialogue that will allow the exchange of experiences between professionals from various areas of intervention and from different regions;
- Sharing new technologies, techniques and processes among academics, professionals and other health stakeholders;
- Promote a multidisciplinary view on health intervention and the role to be played by the various sectors of society;
- Sharing new knowledge and allowing others to be updated;
- Disseminate research projects and results in health and well-being;
- Promote the debate on the health situation in the country and its dimensions related to the intervention of the different professions;
- Approach partners from different regions to reflect professional experiences and share research results.

The abstracts presented by the Researchers reflect the awareness of the need for innovation and originality in various areas of knowledge, and had as topics:

- Assessment and Intervention in Health and Well-being
- Education and Training in Health and Well-being
- Product innovation and development
- Health and Well-being Policies and Management
- Health and Well-being of an increasingly aging society
- Health and Well-being and Emerging Health Threats
- Challenges in Digital Health
- Unconventional therapies in health care and well-being

This is an edition made for publication of the works resulting from the event, where the reader will find a significant heterogeneity. Abstracts are ongoing or completed project-based research papers submitted by researchers from various academic degrees. This diversity is also found in the authors' scientific areas, reflecting on the variety of research themes presented at the Congress itself.

Thus, despite this heterogeneity, it is considered that the aggregating element lies in the seriousness, quality and enthusiasm of contributing to knowledge in the field of research in the various areas of knowledge.

Discussing the topic of education, Swiss biologist and epistemologist Jean Piaget points out:

“The main goal of education is to create men who can do new things, not simply repeat what other generations have done. Men who are creators, inventors, discoverers.

The second goal of education is to form minds that are in a position to criticize, verify and not accept all that is proposed to them.”

This research shows that the authors are aware and able to contribute in an integrated way to research in various areas of knowledge, which underlines the importance and absolute need to continue to promote health and well-being.

Gustavo Desouza

President of the organizing committee of ICHWBI 2019

ICHWBI 2019

Scientific Program

May 31, 2019 (Friday)

Morning

8:45—10:30 Oral Communications Oc.1/ Poster Presentation Pp.1

10:30—10:45 Coffee Break

10:45—11:00 Opening Ceremony (Cerimónia De Abertura) – Aula Magna

Gustavo Desouza – *President of Organizing Committee - ICHWBI 2019*

Zaida Azeredo – *Coordinator of RECI (Research Unit)*

Lúcia Pereira – *Director of ESS Jean Piaget / Viseu*

Paulo Alves – *President of University Campus of Viseu - Instituto Piaget*

João Paulo Rebelo – *Portuguese Secretary of State for Youth and Sport*

11:00—12:15 Session 1 – Assessment and Intervention in Health and Well-Being

Chair [Moderador(A)]: Zaida Azeredo – RECI And ESS Jean Piaget/Viseu

- Assessment of Complex Psychosocial Problems and Wellbeing - Leo Pas (Advisor RECI – Catholic University Leuven, Europrev – Belgium)

- Intervenções Para Prevenção Da Fragilidade Na Pessoa Idosa - João Luís Alves Apóstolo (Escola Superior de Enfermagem De Coimbra – Portugal)

- Nutrientes Para Envelhecer Com Saúde - Ema Monteiro (Pharma Nord – Portugal)

12:15—13:15 Conference

Chair [Moderador(A)]: José António Ferreira – C.H. Tondela-Viseu – Portugal

- Desafios Dos Sistemas De Saúde 2030 - Adalberto Campos Fernandes (Ex Ministro Da Saúde – Portugal)

Afternoon

14:45—16:15 Session 2 – Education and Training in Health and Well-being

Chair [moderador(a)]: Marcus Vinícius Herbest Rodrigues, Faculdade Piaget – Brasil

- Generalização da Prática Desportiva – Catarina Durão (Instituto Português do Desporto e Juventude– Portugal)

- Programa Atividade Sénior, “Um Compromisso com a Vida” - Ermelinda Afonso (Câmara Municipal de Viseu – Portugal)

- Envejecimiento activo, una experiencia en revitalización - José Ignacio Calvo Arenillas (Universidad Salamanca – Spain)

16:15—16:45 Coffee break

16:45—18:45 Oral communications Oc.2/ Poster presentation Pp.2

20h30 Congress dinner (Jantar do Congresso)

June 01, 2019 (Saturday)

Morning

8:45—10:30 Oral communications Oc.3/ Poster presentation Pp.3

10:30—10:45 Coffee break

10:45—12:15 Session 3 – Health and Well-being of an increasingly aging society

Chair [moderador(a)]: Sílvia Tavares Silva – RECI and Universidade Fernando Pessoa

- Smart Healthy Age-Friendly Environments: policy and implementation - Carina Dantas (Cáritas de Coimbra – Portugal)
- Training and education as a way of sustaining the aging society - Ricardo Pocinho (Presidente da Assoc. Nacional de Gerontologia Social – Portugal)
- (Well)Being old & staying healthy in an aging society: opportunities and challenges - Rogério Rodrigues (Escola Superior de Enfermagem de Coimbra – Portugal)
- Determinantes sociais e de saúde do abuso de idosos - Isabel Dias (Departamento de Sociologia da Faculdade de Letras da UPorto – Portugal)

12:15—13:15 Conference II

Chair [moderador(a)]: Carlos Laranjeira – RECI and ESS Jean Piaget/Viseu – Portugal

- Bem estar: humanidade no cuidar - D. António Luciano dos Santos Costa (Bispo de Viseu – Portugal)

Afternoon

15:00—16:30 Session 4 (Sessão 4) – Comemoração Solene dos 40 anos do Instituto Piaget

- 1979-2019 – 40 anos do Instituto Piaget - Marie Françoise Cruz (Instituto Piaget de Viseu – Portugal)

- O papel do Instituto Piaget na promoção da língua portuguesa no espaço da CPLP - Luís Filipe Tavares (Ministro da Defesa e dos Negócios Estrangeiros e Comunidades – Cabo Verde)

16:30 Commemorative and Closing ceremonies (Cerimónia comemorativa e de encerramento)

António Oliveira Cruz – Presidente do Instituto Piaget

António Almeida Henriques – Presidente da Câmara Municipal de Viseu

João Sobrinho Teixeira – Secretário de Estado da Ciência, Tecnologia e Ensino Superior

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Oral Communications

O2

Differences in health lifestyle variables between people in the Rural and Urban areas

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BACKGROUND: The economic differences and daily patterns between the rural and urban population imply different lifestyles. Conesa, et al.^[1], determined that the percentage of practice of physical activity was lower in rural areas than in urban areas.

OBJECTIVE: It is important to see what happens with the rest of the factors that fit within a healthy lifestyle, between rural and urban areas in general, and between the groups under and over 40 years old, classified according to WHO. **METHODS:** The sample was formed by 840 subjects, age between 18 to 77 years (41.62 ± 13.30). 455 subjects were female and 403 male. 532 subjects from urban areas and 326 from rural areas. Variables and Instruments: The Intentionality Measurement Scale was used. It was validated to Spanish by Moreno, et al.^[2]. Also, the Healthy Lifestyles Questionnaire (EVS)^[3] was used. It was translated and validated by Leyton, et al.^[4]. For the measurement of Alcohol and Drugs variables, the Lifestyles Questionnaire (EVS) was used, in the Spanish version^[5] Procedure: Firstly, the questionnaire was elaborated in the Google Form platform. Secondly, we administer the questionnaires through different ways (whatsapp, facebook, twitter). Data Analysis: Factorial analysis and reliability analysis were performed. Then, the descriptive analyzes and the analysis of variance were carried out by an ANOVA analysis with Post-Hoc. The program used to perform the statistical analyzes was the IBM SPSS 19.0. **RESULTS:** In the general results, there were no significant differences between the Rural and Urban groups, for any of the variables. However, significant differences were found between groups under and older than 40 years old, from urban areas in Rest Habits (F=4.33; P=.00; Group<40 (3.63±1.07), Group >40 (3.89±.97)), Tobacco Consumption (F=3.04; p=.02; Group<40 (1.59±1.11), Group >40 (1.34±.86)), Balance Diet (BD) (F=8.68; p=.00; Group<40 (3.66±.88), Group >40 (4.00±.88)), Alcohol Consumption (F=4.74; p=.00; Group<40 (2.05±.90), Group >40 (1.80±.83)) and Drugs Consumption (DC) (F=26.16; P=.00; Group<40 (1.89±.87), Group >40 (1.42±.65)), variables. Also, significant differences were found between groups under and older than 40 years old, from rural areas in, in BD (F=8.68; P=.00; Group<40 (3.62±.95), Group >40 (3.88±.86)) and DC (F=26.16; P=.00; Group<40 (1.82±.87), Group>40 (1.39±.58)), variables. **CONCLUSIONS:** We can conclude, there are differences, especially in the groups

under and over 40 years old, of urban areas, for most of the healthy lifestyles variables.

Keywords: health, lifestyles, physical activity, rural area, urban area.

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O5

Eustress in higher education teachers: Cognitive evaluation of a situation as a enhancer of well-being

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BACKGROUND: Higher education around the world experiences has been facing constant and significant changes^[1]. All of these changes have contributed to the alarming increase and dissemination of stress in higher education's professionals^[1]. Occupational stress translates, in a transactional perspective, the imbalance perceived by the person between certain demands of the work and their capacities to respond to them^[2] and incorporates, according to the holistic model of stress^[3], both positive (eustress) and negative (distress) responses to work stressors. The eustress is operationalized as a positive psychological response to a stressor, i.e. as an indicator of the presence of positive psychological states, reflecting to what extent the cognitive assessment of a situation is seen as beneficial to the individual or as enhancing for his or her well-being^[3]. **OBJECTIVES:** The concept of eustress is important in any discussion of stress, especially occupational stress, in this way, the objectives of this study were to describe the level of eustress perceived by higher education professors and to perceive if there are significant differences in the perception of eustress depending on personal and professional variables. **METHODS:** 439 professors from several higher education institutions in Portugal participated in the study. The data was collected through a

questionnaire built for this purpose and that included a set of sociodemographic questions and the eustress scale [4; 5]. **RESULTS:** The results suggest that professors experience moderate levels of eustress ($M = 2.42$ and $SD = 1.046$) and that there are significant differences according to the service provision regime II (exclusivity / non-exclusivity) ($t(437) = -3,180$; $p < 0,05$), which point to higher levels of eustress presented by professors on a non-exclusivity regime ($M = 2.67$ and $SD = 1.024$) in relation to professors in an exclusive regime ($M = 2.32$ and $SD = 1.040$). **CONCLUSIONS:** In the future it is important to develop efforts through future research, in order to promote well-being and quality of life and the work of higher education professors and well as other professionals.

Keywords: *eustress, well-being, higher education teachers*

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09

Individual Cognitive Stimulation Program Making a Difference 3: Adaptation and validation for the Portuguese language

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BACKGROUND: Considering the context of demographic changes worldwide, it becomes crucial to enable informal caregivers to maximize their involvement in caring for their older relatives, while preventing their physical and mental burnout. Current therapeutic approaches in the scope of active and inclusive aging offer intervention programs that are valuable alternative to pharmacological treatment and can be implemented by caregivers at home. The Making a Difference 3 (MD3)^[1] program has these characteristics. The MD3 was designed to slow the progression of neurocognitive disorder in advanced age. It consists of cognitive activities, organized in 75, 30-minute sessions, which stimulate different cognitive domains. **OBJECTIVE:** To enable the implementation of the MD3 in the Portuguese context, a cross-cultural adaptation and validation

study was carried out. **METHODS:** Adopting the Formative Method for the Adaptation of Psychotherapies^[2], and the Guidelines for Adapting Cognitive Stimulation Therapies for Other Cultures^[3], the MD3 adaptation and validation process included five phases. The first phase involved the analysis of evidence on the efficacy of multisensory stimulation^[4] and individual cognitive interventions^[5], based on the systematic review methodology. It also mapped the applicability of MD3 using semi-structured interviews of nine end-users (caregivers, health professionals and academics). In a second phase, the MD3 was translated, being integrated in its contents the knowledge gathered previously, which allowed to create the α version of the program.

The third phase aimed at cultural validation of the content of the MD3- α version, organization and structure of the sessions and supporting material. For this purpose, the modified Delphi technique was used involving eight social and health sciences experts, and the focus groups were conducted, with 10 family caregivers of cognitively impaired seniors. **RESULTS:** This procedure resulted in the creation of the β version of the program. The MD3- β version maintained the original program structure. However, some of the contents, activities and images have undergone changes, in order to increase their suitability to the Portuguese context and the characteristics of the respective aged population. Then, a pilot study with 52 days was conducted, where the acceptability and applicability of the MD3 program were analysed. The different end-users considered the MD3 as useful, innovative and versatile, highlighting the key principles of its implementation. **CONCLUSIONS:** Thus, the MD3 program appears to be a promising alternative to health care provided by professionals. Future studies are needed to ascertain its impact on the health of seniors with neurocognitive disorders and their caregivers.

Keywords: *older adults, neurocognitive disorder, individual cognitive stimulation, cross-cultural validation, caregiver*

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013

Projeto Entre Gerações - promoção da saúde, bem-estar e educação através da intergeracionalidade

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INTRODUÇÃO: Cabe a cada geração encontrar o tempo e o espaço necessário para manter a coesão das relações intergeracionais, as quais são o mais eficaz e seguro meio de inclusão social na atualidade^[1]. Os programas intergeracionais funcionam como veículos sociais com o objetivo de criar propósitos e crescente troca de recursos e aprendizagens entre as gerações. No caso específico de sessões intergeracionais entre pessoas com demência e jovens são evidentes benefícios significativos para ambos os grupos^[2]. **OBJETIVO:** O objetivo desta comunicação é apresentar o Projeto “Entre Gerações” que engloba sessões intergeracionais de reminiscência em que se relacionam, em regime de voluntariado, alunos do 2º ano do curso de Licenciatura em Terapia Ocupacional da Escola Superior de Saúde do Alcoitão e pessoas com demência, utentes da Casa do Alecrim – Alzheimer Portugal. Os alunos, que no seu curriculum de curso têm unidades curriculares de desenvolvimento pessoal têm a oportunidade de, no âmbito deste projeto, poderem desenvolvê-las. Este tipo de abordagem, baseado na estimulação cognitiva em grupo, contribui para a melhoria da cognição global e do funcionamento social das pessoas com demência^[3]. **METODOLOGIA:** As sessões, dinamizadas por uma terapeuta ocupacional, ocorrem semanalmente com duração de 90 minutos e integram 4-6 pessoas com demência (fase inicial a moderada) e 3-4 jovens. Todos utilizam o nome ao peito e as perguntas (autobiográficas; opiniões pessoais) escritas em cartões são lidas em voz alta pelos participantes, estratégias compensatórias que permitem facilitar a interação e diminuir a evidência dos défices cognitivos dos utentes. O projeto teve início no ano letivo 17/18 e mantém-se em funcionamento. No total já foram envolvidas 15 pessoas com demência e 29 jovens. **RESULTADOS:** Tal como sugerido por Chung^[2] verificou-se que os jovens agem como facilitadores para as pessoas com demência evocarem e partilharem as suas vivências e opiniões. O ambiente social rico e positivo, crucial ao bem-estar da pessoa com demência^[4], permite contornar as limitações de cada um, dando a oportunidade de se voltarem a sentir capazes, úteis e com identidades ocupacionais que merecem ser valorizadas, independente da sua idade e capacidades cognitivas^[5]. **CONCLUSÕES:** Os jovens identificam a mudança que ocorreu na forma como “olham” para a pessoa com mais idade, destacando o bem-estar que experienciam ao ouvir “lições de vida” (sic) que os enriquecem e ainda, o facto de se sentirem capazes de dar um contributo positivo na vida de pessoas em situação de vulnerabilidade.

Keywords: *intergeracionalidade, pessoa com demência, jovens voluntários, reminiscência, bem-estar*

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O16

Study of the Relationship between Body Composition Predictors in Subjects with Intellectual Disabilities

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BACKGROUND: Body composition is an important component of health-related physical fitness since overweight and obesity are related to diseases such as hypertension, osteoarthritis, diabetes, stroke, some types of cancer, as well as psychological problems and social^[1]. Few studies have addressed the body composition in people with intellectual disabilities. **OBJECTIVES:** In this sense, the present study aimed to analyze the relationship between different indicators of body composition among themselves, in subjects with intellectual disability. **METHODS:** Participating 48 individuals (27±8.4 years) with mild intellectual disability, defined by the IQ presented (50-69). The data were always collected under the same conditions and by the same researchers. The Inbody270 bioimpedance balance allowed us to evaluate the following variables: Body Mass Index (BMI), Skeletal Muscle Mass (SMM), Fat Mass (FM) and Body Fat Percentage (%BF)^[2]. The waist circumference (WC) was measured using a tape measure (Rosscraft). The conicity index (CI) was obtained through the measures of weight, height, and WC. The Body Shape Index (ABSI) was calculated by weight, WC and height. The relation waist/height (Rw/h) was obtained by means of the quotient between the WC and the height^[3]. All ethical and legal research principles of Human Beings have been taken into account^[4]. SPSS 23.0 Software was used. The Kolmogorov-Smirnov test was used, and only one variable (ABSI) did not demonstrate normal distribution. To verify the strength of the correlation we used the confidence intervals suggested by Hinkle, Wiersma, and Jurs^[5]. **RESULTS:** Was verified a very high and positive correlations between FM and %BF ($r=0,909$; $p=0,00$; $r^2=82,7\%$), high and positive correlations between BMI and FM ($r=0,82$; $p=0,00$; $r^2=67,3\%$), BMI and %BF ($r=0,735$; $p=0,00$; $r^2=54\%$), BMI and Rw/h ($r=0,834$; $p=0,00$; $r^2=69,5\%$), FM and WC ($r=0,717$; $p=0,00$; $r^2=51,4\%$), FM and Rw/h ($r=0,735$; $p=0,00$; $r^2=54\%$), %BF and Rw/h ($r=0,747$; $p=0,00$; $r^2=55,9\%$), WC and CI ($r=0,814$; $p=0,05$; $r^2=66,2\%$) and between WC and Rw/h ($r=0,782$; $p=0,00$; $r^2=61,2\%$). Negative correlations was found between SMM and %BF ($r=-0,541$; $p=0,00$; $r^2=29,3\%$) and between SMM and ABSI ($r^s=-0,302$; $p=0,037$; $r^2=6,9\%$). **CONCLUSIONS:** The results of the study suggest that there are a large number of participants ($n = 23$) who are overweight, being a determinant factor for the development of certain cardiovascular and metabolic pathologies. It seems to be decisive to evaluate a large number of variables of body composition, so that an individual profile of body composition can be outlined, enhancing an individualized prescription of physical activity practice and also in controlling exercise and health status of the population with intellectual disability, as well as education for health/ therapeutic education.

Keywords: *Body composition, Intellectual disability, Bioimpedance, Physical activity*

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O19

Cognitive Stimulation for Successful Aging - perceptions of Social Educators

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BACKGROUND: The phenomenon of demographic aging is one of the major contemporary world challenges, with Portugal being one of the most aged countries in the Europe^[1]. Several efforts have been made to ensure that this increase in life span can effectively be translated into quality of life^[1], as well as in improvements in the care and attention to the more dependent elderly^[2]. The development of cognitive stimulation intervention has been associated to the promotion of successful aging^[3,4] as well as to the protection against earlier dementia and cognitive decline^[5]. The Social Educator, through a socio-educational intervention, may be part of the professional answer to this challenge. **OBJECTIVES:** This study aims to evaluate the perceptions of Social Educators (n = 4), who have been involved in the development of a cognitive stimulation program, about the benefits of this intervention to the persons who participated in the program at the domains of Interest, Humor, Initiative, Satisfaction and Communication, assessed through an observation scale (1-5), about each of participant in each session. **METHODS:** The program comprised 14 sessions, repeated over 3 cycles. Two groups of elderly people with cognitive impairment or mild dementia, living in a nursing home, were organized. The first with 7 participants was developed 2 times a week and the other with 5 participants was developed 3 times a week. **RESULTS:** The results show that the perception of the Social Educators is considerably positive, with the mean values of all the dimensions considered in the assessment above 3.5. The dimension with highest values was Interest (mean of 4.74 and 4.41 in the 2x and 3x/week groups, respectively) and the lowest was Communication (mean of 4.52 in the 2x group) and Initiative (3.77 in the 3x group). The comparison between cycles allowed to realize that the perception of the considered dimensions is more favorable in the 2nd and 3rd cycles of application of the program, which happened for both groups. Comparing the two groups, there were better results for all dimensions in the group where the program was developed twice a week. **CONCLUSION:** In summary, the results point to a very positive perception of Social Educators about the benefits of the program. The dimensions evaluated are important indicators of successful aging, so the very positive assessment presented here may indicate the contribution of such programs to a higher quality of life in advanced age.

Keywords: *Cognitive Stimulation, Successful Aging, Social Education*

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O20

Antioxidant activity of dietary supplements with green tea marketed in Portugal

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BACKGROUND: Green tea is recognized by its antioxidant potential^[1]. Nowadays, the marketing of dietary supplements claiming protection against free radicals has increased. However, most labels include no data about its antioxidant properties^[2,3]. **OBJECTIVES:** This study aims to evaluate antioxidant activity of six green tea dietary supplements sold in pharmacies and health foods stores in Portugal. **METHODS:** Six commercial dietary supplements containing green tea were evaluated for in vitro antioxidant capacity by different methodologies: antiradical activity against 2,2-diphenyl-1-picrylhydrazyl (DPPH), superoxide and metal chelating activity. EDTA, ascorbic acid and quercetin were used as standards. **RESULTS:** Great variability in antioxidant activity was seen among all dietary supplements, as well as different patterns of antioxidant capacity depending on the method used. Scavenging activities of the Fe²⁺ chelating, DPPH and superoxide radical for all dietary supplements studied were observed in concentration-dependent patterns. For Fe²⁺ chelating activity assay, only sample B (containing only green tea) showed antioxidant results (IC₅₀ = 2681.6 ± 92.0 µg/mL). Sample E (containing only green tea) showed the best IC₅₀ value for DPPH assay (31.6 ± 2.3 µg/mL). In superoxide assay IC₅₀ values range from 44.7 to 265.3 µg/mL. In this study products with only green tea as active ingredient showed the best results, with an IC₅₀ value of 31.6 ± 2.3 µg/mL. In all samples (except for sample C – with green tea, guarana, bitter orange, L-carnitine, cocoa, choline, and chromium), and for superoxide radical scavenging activity, IC₅₀ values were lower than the positive control, ascorbic acid (IC₅₀ = 77.5 ± 10.9 µg/mL), a well-known antioxidant. The variety of results obtained may be related to the composition and concentration of samples studied and the antioxidant mechanisms underlying. **CONCLUSION:** In vitro antioxidant activity of commercial dietary antioxidant supplements varies considerably among products, which is expected given the different botanical origins, different preparation processes, formulations, and concentrations. DS containing green tea with other substances didn't show better results than DS with only green tea extract, which are not in agreement with other studies^[2,4]. However, this synergic effect also depends on the type of substances present in mixture and its concentration. Therefore, results show the need to standardize dietary supplements in terms of its antioxidant capacity to match required doses to the oxidative status of consumers.

Keywords: *antioxidant activity, green tea, dpph, metal chelating activity, superoxide.*

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O24

The effect of emotions and acupuncture on myoelectric abdominal activity

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BACKGROUND: Many studies showed that somatic skin and muscle afferences are involved in autonomic and neurovegetative control functions^[1,2]. Besides the abdomen has internal organs and gastrointestinal connection, it has neurovegetative and orthopathic functions^[3] and perform important role in emotions. In TCM some diagnose abdominal points link to internal organs, as G1 that corresponds to the Sphinx Oddi area^[4]. Acupuncture has been studied to clarifying the mechanisms in the human body. “Leopard Spot Technique” is an acupuncture techniques with instant symptoms’ relief. **OBJECTIVE:** The main objectives were to compare abdominal myoelectric activity (MEA) and pressure before/after acupuncture in the experimental group, compare abdominal MEA and pressure in the groups and relate abdominal MEA and bearable pressure with applied scales. **METHODS:** This preliminary, prospective and randomized allocated individuals, after G1 palpation, into different groups: C1 - control group (asymptomatic individuals) without acupuncture intervention; C2 - control group (asymptomatic individuals) with acupuncture, and E - experimental group (symptomatic individuals) with acupuncture. Each group was compose by 11 persons. The acupuncture technique used was “Leopard Spot Technique” in the groups C2 and E, at points H3, L6, F41, F26, bilaterally. Healthy volunteers between 18 and 65 years-old were included and excluded gastrointestinal diseases, diabetes, neurological problems, oncological and heart problems, pregnancy and lactation, people with needle phobia. The main parameters assessed were: (i) pain / discomfort by Visual Analogue Scale (VAS); (ii) MEA of the abdominal muscles around G1 by Electromyography; (iii) maximum pressure tolerable at G1 measured by digital algometer. The values were collected before and after the acupuncture. **RESULTS:** The results show that myoelectric activity increased in C1= 11.8% and C2= 42.2%. While in the experimental group (E) it decreased by 7.4%. Pain values in VAS increased in control group with acupuncture (C2) in 17.8%, decreasing in the C1= 50% and E= 81.8%. The maximum tolerated pressure in decreased in C1= -8.5% and C2= -2.1%, contrary E group increased by 2.4% after acupuncture. In the Emotion Assessment Scale, the E group

obtained subscales’ higher values (subscales as anxiety, anger and fear) and more vegetative patterns in tongue’s evaluation. C1 register higher value of “Happiness” subscale. **CONCLUSIONS:** In conclusion, acupuncture is effective to relief pain perception. In spite of the decrease tendency of MEA after acupuncture, the decrease of myoelectric activity and increase in pressure tolerance is inconclusive. Further studies studying acupuncture should be performed with more individuals.

Keywords: *Myoelectric activity, electromyography, acupuncture, emotion*

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O25

Quality of life assessment of citizens with intellectual disability: factorial and hierarchical structure

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BACKGROUND: Quality of life (QOL) is being used for institutions’ reorganization and quality certification process^[1]. QOL is making a major difference in re-thinking tailor-fit programs and intervention designs for people with intellectual disability (ID) aiming to enhance personal outcomes^[2]. Despite its importance, there is still the need to understand the underlying concept of QOL in the field of ID because the analysis of the QOL’ factor structure (multidimensional) or hierarchical nature remains a critical element with few studies about the factor structure validation^[3,4]. **OBJECTIVE:** This study aims to analyze the factor structure of the *Escala Pessoal de Resultados* (EPR), a scale to assess QOL, and examining self-report and report-of-others measures. **METHODS:** The sample comprised 1,264 adults with mild or moderate levels of ID and respective proxies ($n = 333$). Data were examined using SPSS 21.0 and AMOS 21.0. **RESULTS:** Confirmatory factor analysis (CFA) showed a robust first-order model with evidence of suitable psychometric properties of the eight QOL dimensions: personal development, self-determination, interpersonal relations, social inclusion, rights, emotional well-being, physical well-being, and material well-being. Findings also highlighted three higher factors of the QOL concept: independence (personal development, self-determination), social participation (interpersonal relations, social inclusion, rights), and well-being (emotional well-being, physical well-being, material well-being). **CONCLUSIONS:** Although further research is needed, the results reveal that the EPR may be a valid and reliable instrument to measure QOL of adults with ID. The implications of these results are discussed, highlighting the scale as a useful tool for

evaluation (including multi-perception strategies) and intervention.

Keywords: *quality of life, intellectual disability, validity, factorial structure*

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O26

Understanding the gaps among citizens with and without intellectual disability: the role of the quality of life paradigm

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BACKGROUND: Quality of Life (QOL) is assuming a special relevance in supports provision of Portuguese citizens with intellectual disability (ID)^[1]. Physical well-being is one of the eight domains in QOL conceptualization model for people with ID^[2,3]. There is still the need to understand the differences or similarities between the QOL of people with and without ID, in order to understand the gaps between citizens^[4]. **OBJECTIVE:** This proposal aims (a) to compare QOL among adults with and without ID and (b) to examine the predictors of QOL in both groups of participants. **METHODS:** Data were collected from 1,929 adults, including 1,264 individuals with an ID and 665 participants without a disability. QOL was assessed by the Escala Pessoal de Resultados. **RESULTS:** The QOL scores of adults without ID were higher than those with ID, except in the physical well-being domain. Regarding this specific domain, despite general population exposed higher scores in the health status and physical activity indicators, people with ID had higher scores in the recreation, nutritional status, and sleep indicators. Additionally, personal and environmental characteristics were predictors of QOL for both groups of participants. The factors that strongly predicted the QOL scores of citizens with ID were age, living circumstances, employment status, health status, and diagnosis. The most prominent predictors of QOL of people without ID were age, employment status, education level, and health status. The findings highlighted that the health status was the highest predictor of QOL of people with and without ID. **CONCLUSIONS:** Portuguese policy and practice need to change in order to improve the QOL of people with ID, including the physical well-being domain. Better accessible health services and stakeholders deeper knowledge of persons with ID' abilities should be some of the strategies.

Keywords: *Quality of life, Intellectual disability, General population, Predictors*

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O27

Assessment of Health and Well-being of Portuguese Population by Environmental and Socioeconomic Determinants

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BACKGROUND: Sustainable development aims for the universal well-being and for integral human development. The 2030 Agenda for Sustainable Development defines the goal SDG3 as “ensure healthy lives and promote well-being for all at all ages”^[1]. The promotion of health equity faces challenges of political, social, economic and environmental nature, which are interrelated and influenced by environmental and socioeconomic determinants. Health determinants are intrinsically linked with all SDGs^[2]. **OBJECTIVE:** thus, this work proposes a tailored made index SEHVI - *SocioEconomic Health Vulnerability Index* aiming to analyse the Portuguese population health and well-being in a quantitative manner. **METHODS:** SEHVI aggregates 7 health outcomes indicators – mortality variables – and 28 health determinants indicators – healthcare resources, social protection, education, water and sanitation, employment and income, air pollution and land, housing, social participation, safety and waste variables – relating dimensions affecting health quality and well-being. Variables' choice was based on the SDGs monitoring framework^[3] and on data availability on databases. Statistical data was collected from official national databases - INE, PORTDATA, and APA - disaggregated at municipal level, in order to evaluate population's life conditions at the local scale. This is a cross-sectional study focusing three periods: 2009, 2015 and 2018, and targeting only mainland municipalities (N=278). “Madeira” and “Açores” archipelagos were excluded from the present study due to scarcity of available statistical data for the selected variables. Standardization and normalization methods were applied to variables before aggregation into the index model. The model was validated by statistical tests and by factorial analyses of

exploratory type using IBM®SPSS® Statistics vs.25.0 software. **RESULTS:** Results are robust with an adequacy of data structure ($KMO = 0.767$; $p < 0.01$), which translates populations' vulnerability regarding health and well-being conditions. The country national index score was adopted as the benchmark. In the period of analysis, all indicators progress was evaluated: with the exception of water quality for human consumption and education related indicators, significant improvements were observed for all other indicators. Most of the mainland population (72 %) experiences more vulnerable health and well-being conditions than the country's average. Generally, since 2009, SEHVI scores are worsening. **CONCLUSIONS:** This study enlightens that populations' environmental conditions and socioeconomic determinants play an important role in health and well-being outcomes, namely those related to housing conditions, air pollutants emissions^[4], education level and health services^[5]. These results confirm that well-being is a multidimensional subject, influenced by different domains of life and thus requiring a multidisciplinary approach.

Keywords: *health determinants, life conditions, sustainable development goals, socio-economic determinants*

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O33

The Relation between sedentary time and physical activity with physical fitness of the elderly

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BACKGROUND: As a result of the ageing process, there is evidence of a decline in physical fitness, in terms of strength, endurance, agility, and flexibility^[1]. This decline is a growing problem which affects the health system and the medical treatment of a number of issues, including musculoskeletal disorders^[2]. Physical activity and sedentary behavior might, therefore, influence the physical fitness level of the elderly. **OBJECTIVE:** The aim of this paper is to accurately verify the strength of the links between sedentary time and physical activity levels (light-, moderate- to vigorous intensity) on the physical fitness of the elderly. **METHODS:** This cross-sectional study sample included 83 elderly individuals (72.14 ± 5.61 years old), both male and female. Sedentary time (counts min⁻¹ < 100) and physical activity time were assessed using the ActiGraph® GT1M Accelerometer during waking hours for 3 days, at least. The "Senior Fitness Test" battery (Rikli and Jones) was used to assess the physical fitness of the elderly^[3]. In order to analyse data, descriptive and inferential statistics were used. Spearman and Pearson's tests were applied to bivariate correlations after assessing normality; the coefficient of determination was also found (r^2). The confidence intervals suggested by Hinkle, Wiersma and Jurs were used to accurately verify the strength of the correlation^[4]. **RESULTS:** Evidence suggests that physical activity time (moderate- to vigorous intensity – MVPA) is negatively associated with Body Mass Index ($r_s = -0.218$; $p = 0.048$; $-0.3 < r \leq -0.1$ (small); $r^2 = 6.2\%$) and performance of the agility test (8-ft up-and-go) ($r_s = -0.367$; $p = 0.001$; $-0.5 < r \leq -0.3$ (low); $r^2 = 8.6\%$). Nevertheless, MVPA time is positively associated with aerobic resistance (6-minute walk) ($r_s = 0.397$; $p = 0.000$; $0.5 < r \leq 0.3$ (low); $r^2 = 10.6\%$) and strength of upper limbs (arm curl) ($r_s = 0.243$; $p = 0.027$; $0.3 < r \leq 0.1$ (small); $r^2 = 4\%$). However, no significant association was found between sedentary time and light physical activity level. Still, longer periods of sedentary behaviors are connected with lower aerobic resistance and longer time spent in the agility test. **CONCLUSIONS:** Evidence therefore suggests that promoting MVPA and reducing sedentary behaviors on the elderly might have a positive influence on the physical fitness of these individuals.

Keywords: *ageing, sedentary behaviors, physical activity, physical fitness, accelerometry.*

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O40

The effectiveness of exercise interventions on Rate of Falls and Balance: a Systematic Review

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BACKGROUND: Falls are considered as the fourth leading cause of injury mortality and represent 23 % of deaths among adults over 65 years^[1]. Multifactorial interventions have been classified with two or more individually tailored interventions to prevent falls^[2], and deficits on balance and gait performance^[3]. Indeed, preventing falls by improving proper balance exercise in older people has been a public health issue in several studies^[4] and a predictor of falls occurrences^[5]. **OBJECTIVE:** This article aimed to systematically review (SR) the effectiveness of multifactorial programs, with physical exercise, on balance and rate of falls in healthy older people. **METHODS:** The RS was undertaken following the principles of the PRISMA guidelines^[6]. Studies were identified from four databases: PubMed, Cochrane, Web of Science, SCOPUS up to 2019, and limited to English, Portuguese and Spanish languages. The search strategy was conducted by using a keyword search of the following terms: (risk of fall* OR risk factor*) AND (physical activity OR physical endurance OR physical fitness OR physical activity level* OR physical performance*) AND (multifactorial*). Articles were excluded if they did not meet the inclusion criteria: (i) did not report fall-related outcomes or were reported only as abstracts (ii) were not RCTs; (iii) multifactorial programs with at least two risk factors in interventions; (iv) healthy community-dwelling men and/or women aged 60 years and older; (v) physical performance components; (vi) lack of a control group. Study quality was assessed using the Quality Assessment Tool for Quantitative Studies^[7]. **RESULTS:** 6 articles meet the inclusion criteria. All articles present positive effect in balance and only one didn't present positive effect in fall rates. We found recent evidence for the effectiveness of exercise interventions designed to diminish fall rates according multifactorial interventions in older people. Exercise intervention focused in balance parameters has positive and statistically significant effects. **CONCLUSIONS:** Multifactorial interventions may be a key factor in the prevention and management of physical performance and rate of falls. The results of this SR show that, exercise interventions in multifactorial programs seem to have positive effects on falls-related parameters. Future studies should be conducted to better understand the benefits of others physical parameters.

Keywords: *physical activity, fall, physical performance, multifactorial program.*

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O44

Associations between emotional intelligence and well-being indicators in adolescents

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BACKGROUND: Several studies have suggested that trait and ability-based measures of emotional intelligence (EI) contribute to the promotion of well-being in adults ^[1]. However, this relationship has not been sufficiently explored among adolescents. **OBJECTIVE:** As such, the present study aims to: i) investigate the associations between EI dimensions and well-being indicators (self-esteem, life satisfaction and social anxiety) in adolescents; and ii) analyze the effect of gender and age on dimensions of EI. **METHODS:** The sample consisted of 1074 adolescents (57.9% girls and 42.1% boys), aged between 11 and 20 years (M = 14.40; SD = 1.63), enrolled between the 7th and 12 grades (Study Protocol Registration N° 0395700001/MIME). Participants completed a sociodemographic questionnaire and the Portuguese versions of the Wong and Law Emotional Intelligence Scale ^[2], the Rosenberg Self-Esteem Scale ^[3], the Social Anxiety Scale for Adolescents ^[4] and the Satisfaction with Life Scale ^[5]. Statistical procedures included descriptive (mean, standard deviation, skewness and kurtosis), internal consistency, Pearson correlations, and one-way ANOVA analyses. All variables presented acceptable values of skewness and kurtosis (between -1.26 and 1.73) and adequate internal consistency indices (Cronbach's alphas > 0.70). **RESULTS:** Correlation analysis indicated that the EI dimensions (self-emotion appraisal, use of emotions and regulation of emotions) were positively and moderately correlated (r_s between 0.30 and 0.58, $p < 0.01$) with self-esteem and life satisfaction, whereas the associations among EI and social anxiety dimensions were small and negative (r_s between -0.19 and -0.10, $p < 0.05$). On the other hand, small and positive correlations ($r_s = 0.08$, $p = 0.01$) were observed between the others' emotional appraisal EI dimension, the satisfaction with life, and fear of negative evaluation by others. Boys reported higher levels of self-emotion appraisal, use of emotions and regulation of emotions ($p < 0.01$), whereas girls showed higher levels of other-emotion appraisal ability ($p < 0.01$). Age was negatively associated with the use of emotions dimension ($r = -0.10$, $p = 0.01$) and positively correlated with the emotional appraisal of others ($r = 0.08$, $p = 0.01$), although both correlation coefficients were small. **CONCLUSIONS:** In conclusion, the present results suggest the need and importance of implementing Emotional Education practices during adolescence.

Keywords: *emotional intelligence, well-being, sociodemographic factors, adolescents*

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O46

Older adult's perception about the use of technologies in the improvement or maintenance of their health status

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BACKGROUND: Older adults should participate more actively in the management of their health, integrating healthy behaviors to maintain their functional capacity^[1]. The inclusion of new technologies in healthcare is a promising strategy to support behaviors that maximize older functionality^[2]. Considering the probable increase in these technologies use, especially in geriatric care^[3], it's important to understand the perception that seniors have about their utility in everyday life. **OBJECTIVE:** This study, developed within the framework of the project "Circadian health, physical activity and pattern of eating habits as predictors of fragility: Portuguese population", aimed to analyze the older people's experiences in use of ACM Kronowise® 2.0 sensors, and evaluate their perception about the contribution of this technology to improve/maintain their health status. **METHODS:** These sensors, used as wristwatches, allow to collect data about the circadian cycle, patterns of physical activity, food and exposure to luminosity. Seniors aged 65-80 years, who live in the community and don't present moderate/severe cognitive decline were recruited at senior universities, cultural/recreational associations and primary health centers. Each participant used the sensors for 7-10 days, and then answered six questions about ease of their use, functionality, awareness of healthy habits and usefulness of technologies in health. **RESULTS:** Were included 53 participants (69.8% female), with mean age of 71.13 (±5.02) years and average formal education of 6.72 (±4.21) years. Although most participants (92.5%) considered that the sensors are easy to use, 47.2% admitted that they cause some discomfort. The majority of the respondents (86.8%) didn't report changes in daily routines and 54.7% were sensitized to adopt healthy lifestyles. Moreover, 94.3% considered that the data obtained through sensors are useful to improve their health status and would recommend these sensors to others. Sensors-related data

accompanied by recommendations for maintenance/improvement of health status were considered the most relevant positive aspect. As negative aspects, sensor design, lack of utility in daily life and time of use were highlighted. The women revealed to feel more discomfort in the use of sensors than the men; all robust and pre-frail participants considered easy the experience of sensors use, while 31% of frail participants considered it difficult. **CONCLUSIONS:** These study results indicate that the acceptability of technologies as a way of monitoring health status is quite high, although some aspects related to their usability need to be improved. Although preliminary, these results can be used as a set of guidelines in the selection of suitable technological equipment for older adults.

Keywords: older adults, frailty, e-health, lifestyle, circadian rhythm

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O47

Respiratory Sinus Arrhythmia and Breathing Control Technic in Young Adults: A Pilot Study

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BACKGROUND: Lower breathing frequencies are associated to larger respiratory sinus arrhythmia (RSA) and, consequently to higher heart rate variability (HRV). RSA is a cyclic fluctuation of heart rate (HR) during the respiratory cycle, with increase of HR during inhalation and decrease during exhalation. The slower the breathing frequency the higher the oscillation, resulting in higher values in the Low Frequency (LF) range (0.04-0.15 Hz); resulting in a resonant effect^[1]. Sedentarism is associated with lower RSA^[2]. **OBJECTIVE:** The purpose of this study was to verify if lower breathing frequencies were significantly associated with augmented RSA. **METHODS:** 10 irregularly or active young adults (18.6 ± .69 years old; 4 women; height- 168 ± 7.51 cm; weight- 62.8 ± 11.11 kg; IMC- 22.17 ± 3.06). Physical activity was evaluated with IPAQ short version^[3]; and, HRV was obtained with Polar V800 heart rate monitor^[4], in supine position, during 10min, in each of two conditions: i) baseline (B)- normal breath; ii) controlled breath (C)- diaphragmatic breathing at slow pace. Informed consent was obtained. HRV parameters were obtained with gHRV, v.1.6^[5]. **RESULTS:** Participants took 2-3mn to achieve resonant effect at .13 ± .03 Hz, significantly augmenting LF from B to C (1107.25 ± 951.76 msec² and 2564.78 ± 2162.47 msec², respectively) ($Z = -2.703, p < .01, r = .85, rrb = .80$). In C, breathing frequency was inversely associated with heart rate standard deviation ($\rho(10) = -.927, p < .0001$), heart rate variability index ($\rho(10) = -.685, p < .05$), SD2 Poincaré plot ($\rho(10) = -.685, p < .05$), and ApEnt ($\rho(10) = -.827, p < .01$); and, heart rate was inversely associated with LF ($\rho(10) = -.815, p < .01$), mean RR interval ($\rho(10) = -1.0, p < .0001$),

standard deviation RR interval ($\rho(10) = -.806, p < .01$), pNN50 ($\rho(10) = -.952, p < .0001$), rMSSD ($\rho(10) = -.648, p < .05$), SD1 Poincaré plot ($\rho(10) = -.648, p < .05$), SD2 Poincaré plot ($\rho(10) = -.673, p < .05$), and FracDim ($\rho(10) = -.853, p < .01$). **CONCLUSIONS:** Results confirm the hypothesis that slow diaphragmatic breathing may enhance RSA and HRV in irregularly or less active young adults. Slow diaphragmatic breathing may be a non-invasive, non-expensive, easy to use nonpharmacological method for help stabilizing autonomic function in less active young adults.

Keywords: breathing frequency, respiratory sinus arrhythmia, heart rate variability, sedentarism, young adults

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O48

Detection of Risk of Falls and Physical Frailty in Portuguese Institutionalized Elderly using the Functional Reach Test: An Exploratory Study

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BACKGROUND: Falls are a major source of morbidity and mortality among elderly^[1]. Duncan, Weiner, Chandler, and Studenski^[2] developed a test based on the ability to reach ahead as far as possible, in static bipedal posture. A functional reach less than 17.78 cm is considered a valid marker of physical frailty^[3], and, over 70 years of age a reach less than 25.4 cm is a criterion for risk of recurrent falls^[4]. **OBJECTIVE:** The objective of the present study was to verify the capacity of reach in institutionalized elderly. **METHODS:** Thirty institutionalized elderly (80.4 ± 8.82 years old, height- 154.6 ± 8.9 cm, 18 females) made 3 successive trials in the Functional Reach Test. Informed consent was obtained. There was no significant difference between genders. **RESULTS:** No association was found with age and height. Elderly significantly decreased reach capacity from trial 1 till trial 3 ($\chi_r^2 = 10.605, p < .01, \chi_w^2 = .18$), with linear regression ($y = -15.306x + 149.03, r^2 = .9345$), and with significant differences between trials 1 and 2 ($Z = 2.649, p < .01, r = .48, rrb = .44$) and between trials 1 and 3 ($Z = 3.837, p < .001, r = .70, rrb = .52$). The mean value obtained for this elderly sample (12.23 ± 6.61 cm, $M = 98.5, CI [10.14, 14.79]$) was significantly lower than the criterion for risk of recurrent falls ($t(29) = 8.031, p < .001, \text{mean difference} = 9.69, CI [7.60, 12.27]$), and that for physical frailty reference ($t(29) = 8.663, p < .001, \text{mean difference} = 10.45, CI [8.38, 13.31]$). **CONCLUSIONS:** Based on Functional Reach Test' criteria values, these elderly have

physical frailty and are at risk of recurrent falls, losing functional capacity to reach ahead, if a motor task requires successive reaches in the peripersonal space. Movement stimulation programs are needed in institutionalized elderly, so to prevent and to retard falls. The Functional Reach Test is a non-intrusive, inexpensive, easy to apply, and with results with immediate interpretation, that can be widely used to detect potential elderly fallers that must be followed, involved in movement stimulation programs, and for which additional modification of environmental hazards must be made^[5].

Keywords: functional reach, elderly, risk of falls, physical frailty

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O52

Spatiotemporal parameters of gait in patients with knee osteoarthritis

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BACKGROUND: Gait is used to quantify physical function, quality of life and health status since is the most frequently performed physical activities in daily life^[1]. Knee osteoarthritis (OA) is a complex disease influenced by many factors, including the loading environment. Analyzing biomechanics during walking is therefore particularly relevant^[2] and the study of spatiotemporal parameters in various pathologies a relevant topic of attention^[3]. **OBJECTIVE:** This study aimed to study spatiotemporal parameters of gait the in patients with knee OA. **METHODS:** A laboratory, analytic and cross-sectional study was design. A 3D motion analysis system, consisting of 11 infrared cameras (Qualisys, Gothenburg, Sweden), was used to collect kinematic data at 200 Hz. Forty-two trajectory passive markers were attached to the lower body segments of each participant. Participants were asked to walk with own shoes on a flat surface for 10 m at a self-selected speed. Three trials of each participant were recorded to eliminate variation in walking speed and to enhance the reliability and accuracy of the average. Post-processing calculation of all gait parameters were studied using Visual3D software (Version 6.00.12, C-Motion, Rockville, USA). Several gait parameters were measured in this study: walking speed, stride and step length, cadence, duration of 1 gait cycle double limb support, duration and percentages of swing and stance phase. **RESULTS:** This study includes 15 patients (10 female; mean age 62 ± 7,1; weight 77,2 ± 12,9 kg, and height 162 ± 8,1 cm) with diagnosed radiographic medial knee OA Kellgren/Lawrence (K/L) grade 2 or 3, recruited in hospitals. The

mean walking speed was 1.16 m/s (± 0.15), the cycle time was 1.08 s (± 0.16) and other gait parameters are similar to a population of the same age. No significant differences were found between right and left side. **CONCLUSIONS:** This study shows that the analysis of spatiotemporal parameters of gait can serve as a basis for understanding of possible changes in gait in patients with osteoarthritis of the knee. The gait analysis provides critical information needed to understand the knee OA development and to design therapeutic interventions.

Keywords: *Biomechanics, gait, osteoarthritis, knee*

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O53

Acute effects of static stretching in vertical jump performance

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BACKGROUND: Static stretching has been widely used as a flexibility training and preparatory method for physical activities^[1]. However, in recent years several studies reported contradictory assumptions about the positive^[2] or negative^[3,4] impact of static stretching on vertical jump performance. **OBJECTIVE:** To understand the acute effects of static stretching on vertical jumping performance, in particularly concentric and eccentric maximum force peaks, jump height, flight time and force development ratios. **METHODS:** A quasi-experimental, cross-over and randomized study was designed. Data were collected in two sessions at least with 48 hours apart. In each session, three countermovement jumps were collected before and after the experimental or control protocol in a randomized order. The experimental protocol consisted of 3 sets of 30 seconds of static stretching in the quadriceps and gastrocnemius. The control protocol consisted of 6 minutes in a sitting position. Data were collected on an AMTI Force Platform (AMTI Optima HPS, Watertown, USA) and analyzed in AcqKnowledge 4.0 software (Biopac Systems, Canada). **RESULTS:** In this study participated 20 female athletes of amateur sports. Statistically significant differences ($p < 0.05$) were found: more concentric force, power and acceleration; less eccentric force, maximum height and velocity after the experimental protocol. There were no significant changes in the control protocol. **CONCLUSION:** The training of static stretching seems to induce immediate effects on vertical jump performance in a contradictory way. That can be explained by a change in the force production strategy in the stretching / shortening cycle.

Keywords: *Countermovement, jump, static stretching, performance*

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O56

Perception of the impact of a positive psychological intervention in a group in a non-clinical population

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BACKGROUND: Currently, the concept of mental health no longer refers only to the absence of mental disorders, but also to the presence of positive elements, namely indicators of positive feelings and functioning^[1] such as well-being, effective functioning in individual life and effective functioning in community life^[2]. Positive psychological interventions involve simple behavioral and self-administered cognitive strategies and consist of simple, regular, and intentional practices designed to promote the happiness and well-being of the individual who practices them^[3]. With proven efficacy in increasing positive emotions, well-being and satisfaction with life, in both clinical and non-clinical populations, psychological interventions have gained increasing interest in their study over the last decade. However, in Portugal there are only a few studies regarding positive psychological interventions. Due to its effectiveness and ease of application, the use of positive psychological interventions can be considered as a complementary strategy in the promotion and treatment of mental health. **OBJECTIVE:** The present study aimed to analyze the impact perceptions in students of higher education, of the application of a positive psychology program, aiming to promote well-being in daily life. **METHODS:** A total of 12 students from a university in the north of the country participated in this study. Over 6 weeks, participants assessed the sessions they attended, as well as the program. The data collected were qualitatively analyzed through content analysis and the resulting categories presented according to their frequency of occurrence per session and in the global evaluation of the program. **RESULTS:** In general, the program was well accepted by participants. Intra-session activities, positive group interaction, sharing and reflection were the most frequently mentioned categories in the responses given throughout the program, as more appreciated elements. The specific objectives of the sessions to foster reflection and learning on the various subjects was, in most sessions, achieved. **CONCLUSIONS:** The participants consider that the realized learning promoted a change mainly in the way of thinking, concretely, changing the perceptions to a greater focus on the positive. This indicates that the program has contributed to the learning of strategies for the promotion of well-being.

Keywords: *positive psychological interventions; well-being; content analysis.*

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Effectiveness study of a positive psychological intervention in young adults

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BACKGROUND: The current definition of (positive) mental health as encompassing high levels of well-being and reduced levels of psychopathology^[1,2] as given rise to a growing interest in the development of activities and programs of positive psychological intervention that allow to promote an increase of well-being and reduction of psychopathology, taking into account the individual, social and economic benefits that higher mental health entail^[3]. **OBJECTIVE:** The objective of this study was to test the effectiveness of a positive psychological intervention in a non-clinical sample, in the promotion of well-being. **METHODS:** The developed program (entitled “Bem-me-queiro”) dealt with topics such as gratitude, optimism, spirituality, mental rumination and social comparison reduction, kindness and forgiveness and had a duration of six weeks. The sample, selected by convenience in a non-random manner, consisted of 24 participants, subdivided into experimental group and comparison group, both consisting of 12 participants each. **RESULTS:** The experimental group had a mean age of 22 years ($SD = 2.98$), with 91.7% female and 8.3% male. The comparison group had a mean age of 24.17 years ($SD = 7.54$) and was composed of 75% female and 25% male. The evaluation was performed in two moments - pre and post intervention - with a temporal spacing of six weeks, using as well-being evaluation measures the MHC-SF (adaptation for the Portuguese population is submitted for publication)^[4] and the EADS-21^[5] as a measure of psychopathology (validated for Portuguese population). The results point to a marginal improvement in social well-being ($Z = -1.653$, $p = 0.098$) and a significant reduction in anxiety levels ($Z = -1.983$; $p = 0.047$) in the experimental group, suggesting benefits of participating in the program. **CONCLUSIONS:** The format of the therapy and its inherent mechanisms seem to have contributed to these results, since group interventions allow the creation of a safe environment for sharing experiences and promoting learning through the experiences of others, fostering

hope and thus serving as mediator of the change process. In addition, with regard to psychopathology, the existence of exercises aimed at diminishing mental rumination and social comparison may have contributed as a protection factor for the experience of lower levels of anxiety. These results support international studies on the effectiveness of such programs and reinforce the relevance of developing programs of this nature for the promotion of mental health.

Keywords: *well-being; mental health; positive psychological interventions; effectiveness evaluation*

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082

Food intake, physical activity and quality of life among children and youth

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BACKGROUND: Food intake and physical activity have an important impact in the quality of life of children and youth, whose relationship with obesity translates into a public health central problem in developed and developing countries. The health-related quality of life construct implies a relationship with variables such as eating habits and physical activity. Among the multiple variables that determine these behaviours, sociodemographic and anthropometric variables such as gender, age and Body Mass Index (BMI) are highlighted, which are essential in the definition of healthy lifestyle habits promotion strategies. **OBJECTIVES:** The aim of this study is to characterize and relate physical activity (PA), eating behaviour (EB) and quality of life (QL) in children and youth, as well as explore gender, age and BMI influences on these dimensions. **METHODS:** it is a non-experimental study, with 337 children and youth, ages between 8 and 17 years (12.61 ± 2.96), mostly from the rural interior of Portugal. We used a sociodemographic and anthropometric questionnaire, a weekly register table of food intake (lunch and dinner) and the Portuguese version of the Kid-kindl, a quality of life instrument, in data collection. The descriptive and inferential analysis ($p < .05$) were performed in SPSS-IBM 25. **RESULTS:** Lower BMI was associated with better EB ($p < .001$), PA ($p < .05$) and self-esteem ($p < .01$) and worse

scores on family subscale of QL. The female gender showed higher fruit intake ($p < .05$). The older group has shown better results in all variables. Physical activity correlated positively with QL ($p < .01$) and EB ($p < .05$). Conclusions: it is important to explore other relevant social and family dimensions, to promote intervention programs with parents, school and community, as well as healthy practices policies. We intent that these behaviours become conduct patterns with repercussions in health and quality of life, economy and sustainability. Furthermore, the intervention in these age groups is critical for a longer-term impact in improving healthy life habits.

Keywords: Food intake, physical activity, quality of life, children/youth

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O84

Myths, drug consumption and sport practice in adolescents: A research-action

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BACKGROUND: Evidence-based practice is fundamental to prevent drug consumption in adolescents. Literature highlights the possible positive impact of myth and belief reduction intervention, namely those associated with the rate of social acceptability and prevalence of consumption, as well those related with the effects and consequences of substances^[1,2]. In addition there are myths that establish a relation between consumption and sport practice, the last being a protective factor. **OBJECTIVES:** evaluate the impact of an intervention about drugs and sport practice myths within adolescents from the Centre of Portugal; compare myths and the intervention impact in extracurricular physical activities/sports practitioner and non-practitioner adolescents. **METHODS:** it has been developed a quantitative research-action, with 172 adolescents, aged between 13 and 18 ($M=14.72 \pm 1.17$), 59.8% males and 64.1% of extracurricular physical activities/sports practitioners. Adolescents engaged in a myths and beliefs training program consisted in fortnightly 6 sessions of 60 minutes. They filled, before and after intervention, a 16 items *ad-hoc* questionnaire about myths associated with drug consumption and 7 statements about sport practice. **RESULTS:** An enhancement ($p=.000$) was verified in the knowledge levels about drug consumption ($M=3.48 \pm .64$ vs $M=4.06 \pm .73$) and of sport practice ($M= 3.64 \pm .41$

vs $M=3.88 \pm .53$). There was a decrease in all drug consumption items, except on the idea that in fun groups it's cool to smoke tobacco and consume cannabis, as well as in the belief that drugs increase creativity being used by artists. Also the use of recreational drugs, in sport context, is not considered doping, since it does not lead to enhancement in physical performance. The extracurricular physical activities/sports practitioners have shown better results before and after intervention ($p=.041$ and $p=.032$, respectively), but only in drug consumption myths. **CONCLUSIONS:** This intervention was effective, although some drug consumption beliefs, including its relation with sport practice, has to be reinforced since this may represent a consumption risk. Moreover, they are critical adolescence development tasks, namely the integration in peer groups and definition of professional profiles. It is also important to explore the impact of extracurricular physical activities/sports practice, since the practitioners revealed higher levels of drugs knowledge and sport practice is a protective factor^[3].

Keywords: myths, drug consumption, physical activities/sports practice, adolescents

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O94

Serious Leisure, Perception of Health and Quality of Life among Students of the city of Imperatriz, Maranhão, Brazil

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BACKGROUND: Sport, physical activity and leisure are important tools for improving health and quality of life. The early beginning of these practices is crucial to prepare children for a healthy and active lifestyle during their adult and elderly ages. Some authors^[1,2] frame some sports and physical activities in the Serious Leisure perspective, which concept includes six distinctive qualities: Benefits, Career, Effort, Ethos, Identity and Perseverance. Despite Serious Leisure qualities were analyzed in different sport activities such as surfing, kayaking, snowboarding and mountain climbing^[2,3], and related with different areas, such as tourism^[4] and education^[5], few studies about their relation with the health area was published until now^[6]. **OBJECTIVE:** The main goal of this work was to understand the relation between the six qualities of the Serious Leisure and the profile and constrains of the practice of sports and physical activities, and perception of health and quality of life. **METHODS:** For this purpose, a survey by questionnaire was applied to a sample of 217 students, aged between 14 and 18 years (40.1% males and 59.9% females), from

the 1st, 2nd and 3rd grade of the "Graça Aranha Teaching Center", in the municipality of Imperatriz, located in the State of Maranhão, Brazil. Data gathered through the questionnaires was subjected to statistical treatment using Statistical Package for Social Sciences software (SPSS v.22, SPSS Inc., Chicago, IL). **RESULTS:** The data revealed that: 69.1% of students are currently participating, 27.6% are ex-participants, and 3.2% never participated in sports; most (64.7%) sports participants of our sample are practicing sports frequently (more than three times per week); the main reason that led teens to practice sports or physical activities is to improve their health, and the main constrain for the practice is the lack of time. **CONCLUSIONS:** The results also demonstrated a strong and positive relation between the Serious Leisure qualities and the perception of health and quality of life (the higher the Serious Leisure qualities, the higher the perception of health and quality of life). This study allowed to understanding the relation between Serious Leisure and sports practice and the perception of health and quality of life in a sample of Brazilian students and the results can help in the development of strategies of sports and physical activities promotion by school directors and public health policy managers in order to improve an active and healthier lifestyle of their citizens.

Keywords: *Health, Quality of Life, Physical Activity, Serious Leisure, Sport*

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O95

‘Journey Through the essence of self’ Course: The challenge of constructing a scientific-based Mobile learning course/PodCast for Insight Timer App focusing on positive psychology, mindfulness and self-awareness

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BACKGROUND: Mobile learning/ mLearning (ML) holds promise and provides new opportunities, and academic research is focused on transforming it into a new emerging discipline^[1]. Relevant mLearning pedagogical affordances (based Navigationism, Connectivism, Heutagogy and Social-Constructivism) are proposed by researchers^[1]: (i) Personal Publishing and Sharing; (ii) Personalized Learning Environments; (iii) Contextual Learning; (iv) Audio-Rich Language Learning; (v) Personal control and learning ownership and (vi) Support and Motivational Messages. Moreover, Podcasting is a form of ML in which a device is used to listen to an audio broadcast^[2]. Although studies on podcasting are scarce, Evans^[2] found that significantly more higher education students (i) thought podcasts were more effective than revising from

textbooks and (ii) believed that they were more receptive to the material delivered as podcasts than traditional methods. Furthermore, self-awareness, mindfulness and other positive psychology related-constructs are increasingly proving their impact on mental health^[3]. Finally, InsightTimer is the largest free library of guided meditations worldwide (>15,000 titles) and one of *Time* magazine's list of 50 best applications (apps). Data from the app's latest internal survey showed that 63% of American meditators used it. **OBJECTIVES:** This paper's purpose is to present the scientific foundation/construction process of a mlearning course/podcast. **METHODS:** Methods included literature review, expert's consultation, benchmarking ML successful practices and pedagogical framework (learner-centred design). Audacity software was used for audio editing, mixing voice, background-music and specifically targeted music to trigger emotions. Each session had approximately 15 minutes (scientific content and exercises to consolidate learnings) and includes Relaxation and mindfulness techniques, Coaching, Neurolinguistic-Programming, Savouring^[4], learned optimism^[5], self-awareness, Awe, Zest, Gratitude and other positive psychology constructs^[3]. **RESULTS:** The course final version was comprised of 10 sessions: (i) Being me: The development of the self & inner child revivifying; (ii) My emotional program & the sensor technique; (iii) Navigating the self through changes & The Golden Path; (iv) My mind: Monkey-mind & ‘Undock the brain’ technique; (v) Healing my ‘sense of self’ & The dome Technique; (vi) Learned Optimism & my inner coach; (vii) To Be and to experience, mental models & The Witness Technique; (viii) Gratitude & Savoring Techniques, (ix) Happiness, Purpose and Meaning: An Encounter with my integral self and (x) My Life, My Choice & My Story: Connecting my sense of self. **CONCLUSION:** We discuss ML and podcasting future as a path to self-development learning and present future research steps, including user's reviews analysis.

Keywords: *Mobile Learning, Podcasting, Self-Development, Positive Psychology, Mindfulness*

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O96

Scoliosis in adolescence: screening in schools in southern Portugal

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BACKGROUND: Scoliosis is a lateral curve on the spine in the frontal plane at an angle greater than 10° on the radiograph obtained by Cobb's method and may be accompanied by vertebral rotation, deformity in the sagittal plane and ribs^[1,2].

OBJECTIVES: This study aimed to determine the prevalence of scoliosis in adolescents. **METHODS:** The sample was constituted by 205 adolescents, ages 12 to 17 years old (14.67±1.51), being 106 (51.7%) boys and 99 (48.3%) girls, enrolled in 8th and 10th years of schools in Portimão city, southern Portugal. The instrument of measurement consisted of a scoliometer. To perform the evaluation, the adolescents remained in flexion of the spine, and, in this position, the evaluator positioned the scoliometer perpendicular to the evaluated vertebral zones which were the mid-thoracic (T4-T8), thoracolumbar (T12-L1) and lumbar (L2-L5)^[3]. The side of the hump determined laterality of trunk rotation. Students that showed a trunk rotation between 5° to 6° degrees were classified with intermediate asymmetry (corresponding to an angle of 10° in Cobb's method) and the values equal to or greater than 7° corresponded to the presence of scoliosis of severe asymmetry (angle of 30° in Cobb's method)^[4]. Several studies have found a good inter and intra-rater reliability of the scoliometer and are reporting/reported a sensitivity of 90.6% and a specificity of 79.8%⁵. **RESULTS:** Scoliosis was present in 10 (4.9%) adolescents, being 5 (2.4%) classified as intermediate asymmetry and 5 (2.4%) as severe asymmetry. Values of minimum, maximum, mean and standard deviation in mid-thoracic, thoracolumbar and lumbar spine regions were, respectively: 0-7, 1.42±1.26; 0-10, 1.46±1.31; 0-15, 1.68±1.86. Regarding the side of the curve, in mid-thoracic zone 97 (47.3%) were on right and 47 (22.9%) on left side, in thoracolumbar 89 (43.4%) were on right and 68 (33.2%) on left, and in lumbar zone, 94 (45.9%) on right side and 53 (25.9%) on left side. Boys had 3.96 more chances to have scoliosis (95% CI: 0.82-19.12; p=0.087) compared with girls, and younger students (12-14 years old) present 1.68 more probability to have an injury (95% CI: 0.46-6.14; p=0.433) than the older one (15-17 years old), but these associations did not reach statistical significance. **CONCLUSIONS:** Data showed a lower prevalence of scoliosis in this adolescent sample, in agreement with results of other studies. Despite this result, it is important to perform these screenings because it allows detecting mild and reversible spinal curvatures and treating them conservatively.

Keywords: scoliosis, school age, spine

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O97

Combining resistance and aerobic training intensities: a brief review

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BACKGROUND: Concurrent training (CT), which involves a combination of resistance and aerobic regimens, has attracted strong attention from the scientific community in recent years due to its potential to simultaneously induce cardiorespiratory and neuromuscular gains^[1]. While some researchers have shown that CT affects the development of muscle strength and power (i.e., interference effect^[2]), others have indicated that CT has no inhibitory effect on strength and aerobic development^[3,4]. The interference between strength and aerobic training (AT) can be explained by several factors related to the training program, such as the volume, intensity, and training frequency^[5]. Researchers focused on CT have recently tried to understand its effects by studying the detraining (DT) period after a CT program. A better understanding of the DT experience is essential for the maintenance of training-induced improvements. **OBJECTIVES.** Synthesize and analyze the scientific evidence regarding aerobic and resistance exercise intensities during CT and their effect on performance variables. Furthermore, the effects of exercise intensity on a subsequent DT were assessed to better understand the impact of CT intensity. **METHODS.** A search was conducted using five databases for original articles published between January 1980-July 2018. The included studies focused on experimental interventions related to CT and DT in young adults (between 18 and 35 years old) with performance-related outcomes (i.e. time, velocity, strength, aerobic capacity and power). Studies written in English, published in a peer-reviewed journal were included, however, the review articles (qualitative review, systematic review, and meta-analysis), theses and dissertations were not considered. The information extracted from the selected studies was based on research design, aim, subjects, procedures and findings. A total of eight studies met the inclusion criteria. The results were recalculated to determine changes and effect sizes. **RESULTS.** CT improved performance regardless of the exercise intensity used (4-47%). When higher aerobic intensities were used, aerobic gains were increased (5-9%). Greater neuromuscular adaptations were found when higher resistance loads were combined with low to moderate AT (10-14%). The polarized training intensities distribution throughout the season showed to maximize aerobic gains (4-7%) and strength (24-47%). In addition, a training cessation for 2-4 weeks reversed the training-induced gains. **CONCLUSION.** Higher intensities of AT or resistance training induce greater aerobic or neuromuscular gains, respectively. Nevertheless, one should be aware of an interference effect on strength for higher aerobic intensities and performance reductions with DT. The information shown in this review could provide useful tools for coaches to develop efficient training programs.

Keywords: Performance, Resistance Training, Aerobic Training, Intensity

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O100

A combined intervention on psychological and physical capacities of frail older adults: Randomized Controlled Trial

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BACKGROUND: Frail older adults experience physical and psychological decline^[1,2] that lead to a decrease in self-care and independence. Adapted and structured combined interventions including multiple components are associated to delay of frailty progression^[3,4,5]. **OBJECTIVE:** To assess the effectiveness of a Combined Intervention (CI) composed of a Cognitive Stimulation Program (CSP) and a Physical Exercise Program (PEP) on cognitive and physical capacities, humor and activities of daily living of frail older adults **Design:** A single-blinded two-arm randomized controlled trial with multicenter approach was conducted among frail older adults from day-centers and nursing homes. **METHODS:** Fifty clinically stable subjects, with capacity to actively participate in CI, without severe cognitive decline and severe depressive symptomatology, were recruited. Forty-four older adults (65.9% female), mean age of 80.55 ± 8.47 years were considered eligible to participate in the study. Participants were randomly allocated in intervention group (IG) to receive CI or in control group (CG) to receive standard care. Data was collected at baseline and post-intervention. Primary outcomes were cognitive performance, depressive symptomatology, gait speed, biomechanical parameters of gait, risk of fall based on gait and balance and anthropometric data. Activities of daily living were a secondary outcome. The IG received CI three times a week (two sessions of PEP and one session of CSP), during 12 weeks. Data were analyzed considering non-parametric within-group (*Wilcoxon test*) and between-group (*Mann Whitney test*) tests. **RESULTS:** Within-group analysis revealed that IG significantly reduced depressive

symptomatology ($p= 0.023$) and risk of fall based on gait and balance ($p= 0.009$), and improved static balance ($p= 0.002$), gait speed ($p= 0.037$), and weight ($p= 0.040$). For CG, within-group analysis revealed significant decrease in terms of orientation ($p = 0.014$) and activities of daily living ($p= 0.021$); CG showed a decrease in body mass index ($p= 0.031$) and a marginal improvement on delayed verbal recall ($p= 0.053$). Between-group analysis revealed the best results on the IG where statistically significant post-intervention differences were found in depressive symptomatology ($p = 0.024$) and in the orientation' subdomain ($p= 0.025$). **CONCLUSION:** CI composed of cognitive stimulation and physical exercise improved cognitive and physical capacities of frail older adults. CI also showed to have potential impact on postponing decline in ADL. Based on these study results, it can be concluded that CI is a structured, adapted, sustainable, non-pharmacological and effective approach with high possibility of replication.

Keywords: *frail elderly; exercise; cognitive stimulation; combined intervention; nursing*

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Trial registration—registry

ClinicalTrials.gov: NCT03390478

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O101

The influence of a specific exercise program on ventilatory muscle strength in individuals with Ankylosing Spondylitis

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BACKGROUND: Ankylosing Spondylitis is a systemic chronic rheumatic inflammatory disease that progressively leads to structural changes that condition the functionality and quality of life of the individuals with the disease. These structural changes can also lead to changes in the respiratory system namely the decrease in ventilatory muscle strength. **OBJECTIVES:** Evaluate the influence of a specific exercise program in ventilatory muscle strength in a population of people with AS though the values of MIP and MEP, and its relationship with the Bath indices. **METHODS:** Quasi-experimental study applied to 13 individuals with Ankylosing Spondylitis, divided in two groups (control and experimental). A subject selection questionnaire was applied before the first evaluation and in both of the evaluation moments the BASDAI, BASFI and BASMI scales were used and the MIP and MEP of the subjects were measured using a manovacuometer. The statistic treatment was done using the SPSS software version 24. The established level of significance was $\alpha = 0,05$. **RESULTS:** There we verified statistically significant improvements in the Bath Ankylosing Spondylitis Disease Activity Index ($p=0,047$) and Bath Ankylosing Spondylitis Functional Index ($p=0,016$) scores in the experimental group. There weren't verified statistically significant changes in the Maximum Inspiratory Pressure and Maximum Expiratory Pressure values between groups in any of the evaluation moments. **CONCLUSIONS:** The applied specific exercise program influenced significantly the BASDAI and BASFI indices scores, however, the same was not verified relatively to ventilatory muscle strength of the analyzed individuals.

Keywords: *bath indexes; physical exercise; ventilatory muscle strength*

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O102

The influence of a specific exercise program on the balance of individuals with Ankylosing Spondylitis

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BACKGROUND: Ankylosing spondylitis (AS) is a rheumatic, inflammatory and chronic disease inserted in the group of spondyloarthropathies. It is characterized by mobility deficits in the spine and pain, presenting also extra-articular signs such as

entesopathy and uveitis. Diagnosis is achieved by combining clinical and radiographic criteria. Studies performed with AS patients have shown a decrease in postural control resulting from loss of mobility of the spine and adjacent joints. **OBJECTIVES:** To verify the influence of a specific weekly exercise program with 10 sessions in individuals with AS and to verify the link between Bath Indexes and this same program. **METHODS:** A quasi-experimental study was performed in 13 individuals with AS. 7 individuals were doing the exercise program, being part of the experimental group and 6 individuals were part of the control group. Biodex Balance System® and Bath Indexes were used as evaluation tools. A P value <0.05 was considered as statistically significant. **RESULTS:** There were no statistically significant changes in the experimental group balance over the 10 weeks. Statistically significant results found only in BASDAI ($p=0,047$) and BASFI ($p=0,016$) of the Bath Indexes. **CONCLUSIONS:** It was concluded that a program of exercises aimed for joint mobility and postural control did not present significant improvements in the balance of a population with AS, although they showed improvements on the functionality and symptomatology of the disease.

Keywords: *bath indexes; biodex balance system®, exercise*

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O108

Well-being and quality of life in a sample of bakers and confectioners from the central region

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BACKGROUND: Quality of life is influenced directly by working conditions, being fundamental factors for the physical and psychological well-being of the employees^[1,2]. The profession of baker and confectioner is characterized by low work safety due to high physical effort, night work schedules and constant exposure to risk factors, namely transport of heavy loads, contact with high temperature apparatus, contact with dust and dust, associating the risk of asthma and rhinitis in these workers^[3]. Thus, it is pertinent to evaluate the well-being and quality of life in this population. **OBJECTIVES:** Characterization of health and quality of life in a sample of bakers

and confectioners. **METHODS:** An observational study was carried out in a sample of bakers and confectioners from central Portugal ($n = 30$), evaluating sociodemographic variables, self-reported weight and height, quality of life and parameters related to the physical component (physical function, body and general health), using the Medical Outcomes Study SF-36 questionnaire adapted to the Portuguese population. The study was authorized by the Ethics Committee of the Polytechnic Institute of Leiria and obtained free informed consent for participation in the study of all individuals. Data was analyzed using SPSS statistical software, using non-parametric tests. **RESULTS:** Quality of life was assessed by almost half of the participants as being 'good' (46.7%), 'good' (26.7%), 'fair' (23.3%) and 'excellent', and these results may be associated with the young age of the respondents ($\Sigma = 39$). The mean value of the score obtained in the functional capacity domain was 92.1, meaning that the sample had very good physical capacity, not presenting limitations in daily activities. Body pain had a mean score of 80.2, which did not affect daily tasks. As for the general health self classification, the mean score was 65.7, and in this case, this being the domain with the lowest mean score. **CONCLUSIONS:** This sample of bakers and confectioners demonstrates a good quality of life, not reporting physical limitations or pain, that affect their daily activities. Health in general was the domain with the lowest mean value (65.7), revealing that the sample is not considered in perfect health conditions, and this value may not be related to the profession, but to external factors, given the scores obtained in other areas.

Keywords: *quality of life, bakers, confectioners, physical capacity, body pain*

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O111

Functional Movement Screen® evaluation: comparison between elite and non-elite juvenile swimmers

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BACKGROUND: The FMS® test battery has been used to identify and assess the stability and mobility standards required for any athlete seeking improvements in functional movement patterns^[1]. Specifically in swimming, it is used to test athlete's performance^[2]. Swimming performance can be influenced by several factors such as physiological, biomechanical, and anthropometric characteristics^[3]. Assessing physical skills of young swimmers is in the interest of sports professionals and

practitioners^[4]. **OBJECTIVES:** The current study aimed to assess and compare FMS® values in elite and non-elite young swimmers, as well as to verify their relationship with performance level. **METHODS:** 32 swimmers, aged between 13 and 16 years old (14.99 ± 0.13 years old) were classified as elite group and 17 swimmers, aged between 13 and 15 years old (14.65 ± 0.19 years old) were non-elite group. FMS® was applied to each swimmer individually before training by two experienced researchers. The test battery was composed by seven exercise patterns assessed in a scale of 0 to 3. Each swimmer performed each exercise three times and the best result was recorded for further analysis. Data normality was tested using Shapiro-Wilk and Kolmogorov-Smirnov tests. Mann-Whitney U-test and t-test were used to compare FMS® values between groups. Pearson's coefficient (r) and coefficient of determination (r^2) were used to verify correlations between performance and FMS® values. The strength of the relationship and magnitude of effects were also calculated. **RESULTS:** The total score obtained for the elite group was higher than the non-elite group (17.03 ± 1.81 vs. 14.59 ± 1.94 , $p = 0.000$). Statistical significance was set at $p \leq 0.05$. The elite group presented better results in all tests performed, except for the left shoulder mobility test (2.53 ± 0.62 vs. 2.65 ± 0.61 , for elite and non-elite, respectively). Statistical differences were found between the elite and non-elite groups in the deep squat ($p = 0.005$), right hurdle step ($p = 0.005$), left hurdle step ($p = 0.002$), as well as trunk stability push up ($p = 0.000$). There was a positive relationship ($r = 0.6$, $r^2 = 40.9\%$, $p = 0.000$) between performance level (FINA points) and total FMS® score in these swimmers. **CONCLUSION:** The results suggested that total FMS® score is affected by different competitive performance levels, namely the elite and non-elite level. Elite swimmers showed higher values and a positive relationship was found between performance and total score.

Keywords: *movement screen, functional performance, juvenile swimmers, elite and non-elite swimmers*

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O112

Biomechanical health and well-being of professionals during eutocic delivery

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BACKGROUND: Work-related musculoskeletal disorders (WMSD) are the main labour problem referred by nurses, with an incidence 76.24% higher when compared with other professional groups^[1]. The work process, the high physical demands, the environment, the underlying stress and the emotional component are some of the factors that contribute to its prevalence, ranging from 71.85% to 84%^[2]. This reality is especially evident in the daily clinical practice of nurses who specialize in maternal and obstetric health (EESMO); however, their underlying risks^[3]. **OBJECTIVE:** To analyse the factors that contribute to the difficulty in adoption of biomechanics' principles by EESMO, during parturient care, on the second and third stages, in horizontal births; **METHODS:** Study with mixed method, using qualitative analysis of 25 births, and quantitative analyses of 21 activities, developed by EESMO during delivery. The REBA (Rapid entire body assessment) scale was applied to determine the risk and the videotapes of the deliveries that were recorded were analysed, after the authorization of the parturient. Study approved by ethics committee. **RESULTS:** We identified 11 activities that required rapid intervention, given the achievement of a high-risk score for WMSD, and two activities requiring immediate intervention, given the very high-risk score for MSD; these last were: manipulation of the facial area of baby (facial expression to release secretion) (score 11.3), and release of the baby's anterior shoulder (score 10.4). During the second and third stage of labour, 62% of EESMO activity presents high to very high risk of developing MSD, classifying the moment of delivery as very critical one in the professional exercise of EESMO. In the analysis of the videos, it was verified that due to the nature of the professional activity, the EESMO spent long periods of time adopting body positions that are not aligned, with flexion of the head, elevation of the shoulders, misalignment of the trunk and vertebral column. **CONCLUSIONS:** It is essential that the EESMO reflect on its clinical practice, analysing not only the care provided, but also its biomechanics in the course of its execution. The principles of ergonomics should be adopted, since they largely contribute to the well-being of the professional, as well as to ensure that the care is productive, safe, efficient and of quality, for both professionals and patients.

Keywords: *biomechanical, musculoskeletal disorders, nurse-midwives, obstetric delivery*

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O124

Assessment of Nutritional Status and Dietary Intake of Institutionalized Elderly People in Viseu

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BACKGROUND: In elderly people inadequate dietary intakes, by deficit or in excess, may decrease the quality of life and increase morbidity and mortality in the elderly people^[1,2]. Malnutrition is highly prevalent in institutionalized elderly and often remains undetected or unaddressed^[3]. This suggests that the nutritional status of this population should be appropriately evaluated and improved. **OBJECTIVES:** The present study aims to assess the nutritional status and dietary intake of institutionalized elderly subjects in Viseu, Portugal. **METHODS:** An observational study was carried out on 15 institutions. Participants were voluntary residents aged 65 and older, who had been living in the institution for at least 3 months, were not bedridden and had no psychiatric disorders or dementia. Nutritional screening was performed using the body mass index (BMI)^[4] and the Mini Nutritional Assessment score (MNA)^[5], whereas dietary intake was assessed using a three-day food intake record. **RESULTS:** The mean age of the subjects (n=214) was 82,3±6,1 years-old. The majority were women (72,0%). Average BMI was 27,6±4,6Kg/m² for men vs 28,6±4,9 Kg/m² for women, with 57,9% classified as overweight (27,4% men, 72,6% women). According to their MNA scores, 28% of elderly were considered at risk of malnutrition (RM), 80,0% of which were women. A statistically significant difference (p<0,05) in energy intake was found between women at risk of malnutrition and those with a normal nutritional status between energy intake (average 1621,2±326,0Kcal/day vs 1747,3±294,5Kcal/day respectively). This was not observed in men, despite their higher average energy intake (1635,7±326,8kcal/day vs 1820,4±328,4Kcal/day). Women at risk of malnutrition also had lower ingestion of protein, lipids, fibre, water, thiamine, folic acid, vitamin B12, ascorbic acid, magnesium, zinc, sodium, potassium and phosphorus (p<0,05), whereas in men, significant differences were observed in water, fibre, folic acid, retinol, iron, magnesium and fluorine intakes. In both genders, higher BMI classes were found to have greater energy intakes, as well as an increased micro and macronutrient consumption (p<0,05). **CONCLUSION:** Our study showed that a significant proportion of our population of institutionalized elderly seem to be at a high risk of malnutrition. Women seem to be particularly vulnerable, with those at risk of malnutrition showing inappropriate energy and nutrient intakes when compared to those with a normal nutritional status. These findings stress the importance of an adequate nutritional screening of institutionalized elderly, in order to develop interventions for this particularly vulnerable population.

Keywords: elderly; food consumption; institutionalized, nutritional status; mini-nutritional assessment

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O135

The FIFA 11+ for injury prevention in amateur futsal players

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BACKGROUND: The fast growth in the rates of futsal participation has increased the awareness and concern of public health, as it was estimated that the rate of injuries in futsal is the double of football^[1]. Preventive measures should be a part of planning of a sports season, as any type of time-loss injury is associated to decreased sport participation of the athlete, which affects any level of team sports participation which leads to costs to the club, time-loss at work, as well as may lead to long-term morbidity and additional costs to the health system^[2-5]. The FIFA 11+, can lead to a 30 – 50% reduction in injuries^[6, 7]. No study was conducted so far to examine the effectiveness of the FIFA 11+ program in reducing injury in futsal players. **OBJECTIVE:** To examine the effectiveness of the FIFA 11+ in reducing injury in futsal players. **METHODS:** This study, was a parallel, two-group, stratified randomized controlled trial. Ninety-one male futsal players from six amateur futsal clubs were recruited and assessed for eligibility. Seventy-one were randomized to the FIFA 11+ group (n=37, age: 27.0±5.1 years) and a control group (n=34, age: 26.0±5.1 years). The FIFA 11+ program was executed twice a week, replacing the regular warm-ups of the experimental teams during training sessions, for 20 weeks, separated by a 10-week period where both groups executed their regular warm-up. Data on match, training exposure and injuries were recorded during the regular season. Injury incidence rates (number of injuries/1000 player-hours) were calculated for each of the two randomized groups. The independent T-test and chi-square were used to compare variables between groups. **RESULTS:** The players sustained a total of 58 injuries during the futsal regular season, of which, 24 in the FIFA 11+ group and 34 in the control group; the overall incidence of injuries per 1000 player hours was significantly higher in the control group [11.6 vs. 6.5; mean difference (95% CI), -5.1 (-9.1 to -1.1), p=0.014].

The FIFA 11+ presented a significantly lower incidence of acute [11.2 vs. 5.7; -5.5 (-9.4 to -1.6), p=0.007] and lower limb [8.7 vs. 4.4; -4.2 (-8.1 to -0.4), p=0.032] injuries per 1000 player hours. Players from the control group presented a higher number of days injured (20.4 ± 17.3 vs. 10.5 ± 9.1, p=0.036). **CONCLUSIONS:** The athletes exposed to FIFA 11+ program, showed a significant reduction of overall, acute injuries, lower limb injuries as for injuries during training sessions. The FIFA 11+ is an injury prevention program suited for injury reduction in amateur futsal players.

Keywords: warm-up, injuries, injury severity, time-loss injuries, adults.

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O142

Atividade antibacteriana e efeito na microbiota vaginal de frações obtidas a partir do extrato de acetona de *Calluna vulgaris* (L.) Hull

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INTRODUÇÃO: A sociedade atual enfrenta uma preocupação crescente no que respeita à resistência microbiana aos antibióticos e, como consequência, a descoberta de novos agentes antimicrobianos eficazes torna-se uma prioridade global e urgente^[1]. As matrizes naturais, devido à sua diversidade e riqueza em moléculas de reconhecida atividade biológica, têm sido extensivamente estudadas no sentido de avaliar também o seu potencial antimicrobiano. Dentre as matrizes naturais com propriedades bioativas encontra-se a espécie *Calluna vulgaris* (L.) Hull (comumente conhecida como urze), sendo a única espécie do género *Calluna* (Ericaceae). As infusões e decocções preparadas a partir desta planta constituem as formas de preparação mais consumidas na medicina tradicional, descritas

como tendo efeitos benéficos para a saúde nomeadamente, no alívio da dor reumática, artrite, e efeitos calmantes. No entanto, é no tratamento de infeções do trato urinário que esta espécie sobressai pelas suas propriedades antimicrobianas e anti-inflamatórias^[2]. **OBJETIVO:** Assim, no presente trabalho, o extrato de acetona de *C. vulgaris* previamente estudado pelos autores e, tendo revelado excelentes propriedades antibacterianas^[3], foi fracionado por cromatografia em coluna de sílica gel através de um sistema de eluente de polaridade crescente, obtendo-se dez frações diferentes (Fr 1 a Fr 10). **MÉTODO:** O perfil fenólico foi analisado por HPLC-DAD-ESI/MS. Os principais compostos fenólicos presentes nas frações foram dímeros de catequina do tipo B (epi), (-) - epicatequina e (+) - catequina. A atividade antibacteriana também foi analisada contra bactérias patogénicas e foi ainda avaliado o seu efeito na microbiota vaginal não patogénica. **RESULTADOS:** Algumas das frações obtidas revelaram a capacidade de inibir microrganismos patogénicos sem afetar a microbiota vaginal não patogénica, especialmente as frações Fr 7 e Fr 8. A bactéria patogénica *Neisseria gonorrhoeae* foi inibida por ambas as frações, sendo que a fração Fr 7 foi também ativa contra as bactérias *Klebsiella pneumoniae* e *Morganella morganii* e a fração Fr 8 contra *Staphylococcus aureus* resistente à metilina (MRSA) e *S. aureus* suscetível a metilina (MSSA), sem afetar as 3 espécies de *Lactobacillus*, presentes na microbiota vaginal. **CONCLUSÃO:** Este estudo corrobora o uso terapêutico desta espécie na medicina tradicional. Demonstra que esta planta inibe alguns patogénicos responsáveis por diferentes patologias vaginais e urinárias sem interferir com o crescimento de alguns dos *Lactobacillus* pertencentes à microbiota vaginal.

Keywords: *Calluna vulgaris* (L.) Hull, Compostos fenólicos, atividade antimicrobiana, patogénicos vaginais e urinários, microbiota vaginal.

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O144

Perceived social support and online video games addiction: gender differences in Portuguese adolescents?

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BACKGROUND: The perception of social support and online video games addiction appear to be important factors to be taken into account in promoting the health and well-being of adolescents^[1,2]. **OBJECTIVES:** The aim of this study is to evaluate a sample of adolescents regarding perceived social

support and dependence on video games, exploring the gender differences in these variables. **METHODS:** A convenience sample of 135 adolescents (64 females, 71 males), aged between 12 and 18 years (M = 15.28; SD = 1.37) was evaluated by the Portuguese version of the Internet Gaming Disorder Scale - Short-Form (IGDS9-SF)^[3] and by the Social Support Satisfaction Scale (ESSS)^[4]. Mann-Whitney U test was used to explore gender differences. **RESULTS:** The adolescents of the sample scored between 9 and 34 (M = 13.63; SD = 5.74) - below the cutoff point of the scale: 36. In the ESSS, results ranged from 23 to 75 (M = 58.39; SD = 10.79). Male adolescents tend to present higher scores in IGDS9-SF (U = 3865; p < .001). Regarding ESSS dimensions of satisfaction with friends, family satisfaction and social activities no differences were found between male and female adolescents. Regarding ESSS Intimacy dimension, male adolescents tend to present higher scores (U = 2751.5, p = .034). **CONCLUSIONS:** Despite the growing social concern about the excessive use of online video games, none of the adolescents presented scores compatible with addiction. It seems, as it would be expected from the literature, to be male adolescents who play mostly online. Regarding the perceived social support, no gender differences were found, except for the Intimacy dimension, in which boys tend to score higher. This result, which cannot be sustained in the international literature, may be related in part to gender stereotypes (especially regarding intimacy) that may exist among some of the adolescents in the sample.

Keywords: adolescents, social support, video games, internet

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O146

A efetividade da Arterapia no Tratamento da Doença Mental: revisão integrativa

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INTRODUÇÃO: À luz dos registos epidemiológicos recolhidos na última década, é possível afirmar que, os problemas relacionados com a saúde mental são a causa primordial de incapacidade e uma das causas principais de morbidade e morte prematura^[1]. A pessoa com doença mental enfrenta uma enorme variedade de sintomas entre as quais alterações do humor, memória, perceção e pensamento. Muitas destas alterações evoluem no tempo, tornando o indivíduo disfuncional, a nível pessoal, familiar, social e laboral. Diante da complexidade desta problemática, diferentes tipos de programas terapêuticos de natureza psicossocial, têm sido concebidos para a recuperação do seu estado de saúde mental, designadamente a arterapia.

OBJETIVO: A presente revisão integrativa da literatura pretende analisar a produção científica sobre a efetividade da arteterapia no tratamento da doença mental. **MÉTODO:** Foram incluídos 6 estudos selecionados a partir da base eletrônica *Medline*, em que os critérios de inclusão incluíram: artigos publicados disponíveis em *full text* dos últimos 5 anos; estudos na língua inglesa, espanhola e portuguesa; estudos sobre arteterapia que envolvam pessoas com doença mental; e estudos de natureza quantitativa, qualitativa e/ou mistos. **RESULTADOS:** A evidência encontrada entre os resultados obtidos permitiu verificar a efetividade da arteterapia no tratamento da Doença Mental, nomeadamente no que diz respeito à Depressão, Esquizofrenia e Transtorno Pós-Traumático. Foram ainda demonstrados benefícios para aspectos importantes do processo de reabilitação dos participantes, tais como a melhoria dos níveis de autoestima e autoeficácia, distração e alívio de preocupações e pensamentos negativos^[2,3], fundamentais ao modelo do *recovery*. **CONCLUSÕES:** Foram identificados diversos benefícios para a reabilitação psicossocial de indivíduos com doença mental a partir da produção artística. Todavia, alguns aspectos relativos ao uso da arteterapia como recurso terapêutico precisam de ser aprofundados, tais como os mecanismos pelos quais o processo artístico promove os seus efeitos, e qual duração dos seus benefícios. Os estudos encontrados na literatura são ainda incipientes, no sentido de avaliar a eficácia de programas de arteterapia para comparação de resultados, porque são orientados por objetivos diferentes e adotam amostras muito heterogêneas.

Keywords: *arteterapia, saúde mental, reabilitação psicossocial*

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O148

Influence of physical activity and aerobic fitness on the variation in quality of life of elderly women

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BACKGROUND: With aging and menopause, women experience important changes in body composition, aerobic fitness, levels of habitual physical activity and functional physical fitness, with implications for their quality of life. A better understanding of the relationship between these variables is very important when designing exercise programmes that are better adapted to the needs of this population. **OBJECTIVES:** This study aimed to analyze the isolated and interactive effect of physical activity and aerobic fitness in different domains of quality of life. **METHODS:** The sample included 54 women, aged between 67 and 94 years. The levels of habitual physical

activity were evaluated by accelerometry (Actigraph GT1M, Ford Walton Beach, Florida, USA) and the aerobic fitness by the Walk 6-minute test^[1]. The anthropometric variables included the weight, height and waist circumference that were used to characterize the sample. The quality of life was assessed through the SF-12 questionnaire^[2]. Anova with two fixed factors was used in the data analysis, considering a degree of statistical significance of 5%. **RESULTS:** In a sample with high levels of total and central adiposity, only 17 women showed moderate to vigorous physical activity levels recommended for health (at least 150 minutes of moderate physical activity) and 83,3% showed limited performance in the Walk 6-minute test. Any of the factors considered showed a significant interaction in the variation of the dependent variables and, in relation to emotional function and mental health, no significant isolated effects were recorded either. Aerobic fitness has shown a significant effect on overall health ($p=0,01$), physical function ($p<0,01$), pain ($p=0,05$), vitality ($p=0,02$) physical functioning ($p<0,01$). **CONCLUSIONS:** The results suggest that, regardless of the levels of physical activity, better aerobic fitness contributes to a better quality of life for elderly women.

Keywords: *aging, quality of life, physical fitness, physical activity*

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O152

Healthy Aging. The role of the exercise prescription in the frail elderly

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BACKGROUND: The normal aging process is characterized by a progression of physiological events that occur throughout the life cycle. Changes associated with aging occur throughout the body and are most prominent in the later years. Changes in the musculoskeletal system begin to occur after the third decade and continue into the eighth and ninth decades. The frailty syndrome can be described as a culmination of the effects of these changes on the human body, is a state of vulnerability that involves an increased risk of adverse events and disability in older adults. It is a condition with a complex etiology and pathophysiology^[1]. Skeletal muscle power decreases earlier than muscle strength with advancing age and is more strongly associated with functional capacity than muscle strength in frail elderly populations^[2]. **OBJECTIVE:** The aim of this study was to review and to update the state of art about physical exercise in the elderly, more specifically identify the practical recommendations for prescribing exercise in the frail elderly. **METHODS:** A systematic bibliographic search in Pubmed, Web of Science and Scopus databases was conducted. Clinical guidelines from major scientific organizations in the field of elderly and physical activity, sports medicine and health were considered. 10 publications were selected. We use key words such as: Frailty, Aging, Physical Activity, Functional Capacity, Exercise and Resistance Training. Multicomponent exercise programs, and especially resistance exercise that includes muscle power, are currently the most relevant interventions to slow down disability and other adverse outcomes, even in the oldest-old. **RESULTS:**

Moreover, these programs are valuable interventions in other frailty domains, such as falls and cognitive decline. Physical exercise, should be prescribed with a progressive individualized plan and just like other medical treatments^[3]. Intervention to prevent or delay frailty has important benefits for older people, their families, the health system and society. Frailty and the associated negative effects such as disability, institutionalization and hospitalization are costly^[4]. **CONCLUSIONS:** Despite this cost, to the best of our knowledge, there has been few research to date examining the effectiveness of an intervention designed to reduce the transition to frailty among elderly. Thus, we believe that the change in daily life habits of the elderly, for a more active and healthy lifestyle, through the inclusion of physical activity, well adapted to the specific and individual characteristics could improve the health and wellbeing of the elderly.

Keywords: *aging, exercise prescription, functional capacity, frailty, resistance training*

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O154

Tobacco and alcohol use in adolescents and young athletes: Differences between genders

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BACKGROUND: Adolescence is a time when children and young are susceptible to factors that influence the adoption of health-related behaviors^[1]. The use of substances, such as tobacco and alcohol is potentially associated with other risk behaviors^[2] extremely aggressive for teens^[3] and may endanger health and have serious consequences in adulthood. **OBJECTIVES:** The present study aims: (i) to identify the prevalence of tobacco and alcohol use - considering the profile of regular consumption, use or consumption, at least one day or more in the last 30 days, and (ii) to analyse the relationship between alcohol and tobacco consumption; in adolescents and young athletes, of both genders. **METHODS:** A total of 2144 subjects of both sexes, aged between 12 and 17 years, participants in the Youth Games of Paraná, Brazil, were studied. Sociodemographic indicators and risk behaviours associated with health (Youth Risk Behavior Survey Questionnaire) were collected. The one-off prevalences and respective confidence intervals ($\alpha = 0.05$) were stratified according to gender and modality. To identify the differences between the strata, we used the chi-square test (χ^2). The significance level was set at $p \leq 0.05$. **RESULTS:** The prevalence

of experimental tobacco use among boys (33,8%) and among girls (24,9%) shows significant differences regarding genders ($\chi^2 = 19.66$, $p = 0.001$). There were no significant differences between the boys (75.2%) and among the girls (74.7%). It should be noted that there were important differences between the genders regarding binge drinking among the athletes [33.5% ♂ versus 28.6% ♀ ($\chi^2 = 6,294$, $p = 0,001$)]. The age range, in both genders, for the initial uses and experimentation of tobacco and alcohol was comprised between 13-15 years. Among the sixteen sports modalities studied, we observed the experimental use of tobacco and alcohol in all of them. The most prevalent mode of use of tobacco was Cycling (43.5%), and the modality that presented higher prevalence of alcohol consumption was Handball (84.2%). **CONCLUSIONS:** Males have a higher prevalence of alcohol and tobacco use. There are only differences regarding gender, relative to the experimental use of tobacco. The prevalence of tobacco and alcohol consumption is very similar to the values found in the same age, Brazilian non-athletes. In very ten young athletes, three presented experimental tobacco use and eight, experimental alcohol consumption. We think, it is fundamental to implement intervention programs in young athletes' focused on information, prevention and control of the tobacco and alcohol use.

Keywords: *adolescent, ethyl alcohol, tobacco, additive behavior*

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O158

Qualidade do ar um problema de Saúde Pública

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INTRODUÇÃO: A temática da Qualidade do Ambiente Interior (QAI) tem, ao longo dos tempos, assumido um papel preponderante na sociedade uma vez que se tem verificado o aumento da permanência da população em espaços interiores^[1]. As principais fontes de poluição existentes no interior dos

edifícios estão relacionadas com características do próprio edifício, características da sua ocupação e características associadas à sua utilização^[2]. A QAI pode ser definida como “A natureza do ar que afeta a saúde e o bem estar dos ocupantes dos edifícios”. De acordo com a organização mundial da saúde, a poluição do ar interior estão associados efeitos na saúde das pessoas. Considerando que a população passa em média 90% do tempo em espaços interiores e as concentrações de poluentes em ambientes interiores são cerca de 2 a 5 vezes superiores a ambientes exteriores e, ocasionalmente, podem atingir concentrações 100 vezes superiores. Pode então dizer-se que a má QAI de um edifício, constitui um risco para a saúde dos seus ocupantes. Este risco está associado à existência de fontes de poluição que contribuem para degradar a QAI^[2]. **MÉTODO:** Foi avaliada a QAI de um centro de dia. Para a recolha de dados foram utilizados equipamentos portáteis, calibrados antes de qualquer amostragem. A análise dos dados foi realizada utilizando o programa IBM SPSS Statistic’s, versão 25. **RESULTADOS:** Verificou-se que existiam poluentes acima dos limiares de proteção legislativos, nomeadamente as PM_{2.5}, PM₁₀ e a humidade relativa, na cozinha. Observaram-se diferenças significativas entre os valores de concentração das medições executadas na cozinha e no gabinete, sendo que a cozinha apresentou valores médios mais elevados que o gabinete. **CONCLUSÕES:** Devem ser implementadas medidas, de forma a melhorar a QAI, particularmente na cozinha. A boa QAI deve ser uma prioridade para qualquer instituição ou para qualquer tipo de edifício, uma vez que esta, pode afetar gravemente a saúde dos seus ocupantes, com um maior ênfase nos trabalhadores e na sua segurança pois a qualidade do ar pode afetar a sua concentração e saúde, em geral, o seu desempenho e bem-estar no trabalho. A qualidade do ar, além de afetar o nosso bem-estar no dia-a-dia, influencia e pode condicionar o nosso futuro, pelo que os efeitos da qualidade do ar devem ser encarados como uma questão de saúde pública^[3-5].

Palavras-chave: *qualidade do ar interior; centro de dia; saúde*

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O164

Nursing Interventions in the Prevention of Mechanical Ventilation-Associated Pneumonia in Adult Hospitalized in Intensive Care Units: An Integrative Literature Review

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BACKGROUND: One of the major challenges of health care in the 21st century is Health Care Associated Infections. Ventilation Associated Pneumonia (VAP) is one of the most relevant

elements in this context because of its prevalence and significance in increasing length of hospital stay, health costs as well as morbidity and mortality of patients admitted to Intensive Care Units (ICUs) **OBJECTIVES:** To identify nursing interventions in VAP in the adult hospitalized in the ICU. **METHODS:** Integrative literature review, based on online access of the PubMed and EBSCO databases, on January 2019, defining the time limit from 2014 to 2018 with the descriptors "Nursing Care", "Critical Care", Pneumonia, Ventilator-Associated "and" Prevention & Control ". 50 documents were found and selected 14 after the inclusion and exclusion criteria were applied. **RESULTS:** From the analysis of the selected studies, it was possible to observe that the positive results for decreasing VAP rates result mainly from two intervention axes: the implementation of bundles, in which are included autonomic nursing interventions such as: head-of-bed elevation at 30 - 45°, daily discontinuation of sedation and daily assessment of the possibility of extubation, prophylaxis of peptic ulcer, prophylaxis of deep venous thrombosis, daily oral hygiene care with chlorhexidine, hand hygiene and monitoring of cuff pressure^[1,4]. Reassuring that there's still divergences regarding the best oral decontamination technique, is needed further investigation in the area^[3]. The other interventional axis in relation to this issue is also based on the need for continuous education and training of health professionals, namely nurses, who tend to provide higher quality care associated with greater competence when education and training is a framework implemented in ICUs^[2]. **CONCLUSION:** Ventilation-associated pneumonia in ICUs can be clearly prevented by the implementation of autonomous nursing interventions. That way and according to the existing studies, it can be concluded that the implementation of bundles covering head elevation, oral hygiene care with chlorhexidine, cuff pressure monitoring, interrupting daily sedation and continuous staff education and training produces positive results in reducing the incidence of VAP in Intensive Care Units.

Keywords: *nursing care, critical care, pneumonia ventilator-associated, prevention & control*

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O170

Academic experiences in higher education students: perception of well-being

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BACKGROUND: The transition to higher education involves challenging and demanding changes that can disrupt the well-being of students^[1]. To the set of situations, changes, expectations

and anxieties in higher education, the literature denominates academic experiences^[2]. Studies suggest that more positive academic experiences, greater the satisfaction with life, contributing to more positive level of well-being and mental health^[1] and, consequently, a better adaptation and academic success^[3]. **OBJECTIVES:** This preliminary analysis integrated in an ongoing exploratory study, seeks to characterized the academic experiences of students of the Psychology, Nursing and Physiotherapy courses of Piaget Institute of Viseu. **METHODS:** A pre-test was applied with the Academic Experience Questionnaire – reduced version (QVA-r) [4], an instrument with 60 items that assesses the degree of adaptation of university students to the academic demands in the personal, interpersonal, career, institutional, study dimensions. This is a Likert response scale from 1 (“totally disagreement”) to 5 (“totally agreement”), where the highest value corresponds to a more positive characterization of the dimensions. A total of 44 students participated (12=Psychology; 16=Nursing; 16=Physiotherapy), attending from the first to the last year of the degree, aged between 18 and 30 years. The means comparison test allowed to analyze the differences in the scores obtained in the questionnaire between the three courses. **RESULTS:** The Nursing course presents the lowest average of the academic experience indicator (3.19), compared to Psychology (3.28) and Physiotherapy (3.25). We observed that the values do not differ much between the courses ($p=0.937$), and that present a score above the average score of the scale (3), suggesting an acceptable level of adaptation to higher education. The interpersonal (3.61), career (3.69), institutional (3.5) and study (3.3) dimensions, presented approximate average results among the three courses, with the exception of the personal dimension (2.26), which includes items essentially associated with self and perception of well-being, which obtained an average value below the average scoring level of the scale. **CONCLUSIONS:** The study requires a broader data collection. Faced with the result of perceived well-being of students below the estimated average, it’s important to reflect on intervention proposals. Regarding the application of the questionnaire, it’s extension proved to be a fragility to its completion by the students.

Keywords: *academic experiences, well-being, higher education students*

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O172

Evaluation of Lifestyles, Anthropometric and Lipid Indicators in young university students with and without family support

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BACKGROUND: Admission into adolescence and / or adult life is considered a critical period for changing behaviors that affect, positively or negatively, lifelong health^[1-2]. In addition to contact with psychoactive substances (tobacco, alcohol and other drugs), new practices and attitudes towards food, physical and recreational activity and changes resulting from emotional management and stress, university students are, in the great majority, confronted with the "outside world" associated with greater independence from parents^[3]. According to some authors, young adults integrate / adopt / develop some healthy practices and behaviors or of risky that may have a significant impact on their health in the future. **OBJECTIVES:** The aim of this research was to study the prevalence of health and risk behaviors among young university students, with and without family support, and their relationship with their lipid and anthropometric conditions. **METHODS:** The target population of this study were young adults aged 18-29 (N = 155). Some of the parameters controlled were BMI, HDL-cholesterol, LDL-cholesterol, triglycerides (Trig.), Blood Pressure (BP) and Lifestyle. The statistical method applied was Binary Logistic Regression by the Maximum Likelihood Method^[4]. **RESULTS:** When we tried to evaluate the explained probability of the impact of the family support in the explanation of the anthropometric and biochemical values, these revealed little differentiation (OR_{IMC}: 0.991, CI [0.777-1.265]; OR_{HDL}: 1.001, CI [0.933-1.075]; OR_{LDL}: 0.999; IC [0.969-1.031]; OR_{Trig.}: 0.998; CI [0.972-1.024]; OR_{BP}: 1.621; CI [0.319-8.246]). On the other hand, young adults who did not have family support during their academic lives were also the most sedentary (physical activity) (OR: 2.771; CI [1.288-5.963]) compared to those living with the family. However, were not observed any explanatory effects of the presence / absence of family support in the remaining behaviors (OR_{smoking habits}: 0.688; CI [0.263-1.797]; OR_{Alcoholic habits}: CI: [0.477-2.590]; OR_{Eating habits}: 1.018; CI [0.382-2.716]). **CONCLUSIONS:** The present study allowed us to conclude that, although family support does not have a direct and / or immediate significant impact on the lifestyle of young adults, this is still of major research interest, given the increase in prevalence estimates of students who have moved to outside their area of residence upon entering higher education, as well as increasing the adoption of risk-taking behaviors detrimental to their health^[3-4]. The control of risk factors is the best way to prevent cardiovascular diseases, and most of them coincide with the characteristics analyzed in the present study^[5].

Keywords: *life style, family support, body mass index, triglycerides, cholesterol*

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O182

Applicability of the scientific method of the phenomenology of the practice of oncologic nursing

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BACKGROUND: The phenomenology deals with the practice of a qualitative scientific method, endorsed by van Manen who aims to analyse the phenomenon associated with what is experienced by the person. The hermeneutic phenomenology of van Manen has been particularly influent in the investigation of the experience lived associated in situations of health/disease. This method articulates the phenomenology, hermeneutics, semiotics, using a process of research which incorporates a consideration of what is experienced, that values and improves the understanding of the human experience^[1]. It is a scientific and rigorous method to analyse phenomenological data collected from various sources^[2]. The bibliometry concept is co-substantiated in the use of the statistical and mathematical methods, that is, quantitative methods, from the original items available in the databases^[3,4]. **OBJECTIVE:** This research aims to identify in the scientific literature, the applicability of the scientific method of phenomenology in oncologic nursing practice through a bibliometric research. **METHODS:** As a method a bibliometric review was used, using bibliometric indicators, setting up a quantitative and objective consideration. **RESULTS:** We gathered 19 items to analyse, being that, 73% of the items have as a target population the oncologic patient. In this population the predominant topic is the experiencing of the disease and the specific treatment procedures. The rest of the items are directed at the parents of the oncologic patient and the care giving nurses in this field. The reviews are published in magazines with an average impact factor of 1,337 and with a maximum of 54 registered citations. Based on the observation of the bibliometric map we are able to confirm the association of the terms experience, study and cancer, besides this, these stand out more, which means that these are the terms which had a greater number of citations. The words patient and meaning are

emphasised in a strong correlation. **CONCLUSIONS:** The application of the scientific method of phenomenology of the oncologic nursing practice is important for the understanding of the meaning of the life experience in the process of the oncologic disease, because it allows for the understanding of the needs, emotions, the care which has consequences in the provision of care.

Keywords: *phenomenology of the practice, bibliometric analyses, qualitative research, qualitative research, nursing, oncology nursing.*

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O188

Hours of sleep and childhood obesity in school-aged children: preliminary results of the project “Por Mais Saúde”

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BACKGROUND: Childhood obesity is an important public health problem. In Portugal, 17.3% of children under 10 years old are overweight and 7.7% are obese^[1]. The lack of balance between what is eaten and consumed appears as the main cause of obesity, however, literature supports a complex etiology, admitting other several risk factors such as sleep^[2]. According to National Sleep Foundation (NSF) guidelines, school-aged children (6-12 years) should sleep 9 to 11 hours a day for a healthy physical, emotional and cognitive development ^[3]. Nevertheless, over the last few years it seems to exist a growing trend of decreasing the number of hours of sleep, particularly in this age group^[4,5]. **OBJECTIVE:** Taking these facts into account, this study, integrated in a broader project about children’s health status and promotion named “Por Mais Saúde”, aimed at analyzing the association between sleep duration and the nutritional status of school-age children. **METHODS:** To do that, it was performed a cross-sectional and quantitative analysis, involving 30 schools from the Oporto district of Portugal, from which participated 909 children (51% male and 49% female) with a mean age of 9.15 years old. Through a self-reported questionnaire, were recorded several variables, such as age, gender and number of hours of sleep. Height was measured using a portable stadiometer (Seca®) and weight and body composition were measured through a Tanita Segmental Body Composition BC- 601®. **RESULTS:** Z-score values of Body Mass Index (BMI) show that 24% of the children were overweight and 15.9%

were obese. Moreover, the mean of daily sleep duration was 9.68 hours and the mean of the BMI z-score was 0.78, with a statistically significant ($p < 0.01$) low negative correlation ($r = -0.15$) between sleep duration and the BMI z-score. Data was additionally analyzed according to the gender and the same pattern was observed. Therefore, results suggest a negative association between sleep duration and overweight / obesity, which may be related to the inversely proportional need between food intake and hours of sleep which agree with literature, that presents sleep duration as a risk factor. **CONCLUSIONS:** Our results reinforce the idea that childhood obesity prevention needs an integral approach that includes a sleep evaluation and the development of interventions that promote sleep quantity. Moreover, studies should also address to analyze sleep quality, which might also be an important issue to include in intervention strategies.

Keywords: children, sleep, overweight, obesity, school-aged.

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O191

Psychoactive substance consumption by Portuguese population

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BACKGROUND: Ever since man has sought in nature certain substances as a form of relief or cure of physical suffering, disinhibition or invigoration of energies^[1,2]. Psychoactive substances, licit or illicit, are likely to change the state of consciousness and behavior^[1]. The consumption of psychoactive substances is increasingly evident in our society for different reasons^[1,3,4], generating a great social concern both in Portugal^[3,4] and on a global scale^[1]. **OBJECTIVE:** To investigate the prevalence of psychoactive substances consumption in the Portuguese population throughout the life and in the last 3 months, to know the main reasons for the consumption and to analyze the correlations between the consumption and age and gender. **METHODS:** This correlational and cross-sectional study was based on an online questionnaire, that includes the ASSIST instrument^[5], applied to Portuguese population. It was used descriptive statistics, the qui-square test for nominal variables and

the Wilcoxon-Mann-Whitney and the Kruskal-Wallis tests to compare ordinal scale variables, with a significance level of 5%. **RESULTS:** From 385 participants, 65% were female, with an average age of 25 years old (minimum: 18-maximum: 67; SD=9.90). Concerning the prevalence of psychoactive substances lifetime consumption, it was found that alcohol was the most consumed (86%), followed by xanthines (79%) and tobacco (60%). In the last 3 months, xanthines (49%) were the substances most consumed daily, followed by tobacco (22%), alcohol (9%), anxiolytics (3%) and cannabis (2%). Socializing was the main reason for consumption of alcohol (67%), tobacco (36%) and cannabis (34%). Anxiolytics have been used mostly to sleep (50%) and xanthines to increase cognitive capacity (35%). Tobacco ($p=0.016$), alcohol ($p=0.03$) and illicit substances ($p<0.001$) were more consumed by men throughout their lives, while anxiolytics were mostly consumed by women ($p=0.027$). Alcohol ($p=0.008$), cannabis ($p=0.027$), and xanthines ($p=0.009$) were mostly consumed by young adults aged between 22 and 24 years. **CONCLUSIONS:** The results of this study reveal sporadic and recreational use of illicit substances, and the regular use of alcohol, tobacco and especially xanthines, mostly by young adults and men, while anxiolytics are preferred by women. Socializing was identified the main reason for the use of the most consumed substances.

Keywords: ASSIST; Psychoactive Substances; Psychoactive Substances Consumption

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Flourishing in Old Age

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BACKGROUND: Flourishing implies an optimal state of mental health, in which the individual feels and functions positively^[1,2]. Thus, flourishers enjoy good mental and physical health and resilience in life's vulnerabilities and changes^[3] and report higher levels of satisfaction with life, involvement, meaning, healthier relationships, and longevity^[4]. Several authors use the concept of

flourishing as a comprehensive term synonymous with Well-being. It encompasses not only emotional well-being but also psychological and social Well-being and allows integration of hedonic and eudaimonic theories of Well-Being^[5]. **OBJECTIVES:** This study approximates factors contributing to flourishing among the elderly through their perception of mental health, satisfaction with life, positive and negative affects, meaning in life, optimism or pessimism, positive and negative emotions, and mindfulness attention. **METHODS:** To this end, we conducted a non-experimental correlational study with 329 participants, aged from 55 to 98 years. Questionnaires were used to collect data through the following instruments: socio-demographic questionnaire, Mindful Attention Awareness Scale (MAAS - Brown and Ryan, 2003), Satisfaction with life Scale (SWLS - Diener, Emmons, Larsen and Griffin, 1985), Positive and Negative Affect Scale (PANAS - Watson, Clark, & Tellegen, 1988), Flourishing scale (FS - Diener et al. 2010), Positivity test (PST - Fredrickson, 2009), Mental Health Inventory – 5 (MHI-5 - (Berwick, et al., Performance of a Five-Item Mental Health Screening Test, 1991), Meaning Life Questionnaire (MLQ - Steger, Frazier, Oishi, and Kaler, 2006) Extended Life Oriented Test (ELOT - Chang, Maydeu-Olivares, and D'Zurilla, 1997). **RESULTS:** Results showed the Flourishing Scale presents a positive relation with the predictive variables - SWLS (B = 0,122, $p=0.001$), PANAS: PA (B = 0.397, $p<0.001$), MLQ - search (B = 0.133, $p=0.001$), MLQ - presence (B = 0.204, $p<0.001$) and ELOT - optimism (B = 0.130, $p=0.046$) - statistically significant. **CONCLUSIONS:** The positive associations revealed in this work are a starting point for intervention and encouragement of flourishing in old age. The existing literature informs us that flourishing is within the reach of all. It can be accomplished by cultivating positive emotions, discovering meaning and purpose while staying genuinely engaged in daily activities and pursuing positive relationships with our communities. We can conclude that the meaning of life, mindfulness attention, positive emotions and optimism are important factors for the flourishing and good predictors for ageing well.

Keywords: Ageing, Flourishing, Well-Being

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Active aging: 85 +

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BACKGROUND: Average life expectancy and aging rate have registered annual increases. Currently, about 20% of the portuguese population is elderly and it is estimated that in 2080 this number almost duplicates (Nunes, 2017)^[1]. A recent study from the National Institute of Statistics (2018)^[2] shows that almost half of the portuguese population will be over 65 in the next 60 years. The World Health Organization (WHO) has classified Portugal as the *bottom-down* Europe country, in what concerns to elderly treatment. **OBJECTIVE:** The purpose of this 24-month duration project is to make a diagnosis of the elderly health situation in Viseu county of the influence area of the Viseu Community Care Unit, aged 85 or over, and to develop a community intervention plan focused on the identified problems, in order to improve the life quality of the population group and promote active aging. **METHODS:** Data collection (Phase 1 – January to October 2019) along with the target population through a survey, which includes socio-demographic factors and evaluation of the Basic and Instrumental Activities of Daily Living (Katz Index and Barthel Scale); the life quality (Flanagan Life Quality Scale); the risk of falling (Morse Scale) and the confusion (NECHAM Confusion Scale, translated and tested in the portuguese population). **RESULTS:** Statistical analysis to identify real and/or potential problems of the studied population and results discussion (Phase 2 – November to December 2019). Community Intervention Plan design and dissemination to the community partners (Phase 3 – January to May 2020) and implementation (Phase 4 – May to November 2020) in articulation with the social network, health units and families, based on the National Strategy for the Active and Healthy Aging 2017 – 2025 from the Health General Direction^[3], which contributes to elderly well-being, autonomy and independence; as well as increasing levels of education and literacy for the health of the user, family and formal/informal caregivers; promote self-care and improve the elderly life quality. **CONCLUSIONS:** According to WHO^[2] and in the aging context, the term “active” refers to the “continuing participation in social, economic, cultural, spiritual and civic life” going “much beyond the possibility of being physically and professionally active”. In this sense, the Care Unit team in the Viseu Community, attentive to the needs and having knowledge in the gerontological/geriatric care area, becomes fundamental in the promotion of this group health and well-being. The strategies to be implemented are based on the primary prevention through the risk factors reduction; on secondary prevention through early diagnosis and appropriate treatment; in tertiary prevention, reducing the complications impact, and in quaternary prevention, minimizing unnecessary medical intervention.

Keywords: Aging; Health; Autonomy; Intervention

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O199

Resilience, Happiness and Functionality in a group of institutionalized elderly people: Psychomotricity as an answer

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BACKGROUND: Aging is a natural, inevitable, progressive and global phenomenon^[1-3], characterized by a physiological functional decline^[1], biopsychosocial changes and daily challenges that affect the individual's adaptation to this new phase of life^[1,2]. Thus, it is important that the elderly adapt to adversities and overcome them^[3] in order to have a happy life^[2], fulfilled by frequent positive affective states^[4]. **OBJECTIVE:** This study aims to evaluate resilience, happiness and functionality in a group of institutionalized elderly people, as well as present Psychomotricity as a proposal of intervention promoting of these factors. **METHODS:** The sample consisted in 61 elderly people (14 males and 47 females), aged between 65 and 99 years (\bar{x} = 80,80, \pm SD = 7,95), living in Estabelecimento Bela Vista on Madeira Island. 57,4% of the elderly are widowed, 26,2% are single, 8,2% are married and 8,2% are divorced. 60,7% of the elderly are literate (37,7% have the 4th grade) and 39,3% are illiterate. It was used the Mini-mental State Examination (MMSE), Barthel Index and Geronto-Psychomotor Exam (EGP) for evaluation of cognitive and psychomotor functionality, as well as the Resilience Scale (RS) and Subjective Happiness Scale (SHS) for the evaluation of these psycho-emotional constructs. **RESULTS:** The sample exhibits an average resilience (\bar{x} = 106,26, \pm SD = 10,07), mean levels of happiness (\bar{x} = 17,67, \pm SD = 2,29) and, in functional terms, are "slightly dependent" (\bar{x} = 62,05, \pm SD = 16,94). 100% of the elderly had present a psychomotor profile below the reference average for the portuguese population according to their age group. We propose a 6-month bi-weekly program of psychomotor intervention both in a group (60 min/session) and in individual sessions (45 min/session), designed to respond to the psychomotor profile of the sample and to enhance functional skills and psycho-emotional. **CONCLUSIONS:** The program has a preventive and rehabilitative/ therapeutic design to maintain/revert the functional capacity and the feeling of self and other, through the psychomotor stimulation centered in self-knowledge, in the effectiveness/harmony of the intentional gesture adjusted to the action and in the development of individual coping strategies. It uses corporal mediation and the use of expressive therapy techniques, reeducation gnostic-praxis, cognitive stimulation, behavioral and socio-emotional adequacy and functional training. Positive emotions are worked using playful dynamics, the stimulation of conscious decision-making in the face of challenges and self-feedback based on the perception of competence.

Keywords: aging, resilience, happiness, functionality and psychomotricity.

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O200

Psychomotor Rehabilitation Program: Innovation and levels of adherence of a group of institutionalized elderly people

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BACKGROUND: Aging is a dynamic, progressive and irreversible process, characterized by a set of neurological changes with cognitive^[1,2] and psychomotor consequences^[3,4]. **OBJECTIVE:** The study aimed to evaluate the adherence of a group of elderly people to the Psychomotor Rehabilitation Program (PPMR)^[5] and the evolution after three months of individual intervention. **METHODS:** The PPMR focuses on the compromised areas of the psychomotor profile and cognitive function and proposes a combined intervention model of Psychomotricity and cognitive training mediated by the COGWEB® system. The sample consisted of 19 elderly residents of the Senior Residence of Hospital Terra Quente (\bar{x} = 86.3; \pm SD = 6.15 years of age), 9 females (47.4 %) and 10 males (52.6 %). Of which, 2 are illiterate (10.5%), 14 have the 4th grade (73.7%) and 3 have higher education than the 4th grade (15.8%). 42.1 % of the elderly are married (n=8) and 57.9 % are widowed (n=11). Half of the elderly (47.4%; n=9) have dementia and moderately severe disability. Patients whose diagnosis was possible were quantitatively assessed by the Geronto-Psychomotor Examination (PGE), the Mini-Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA) and the modified Rankin Scale, to assess the psychomotor profile, the presence of cognitive defect and functionality, respectively. **RESULTS:** 15.8% (n=3) performed qualitative evaluation due to neurological and psychomotor impairment. 69.2% (n=9) of the patients with dementia had cognitive impairment. 15 (93.8 %) had a psychomotor profile below the average reference for their age group and 1 patient (6.3%) had a psychomotor profile above average. 81.3% of the participants had cognitive defect when evaluated by the MMSE and 100% of the literate ones had cognitive defect when evaluated by the MoCA. In the initial evaluation, no significant differences in PGE and MoCA were observed among patients with different neurological diagnoses, being the differences statistically significant for the MMSE ($t=14.972$; $p=0.024$). After three months, 17 patients (89.5%) remained in the PPMR (1 death and 1 withdrawal). Of these,

82.4% (n=14) perform combined intervention (Psychomotricity + COGWEB®) and 17.6% (n=3) perform Psychomotricity. After the short-term intervention, there were significant improvements in the psychomotor profile ($p=0.003$) and in the cognitive profile assessed by the MoCA ($p=0.033$). **CONCLUSIONS:** Qualitatively, there were clear improvements in global praxis, socialization and emotional expression/affectivity, decreased emotional lability and increased sensory response. Despite the small sample, the levels of adherence to PPMR are good indicators of a response to innovation and the evolution results, although still discrete, are positive.

Keywords: *elderly, psychomotricity, cognitive training, combined intervention and adherence.*

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O204

Ansiedade e depressão geriátricas e seus fatores associados: um estudo comunitário em Vila Nova de Gaia

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INTRODUÇÃO: Os fatores psicossociais e de saúde relacionados com a presença de distress emocional, designadamente a depressão e a ansiedade, na população idosa são uma importante preocupação na atualidade. A depressão associa alterações do humor com alterações cognitivas, comportamentais, psicomotoras e vegetativas, podendo tornar-se um problema crónico ou recorrente, sobretudo em idosos com saúde física comprometida^[1]. As perturbações de ansiedade associam sintomas físicos e psicológicos, e pelo impacto significativo que provocam no funcionamento geral das pessoas, têm um impacto igualmente significativo na sua qualidade de vida^[2]. De acordo com o Retrato de Saúde, as perturbações depressiva e ansiosa afiguram-se como um dos problemas de saúde que mais afeta a população Portuguesa, encontrando-se entre as principais doenças causadoras de morbilidade^[3]. **OBJETIVOS:** Este estudo tem como objetivo avaliar a presença de sintomatologia depressiva e ansiosa numa população idosa residente na comunidade e determinar que fatores sociais, sociodemográficos e de saúde lhe estão relacionados. **MÉTODOS:** Trata-se de um estudo quantitativo e transversal, com recurso à aplicação de questionários a uma amostra representativa de 987 idosos do concelho de Vila Nova de Gaia, a viver na comunidade. Foram utilizados, na recolha de dados, um questionário sociodemográfico e a versão abreviada das Escala de Depressão Geriátrica (GDS-4), do Inventário de Ansiedade Geriátrica (GAI-SF) e da Escala de Solidão da UCLA (UCLA-6). Recorreu-se à análise descritiva dos dados e a análises de regressão logística. **RESULTADOS:** Os resultados demonstram-

nos que 32.8% da amostra apresenta sintomatologia depressiva e 59.4% apresenta sintomatologia ansiosa; sugerem que os idosos que avaliam negativamente a sua saúde, que apresentam dificuldades visuais e de mobilidade, que vivem isolados, que são contactados com menor frequência por filhos e netos, que não têm um confidente e que apresentam valores de solidão superiores à média, têm uma maior probabilidade de desenvolver sintomatologia depressiva. Por sua vez, os idosos que têm maior chance de apresentar sintomatologia ansiosa são mulheres, de grupos etários mais novos, com avaliação negativa da sua saúde e com solidão. **CONCLUSÕES:** Este estudo demonstra a importância de considerar as dimensões estudadas no diagnóstico de distress emocional, uma vez que identifica fatores de risco distintos para o desenvolvimento de sintomatologia depressiva e ansiosa. Atuar preventivamente sobre as situações de isolamento social e solidão, assim como apoiar nas dificuldades físicas poderá ser decisivo para promover níveis positivos de bem-estar.

Palavras-chave: *depressão, ansiedade, idosos*

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O211

The influence of seasonality on the propagation of infrasound and low frequency noise originated by wind turbines - Case study

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BACKGROUND: In recent years there has been a rapid growth of installed wind power in Portugal. This, combined with technological development, has led to an exponential growth of wind turbines and their implementation^[1]. One of the main concerns regarding the installation of wind farms is the presence of infrasound and the negative impacts they have on health, namely Vibroacoustic Disease (systemic pathology caused by excessive exposure to infrasound being characterized by the existence of damage caused directly in the tissues or organs) and Wind Turbine Syndrome (symptoms related to the organs of the vestibular system, which manifest as sleep disturbances, headaches, ringing in the ear and other symptoms)^[2,3,4]. **OBJECTIVE:** In this sense and due to the desire to understand the reality of the population exposed to noise from wind farms, this study aimed to analyze and characterize the Infrasound and Low Frequency Noise and Environmental Noise produced by

wind turbines, as well as to understand which variables influences the propagation of noise and whether there were variations in propagation taking into account seasonality. **METHODS:** The study was carried out at the Wind Farm of Cela, in Alcobaça, Portugal. The investigation assumed a prospective component with the objective of verifying that environmental variables such as air velocity, temperature and relative humidity could influence the sound pressure level of infrasound at the site. The procedure for data collection was developed in two periods: summer and winter. A sample of 59 measurement points was defined and data were collected using the CESVA SC420 Sound Level Meter. **RESULTS:** Taking into account the results obtained, it was verified that the sound pressure levels increase as the air velocity increases, just as they are higher in summer. These results can be reasoned due to the influence of the environmental variables previously mentioned that also acquired superior values in the same station. **CONCLUSIONS:** It was possible to conclude that noise levels are influenced by air velocity and season. Due to the growing expansion of wind farms, a significant attention to this theme should be expected from public entities with responsibilities in the field of planning and planning, and it is nowadays still a very small area of the planning instruments in force (municipal plans and special territorial plans) in order to safeguard both the environmental impacts and the impacts on the exposed population health^[1].

Keywords: *Wind turbines; Infrasound; Low Frequency Noise*

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O214

Impact of thiazide diuretics on glycemic control - Evidence-based review

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BACKGROUND: Hypertension is a frequent comorbidity in the diabetic population. Thiazide (TZ) diuretics are one of the pharmacological classes mostly used in the treatment of hypertension. Thus, it is important to understand their impact on glycemic control. **OBJECTIVE:** The objective of this study is to review the current clinical evidence regarding this topic. **METHODS:** Search for systematic reviews (SR), meta-analyses (MA) and randomized clinical trials (RCT), published in the last 5 years, that include “thiazide” and “diabetes mellitus” as MeSH terms. Selected databases: Medline, Cochrane, NHS evidence and BMJ. The articles were further selected based on their title and/or abstract. The recommendation strength was evaluated according to the SORT scale (American Family Physician). P.I.C.O. was defined as follows: Population - hypertensive, with or without diabetes, under treatment with TZ diuretics; Intervention - antihypertensive treatment with TZ diuretic; Control - No

antihypertensive treatment with TZ diuretic; Outcomes - Glycemic control, new diagnosis of diabetes. **RESULTS:** Our initial search resulted in the selection of 136 articles, of which six were included in this review (3 meta-analyses and 3 randomized clinical trials). Meta-analyses suggest that the use of hydrochlorothiazide (HTZ) is associated with poor glycemic control, with fewer changes concerning fasting blood glucose occurring in patients receiving lower TZ doses^[1,2]. Randomized clinical trials suggest that: (i) association of TZs with angiotensin II receptor antagonists, or calcium channel blockers, does not result in metabolic changes^[3]; (ii) the use of TZ diuretics is not associated with higher de novo diagnoses of diabetes^[4]; (iii) and, finally, that the combination of amiloride with HTZ might improve metabolic control versus the use of HTZ alone^[5]. **CONCLUSIONS:** The current clinical evidence suggests that TZ diuretics may interfere with glycemic control in diabetic patients - however, lower doses seem to induce weaker, non-deleterious, changes in glucose levels (FR C). We conclude that there is insufficient evidence to contraindicate the use of TZ diuretics in diabetic patients (FR C).

Keywords: *thiazide diuretics; diabetes mellitus*

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O218

Does metformin reduce the risk of dementia? Evidence-based review

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BACKGROUND: Studies have shown a link between type 2 diabetes, mild cognitive impairment and dementia, with an apparent increase of insulin resistance in patients with dementia. However, it remains unclear whether insulin sensitizers drugs, such as metformin, influence the risk of dementia. **OBJECTIVE:** To determine what evidence there is regarding the relationship between metformin and dementia. **METHODS:** Search for systematic reviews (SR), meta-analyses (MA) and randomized clinical trials (RCT), published in the last 10 years, that included “metformin” and “dementia” as MeSH terms. Selected databases:

Medline, Cochrane, NHS evidence and BMJ. The articles were further selected based on their title and/or abstract. The recommendation strength was evaluated according to the SORT scale (American Family Physician). P.I.C.O. was defined as follows: Population – type 2 diabetic patients; Intervention - diabetic treatment with metformin; Control - No diabetic treatment with metformin; Outcomes – cognitive impairment, dementia. Results: 57 articles were pre-selected and 3 of these were analyzed: 2 MAs and 1 RCTs. The MAs revealed an association between metformin and the incidence of dementia – metformin reduces the incidence of dementia in diabetic patients but not in non-diabetic patients^[1,2]. However, its use didn't affect Mini-mental State Examination (MMSE) score^[1]. **RESULTS:** Results from the RCT selected suggest that metformin reduces the risk of dementia in patients with type 2 diabetes and that there is a synergistic effect between metformin and sulfonylurea in decreasing the risk of dementia^[3]. **CONCLUSION:** The results suggest that the use of metformin might be useful in reducing the risk of dementia in type 2 diabetes patients (SORT C). Since there was no effect on MMSE score, metformin appears to act in prevention rather than as a nootropic drug. Further studies, with larger samples, are required to consolidate this finding and to clarify if the effect of metformin on dementia is independent of glycemic control.

Keywords: *metformin; dementia.*

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O226

Development of a Pedal Force Measurement Interface for Rehabilitation Purposes

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BACKGROUND: Indoor cycling has become common for the lower limb's musculoskeletal lesions rehabilitation and recent studies have shown that the use of the bicycle for rehabilitation purposes can be beneficial in several diseases^[1]. During the bicycle rehabilitation exercises, the patient stimulates the muscular component, in particular the lower limbs, resulting in a benefit in its rehabilitation process. Usually, the patients with a musculoskeletal condition have the tendency to protect the injured limb, and those with a neurologic disease, e.g. a stroke, cannot perform the motor control of the limbs of one side of the body (i.e. with a hemiplegia) making more effort with the healthy part, resulting in different loads applied in each pedal. An indicator of the follow-up rehabilitation process can be the evaluation of the asymmetry between the forces applied in the pedals^[2, 3]. Thus, it is relevant to develop methodologies that allow the identification of the forces that a patient develops when

performing cycling exercises. **OBJECTIVE:** This work presents an instrumented pedal, which can be easily installed in any bicycle, allowing the identification of the vertical force applied, the most significant force component^[4]. **METHODS:** The system incorporates a loadcell (Vetek 202WA), with an interface for a mountain bike clipping system in one of the sides and a mechanical component on the other side, enabling the foot support, in a direct way or with the use of clipping shoes, to a better fixation and correct positioning of the foot. The loadcell is connected to a National Instruments board (NI9219) and a developed graphical user interface (GUI) allows the real time force visualization and registration. The GUI can be easily manipulated in order to define real-time steps and borders for the force, allowing some biofeedback for the patient. The data can be exported and analysed, allowing the follow up evaluation of the patient. The system has been tested with three healthy volunteers, pedalling during four minutes, first in normal conditions and after with a simulated defence reaction in one foot, induced by a strange object inside the shoe. **RESULTS:** In the first case, the difference in the mean force for the two feet was 1.98%. In the second case, the difference takes an amount to 9.33%, showing that the system corresponds to the objectives. **CONCLUSION:** The next step of research will be implemented in volunteers with post-stroke and musculoskeletal conditions, e.g. knee and hip osteoarthritis.

Keywords: *Post-Stroke Rehabilitation, Instrumented Pedals, Real time biofeedback*

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O230

Symptom perception management education improves self-care in patients with heart failure

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BACKGROUND: Patients with heart failure (HF) have difficulty in recognizing signs and symptoms of the disease, which delay seeking for help and therefore interfere with patient's engagement and self-care management. Early detection of these symptoms could avoid hospitalizations and the associated health costs. Self-care is a naturalistic decision-making process where a person seeks to keep his/her health as stable as possible, by maintaining and managing self-care behaviors^[1]. To improve self-care behaviors and avoid hospitalizations, patients with HF should routinely monitor themselves for signs and symptoms and recognize when to contact healthcare professionals. **OBJECTIVES:** The purpose of this study was to design a

complex intervention, through a literature systematic review and a qualitative study. **METHODS:** The Medical Research Council complex intervention was used^[2]. We combined a systematic literature review on education, symptom recognition, and self-care management in HF patients (PROSPERO: registration number CDD42018081708) with semi structured interviews to cardiology physicians, nurses expert in chronic disease management, and HF patients admitted into a cardiology ward in a university hospital^[3], to design a complex intervention. **RESULTS:** The systematic literature review showed 582 studies published between 2005 and 2014, of which 17 were eligible to be fully analyzed. Only four were included in the final review. These suggested that patient education focused on symptom recognition, combined with reinforcements, led to better self-care behaviors. Meanwhile, content analysis of semi structured interviews revealed three themes: health management (related to patients knowledge about signs and symptoms of heart failure); behavior management (general lack of knowledge of the signs and symptoms of the disease); and support received (importance of regular clinic visits). **CONCLUSIONS:** Combining the findings of the systematic literature review and the themes emerged from the semi structured interviews, we proposed the development of a complex intervention on symptom perception and fluid management, to be implemented on a university hospital.

Keywords: Heart failure, self-care, symptom perception, complex intervention.

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O247

Association between nutrition knowledge and weight status in adolescents

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BACKGROUND: A broader knowledge about healthy eating can have positive repercussions on adolescent nutrition, improving nutritional status and preventing future diseases^[1]. **OBJECTIVE:** The objective of this study was to compare nutritional knowledge according to weight status in adolescents. **METHODS:** Data of this cross-sectional study comes from the "Ver para Querer" project, conducted in 2017 with 446 adolescents in the 2nd and 3rd cycle of secondary education (52% girls, 11.9 ± 1.54 years). Weight and height were assessed according to standard procedures and appropriate instruments^[2]. Weight status was classified according to body mass index World Health Organization criteria in normal weight, overweight and

obese^[3]. Nutritional knowledge was assessed through the Nutrition Questionnaire (adapted from General Nutritional Knowledge Questionnaire)^[4], consisting of 4 sections that translate specific knowledge: dietary recommendations, nutrient content of food, healthier food choices and diet-disease relationship. The total score of the questionnaire corresponds to the sum of the scores of the 4 sections, and higher scores translate better nutritional knowledge (range between 0 and 100). ANCOVA was used to compare nutritional knowledge by weight status, adjusted for confounding variables (degree of student's education, socioeconomic status and age). **RESULTS:** The results showed that 23.3% of the adolescents were classified as overweight (23.9% girls and 21.7% boys) and 8.3% as obese (7.9% girls and 9.3% boys). It was found that overweight boys compared to normal weight boys had higher knowledge in the diet-disease relation section (39.6 ± 2.9 vs. 29.6 ± 1.7, respectively, $p= 0.003$). No statistically significant differences were observed in the other sections, in the total score for girls (all weight status categories) and obese boy's adolescents. **CONCLUSION:** With this study we conclude that there were no significant differences in nutritional knowledge according to weight status, except in overweight boys who presented higher knowledge in health/disease issues regarding diet. Well-designed education programs addressed to teenagers are needed.

Keywords: adolescents; nutrition knowledge; obesity; public health intervention.

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O248

Biomechanical Device for Strength Control in Dental Restorations Procedures

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BACKGROUND: In dentistry, rehabilitation of a damaged tooth using indirect restorations is one of the most common procedures. Depending on the technique used, a force is applied when inserting the restoration in the tooth. This step becomes crucial, as sufficient force should be applied to cause the cement to flow out of the tooth^[1]. However, the applied force is dependent on the sensitivity of the dentist and there are no tools that guarantee the aid in its monitoring. An indirect restoration's main advantages are polymerization contraction control, a greater rigidity of the material and a better anatomy with respect to the occlusal and interproximal side of the tooth. These may be composite or ceramic restorations^[2]. The applied force must be such that it causes the cementing material to flow out of the restoration, ensuring its proper seating and therefore improving the prognosis and longevity of the restoration-tooth assembly. Fracture of the restorations is common when excessive force is applied^[3].

OBJECTIVE: This work describes a new biomechanical device that allows the force applied in the tooth restoration procedure to be monitored. **METHODS:** The device is divided into three main components: An active, disposable or reusable tip that will interact with the tooth; An anchoring body of the tip, with the end instrumented, in order to identify its structural behavior (mechanical deformation) when the force is applied; A handle for support and interface with the user, and also for embedding the electronic system. By the calibration of the device, the deformation is transformed into force. A built-in embedded electronic system allows a wireless communication with a smartphone, tablet or computer graphical interface. A prototype was produced by lathing, instrumented with strain gauges and calibrated, allowing to convert the measured deformation into force. **RESULTS:** The device was tested performing a simulated facet application on a volunteer tooth, with a good result and feedback from the dentist, showing that is possible to easily apply a controlled force over a time period. **CONCLUSION:** The biomechanical device represents a simple way for the Dentist to adapt his clinical practice to what the literature refers as the most correct and effective procedures in cementing dental restorations and can also be used as a tool in the learning context of dental students and by experienced dentists who have never had the opportunity to analyze or calibrate the force performed in this type of procedure.

Keywords: *Orofacial Biomechanics, Dental Restoration, Adhesive Cementation*

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O251

Psychopathological symptomatology and cancer: a comparative study

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BACKGROUND: The diagnosis of cancer often leads to intense fear: of death, of treatments and of recurrence of the disease^[1]. In this context, several authors point out the existence of high rates of psychopathological symptomatology in cancer patients^[2,3]. **OBJECTIVES:** The objective of this study is to compare a sample of cancer patients with a non-cancer sample, regarding the psychopathological symptomatology. **METHODS:** The convenience sample - 91 subjects with solid tumors of the digestive tract, with metastatic or locally advanced disease, diagnosed in over 6 months - was evaluated by Brief Symptoms Inventory – BSI^[4]. The sample of cancer patients was compared to a general population sample (n = 404) - evaluated by Canavarro^[4] - regarding the General Symptom Index (IGS), Total Positive Symptoms (TSP) and the Index of Positive Symptoms (ISP). **RESULTS:** When compared to the general population sample, the sample of cancer patients presents, for a confidence interval of 97.5% adjusted by the Bonferroni's correction, a

superior ISP ($t(90) = 5,182, \alpha < .001$), but lower IGS ($t(90) = -2.514, \alpha = .014$) and TSP ($t(90) = -5.019, \alpha < .001$). **CONCLUSIONS:** Contrary to what would be expected, when compared with the general population sample, the sample of oncological patients presents, except for ISP, lower rates of psychopathology. These results may be due, partly, to the fact that all subjects included in the sample had been diagnosed more than 6 months ago, after which the manifestation of reactive symptomatology may be less intense. In this context, it might be interesting, in future studies, to investigate whether the low rates of psychopathological symptoms found in the sample of cancer patients may also be associated with a predominance of C-type personality characteristics in these patients (with inhibitory effects on the manifestation of psychopathological symptoms).

Keywords: *cancer, psychopathology, BSI*

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O257

Birth plan: perceptions of citizens and health professionals

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BACKGROUND: The birth plan (BP) is a written document elaborated by the couple in order to express their wishes regarding their labor/birth. Since 1990, studies have shown that BP facilitates the fulfillment of the expectations, satisfaction, efficacy and empowerment of women/couples, as well as to improve the communication with health professionals (HP)^[1,2,3]. In Portugal there is a lack of studies in this area^[4]. **OBJECTIVE:** To know the perceptions of the HP and the citizens related to the difficulties of elaboration and implementation of the BP. **METHODS:** Qualitative, exploratory and descriptive study. Two questionnaires were used, one addressed to HP and another to citizens, containing 20 mixed questions of self-filling and available on an online platform between April and May 2018. For the statistical treatment, was used tool SPSS25; for the analysis of the open questions was conducted an analysis of content and was used the program INVivo12. A non-probabilistic, intentional sample was carried out with health professionals (n=188, 93.1% female, $x=44.2$ years, mostly work on differentiated care and 41.1% have helped draw up a BP) and citizens (n=353, female=97.8%, $x=32.7$ years, 36.5% of which living in the North and 31.7% in Lisbon and Vale do Tejo, 36.5% have a child and 62.6% didn't use BP). Confidentiality and anonymity data were guaranteed. **RESULTS:** 26.6% of the citizens used BP, of which 39.4% reported, among others, the following difficulties to elaborate: lack of information, ignorance of the options available, be afraid to write something that would undermine them. Regarding HP, of the 44.1% who have helped devise a BP 71.1%

reported mainly the following difficulties: ignorance or lack of information for women/couple and the physical, human and bureaucratic constraints of the institutions that limit choices. Regarding the citizens (18.1%) who used the BP, they indicated that wasn't accepted by the health team justifying that the HP rejected it, devalued it, disrespected it or ignored it. Of the HP who helped to elaborate the BP, 63.9% stated that it is not accepted in the institutions because: HP want routine practices, do not involve the woman/couple in decisions, institutions have strict protocols, predominating the medicalization, and they don't have the conditions to satisfy the woman's/couple's choices. **CONCLUSIONS:** These results reveal that there seems to be some similarities between the perception of citizens and HP, about the type of difficulties in the elaboration of BP. However, HP seem to have a more negative perception that the citizens about its implementation.

Keywords: *birth plan, health professionals, citizens, decisions*

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O258

Sexual and reproductive health: what we really know Maria Bernardete Machado¹, Marília Lima², Carlos Albuquerque³, Sofia Rosas de Araújo⁴, Maria Isabel Martins⁵, Jorge Campos⁶

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BACKGROUND: In the last decades sexual and reproductive health has been considered a human right. It is vital to provide adequate information about the different contraceptive methods in order to allow women to participate actively in their choice^[1-4]. **OBJECTIVES:** Analyze women's knowledge towards various aspects of sexual health and contraception and correlate it with sociodemographic variables. **METHODS:** Observational, descriptive, cross-sectional and analytical study, obtained through the application of a questionnaire. Population: women between the ages of 18 and 40, followed in Family Planning consultation in a Family Health Unit (N=972). Sample size was calculated through the Epi InfoTM7.2 program: 275 women. Sample of convenience: women consulted between 10/10/2018 and 01/31/2019. Variables: sociodemographic, knowledge about

the fertile period, contraceptive methods, preventive care and sexual transmitted diseases (STDs). Statistical treatment was carried out on SPSS22.0® using statistical tests suitable to the variables in study (Pearson and ANOVA coefficient). **RESULTS:** 276 surveys, average age of 30,5 years, 69,1% with higher education, 45,4% grew up in rural areas, 50,5% single and in 50,5% cases the doctor/nurse are the main information source. A correlation between age and degree of knowledge was not verified ($r_2 = 0,035$), nor differences in correct answers among women regardless of where they grew up ($p=0,314$), schooling degrees ($p=0,974$), marital status ($p=0,176$) or source of information ($p=0,836$). Between 1/2 and 2/3 recognize the woman's fertile period. Most are clear about the contraceptive mechanism of the pill, but are unaware of their drug interactions, non-contraceptive benefits and how to proceed after forgetting a take. Half shows knowledge about the female condom, up to 1/3 is clarified about the intra uterine device, vaginal ring and subcutaneous hormonal implant. About half is informed about emergency contraception. As to STDs the majority is well aware of the symptoms, treatment and prevention forms but believes in fallacies about potential transmission ways. About prevention, more than 2/3 acknowledges the vaccine against the Human Papilloma Virus to be important in the cervix cancer prevention, but state that cytology allows to diagnose STDs. **CONCLUSION:** Even in high graduated patients sexual and reproductive health literacy is moderately low. Many myths and questions are still alive, despite the effort of the medical staff to enlighten the patients. This study shows the need for health professionals to define new strategies in order to transmit information more effectively allowing patients to live their sexuality in a healthy, responsible and informed way.

Keywords: Reproductive and sexual health, health literacy

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O260

Is it possible to assess more pinches?

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BACKGROUND: The pinch strength and its function assessment is fundamental in the rehabilitation process on hand dysfunctions. The evaluation of pinch strength is a global measure of the capacity to grab a small object^[1]. The current standardized assessment of the pinch considers three configurations: the tip to tip, the key and the tripod. The relation of this assessment and the difficulties in performing the Activities of Daily Life (ADL), that uses these pinch's is inexistent^[2]. The

pinch configurations were recently classified in a new taxonomy sponsored by the European Commission^[3]. They were organized regarding their previous classifications, in other taxonomies, their number of strength vectors, type of contact with the fingers, strength and thumb position^[3]. **OBJECTIVES:** The main objective of this work is to verify if it's possible to assess the pinch strength of the configurations, of this taxonomy, on the Biometrics E-Link[®] Pinchmeter. **METHODS:** This experimental study analyzed the pinch configurations compatible with the using of the Pinchmeter, and establish a specific evaluation protocol, maintaining the American Society of Hand Therapists protocol assessment. We used a caliper to measure the diameter of the Pinchmeter. We cross the results with the characteristics of the pinches, regarding the diameter, and there were identified five configurations, that can be applied in the Pinchmeter. In a second phase of the study were verified the possibility to apply this new pinch configurations assessment in 46 participants without and with neuromusculoskeletal hand pathology. We also collect data regarding the difficulties in performing ADL, through a checklist of pinch tasks, built by the authors and experts using a Delphi Panel. **RESULTS:** We verified that the strength behavior was identical in participants with and without hand pathology and the difference between their strength was significative. The statistical analysis confirms the possibility to access new pinch configurations. The 23 participants with hand pathology identified the ADL tasks, that were difficult to perform. We verify that with more lack of strength more difficulties in performing tasks. This way we can relate difficulties in the performance of the ADL tasks that uses the pinches, with the lack of pinch strength. **CONCLUSIONS:** The assessment of the pinch strength can be related to the functional performance of ADL, giving a new perspective of the pinch function. We develop an access protocol for these pinches and it is not yet validated. This would be very useful for the clinical professionals working with ADL.

Keywords: *Pinch, Strength, Assessment*

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O263

Impact of a program for self-management on adolescents with type 1 diabetes

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BACKGROUND: Given the high incidence of type 1 diabetes in adolescents and its impact on adolescents' development and level of treatment adherence, it seems necessary to develop a structured intervention to promote patients autonomy through the

development of self-management skills. The proposed intervention is based on an educational program for self-management of adolescents with Spina Bífida, validated by Malheiro^[1], and adapted for pediatric populations from Kate Lorig's Expert Patient Educational Program. The intervention will be based on the psychoeducational strategies used by Malheiro^[2], such as problem-solving, planning, role-playing, tutorials, and lay-leds (patients who are experts in managing their chronic condition) as a model role. **OBJECTIVES:** To evaluate the feasibility of a complex intervention, we aimed conduct a pilot study to: adapt and implement the educational program for self-management of adolescents with Spina Bífida, to adolescents with type 1 diabetes; evaluate its effects on self-management skills, quality of life, knowledge, self-efficacy and variance in HbA1c levels. **METHODS:** A mixed methods study with pre and post evaluation with quantitative and qualitative methods. We will be used to evaluate the program (psychoeducational strategies, themes, timings) and its effects (reported by the adolescents and their caregivers) through questionnaires and focus group interviews. It is our intention to develop and implement a structured intervention consisting in several sessions, of which contents will be drawn from a integrative review about the effectiveness of psychoeducational interventions of adolescents with type 1 diabetes and the results of a focus group interviews. The target population is composed by adolescents with type 1 diabetes, aged 15 to 19 years old. Data collection instruments: Disabkids (health-related quality of life)^[3]; Self Efficacy Diabetic Scale (SEDS)^[4]; Knowledge test about the disease^[5]; and scripts for the focus groups interviews, between lay-leds (young adults experts in self-management of type 1 diabetes) and their parents. **CONCLUSIONS:** We expect that this intervention may promote a differentiated approach for disease managing, with implications for behavioural change in adolescents with type 1 diabetes.

Keywords: *Adolescent; Type 1 Diabetes; Self-management; Program*

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O269

Effects of functional health education on the balance and risk of falls in the elderly with reduced physical mobility

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BACKGROUND: Aging is inevitable, which implies a decrease in some physical abilities, such as balance, flexibility, agility, and joint mobility. Decreases in physical abilities lead to a decrease in the functional and cognitive capacity that is fundamental to the activities of daily living^[1,2]. **OBJECTIVE:** The objective of this study is to evaluate the effects of a functional health education program on the functional capacity of a group of elderly enrolled in the "Senior Activity" Program, who attend day centers of the Viseu council. **METHODS:** This is an experimental study, with a sample of 20 elderly people aged 67-91 years (mean of 80.70 ± 5.992). They were randomly assigned to the experimental group (EG, n= 10) and control group (CG, n= 10). During this study all subjects maintained the physical activity training of the "Senior Activity" Program, the EG had a training with the aerobic, flexibility and strength components associated with the stimulation. The exercise program lasted 12 weeks 3 times per week and the 30 minute session. The entire sample was assessed at the beginning of the program after 4 weeks, after 8 weeks and after 12 weeks with the following Scales: Berg Scale to check the balance and risk of falls and to evaluate the fear that the elderly have to fall was used the questionnaire Falls Efficacy Scale (FES). **RESULTS:** the implemented program demonstrated that physical exercise in general allows global improvements in the elderly. However, these improvements were only statistically significant in the EG, according to the Time Up and Go, obtained the mean initial time 21.10 ± 10.06 and the final 16.32 ± 7.80 ($p= 0.043$), compared to the CG ($p= 0.436$), in relation to the balance, the initial evaluation was 32.60 ± 5.27 and final evaluation with an improvement in the balance with 43.38 ± 7.99 ($p= 0.009$), as compared to the CG ($p= 0.280$). In relation to the self-confidence of the risks of fall, initial evaluation was 49.50 ± 18.93 and final evaluation was 62.43 ± 19.15, self-confidence has increased, it is verified that there are no significant differences in the EG ($p= 0.158$) and in the CG ($p= 0.853$). **CONCLUSIONS:** Despite some limitations, the introduction of the functional health education program revealed that it could potentiate the effects of physical exercise and demonstrated its importance for functional health. These results are of great interest primarily for physiotherapists and health and sports professionals to promote health in the elderly population.

Keywords: Functional health, active aging, balance, risk of falls

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O270

Migraine in the university Students: Project of intervention with acupuncture through ankle cuff technique

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BACKGROUND: Migraine is characterized by improved sensitivity of the nervous system^[1] and is one of the most common neurological disorders^[2]. Migraine is a very common disorder, unfortunately, many are not diagnosed or are subtreated^[3]. This chronic disease is the 19th cause of disability worldwide^[4]. Overall, acupuncture treatment of migraine was associated with slightly better outcomes and less adverse effects than treatment with prophylactic drugs^[5]. **OBJECTIVE:** the aim of this study will be to analyze the effect of acupuncture, more specifically a technique called Ankle cuff, to reduce pain and frequency of headaches and migraine in young adults. **METHODS:** Our sample will consist of a population of about 120 higher education students, belonging to the University Campus of Viseu of the Piaget Institute (Portugal) and the Fluminense Federal University (Brazil), in the healthcare area, between the aged of 18 and 40 years. The study contemplates 3 phases, one of selection of the sample and filling of questionnaires, and two of data collection, and processing of the results. The duration of the study will be approximately 2 (two) months of data collection, which will be divided in 15 (fifteen) days for the from the participant selection process to the personal identification questionnaire fill, in order to verify and categorize the pain felt and the impact of disease on daily life in these students we will use the Visual Analogue Scale (VAS) by the Migraine Disability Assessment Scale (MIDAS) questionnaire, 1 cycle of 4 treatments (1 cycle of one treatment per week with a duration of 30 minutes each) and finally the processing of the results and their conclusion. **CONCLUSIONS:** Following a literature review of the clinical condition of migraine or headache, the approach centered on the hypotheses of possible treatment for this problem demonstrated in a previous study a considerable prevalence (36%) of participants that could resort to acupuncture intervention for the prophylactic or symptomatic treatment of migraine or headache^[3]. These initial results allow us to create a broad approach on the need to conduct a comprehensive study with the application of acupuncture on the clinical condition of migraine or headache in university students.

Keywords: Migraine, Acupuncture, University students, ankle cuff technique

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O271

Physiotherapy intervention through postural education in children and adolescents in the 2nd and 3rd cycles of basic education

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BACKGROUND: First middle school years are crucial when it comes to the arising of musculoskeletal disorders in growth stage children, primarily due to bad postural habits adopted while carrying their school supplies to and from school^[1]. Those same bad postural behaviors, that Dagge and Filgueiras^[2] concluded that may increase intervertebral pressure by almost 30% for the same weight conditions. The best way to avoid poor postural habits, is to teach children good postural behaviors for performing their everyday life activities^[3]. **OBJECTIVE:** to analyze the effects of Physical Therapy intervention and its influence on postural habits and pain levels, through a postural education program implemented in schools in the district of Viseu, Portugal. **METHODS:** the effect of postural education through the application of a postural education program with a pre-test (T0) and post-test (T1) evaluation and analysis. The postural education program was applied to the 2nd and 3rd cycle students in the EBIS school, aged between 10 and 16. The sample consisted of 124 students divided into control and experimental groups. Intervention through cognitive-motor teaching and learning lasted 15 minutes, often once a week for 8 weeks, with the purpose of transmitting some knowledge of the anatomy, biomechanics and pathophysiology of spinal pain and ideal posture habits in the following situations: Seated posture, standing posture, lying posture, backpack transport, lifting weights, weight transfer. **RESULTS:** The results of the study indicated that for all the variables studied, the experimental group obtained significant improvements in the reduction of complaints of musculoskeletal pain ($p= 0.043$) and in the ideal postures of the participants ($p= 0.005$), in the remaining variables also obtained improvements but they did not represent significant differences. **CONCLUSIONS:** We can conclude that the intervention of Physiotherapy in the school context is essential for the adoption of better postures in the day-to-day. It is also worth noting the importance of studies that use multidisciplinary methodologies and user-centered procedures to analyze postural behavior in a real interaction situation.

Keywords: *musculoskeletal pain; changes in postural habits; postural education*

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Well-being and social support for caregivers of children and young people with atypical development

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BACKGROUND: Research on well-being and social support has become a central issue in the discourse and practice of professionals working with populations who are psychosocially fragile^[1,2]. The scientific literature emphasizes the vastness of this line of study, which has also gained visibility in research on families of children and young people with atypical development, in particular, on the influence of formal and informal social support in dimensions related to caregivers' health and well-

being^[2,3]. As part of an inclusive approach, and in line with national and international guidelines and regulations, we recognize the role of parents in defending the educational interests of their children and as decision-makers in the educational process. Therefore, promoting their health and well-being are key areas in the context of socio-educational and therapeutic intervention. **OBJECTIVE:** Our aim is to: *i)* analyse the well-being (life satisfaction dimension) and social support (social network and satisfaction with support dimension) of parents/caregivers of children and young people with developmental and intellectual difficulties, *ii)* perceive the differences between subgroups of caregivers (according to the typology of the children's/students' difficulties: intellectual problems, motor and autism spectrum disorders) in the well-being and social support dimensions, *iii)* outline specific intervention strategies for the caregivers in the study. **METHODS:** It is a non-experimental study; the sample consists of 160 parents of atypical children/young people. The following data collection instruments were used: a sociodemographic questionnaire; the Social Support Questionnaire – SSQ6^[4] (the Portuguese version of the Social Support Questionnaire – Short Form; a Portuguese adaptation by Pinheiro & Ferreira, 2001); Life Satisfaction Scale^[5] (by Neto, Barros & Barros, 1990; Simões, 1992). Statistical analyses reveal differences among the subgroups under study, with caregivers of children with autism revealing significantly higher values in social support (support availability and satisfaction with support) and in life satisfaction. **CONCLUSION:** In light of the results, we present specific lines of intervention directed at promoting social support for and the well-being of caregivers.

Keywords: *well-being, social support, caregivers, atypical development*

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Poster Communications

P1

Differences in healthy lifestyles between different population groups of people

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BACKGROUND: Everything related to good eating habits, practice of physical activity, good rest habits and personal hygiene encourages healthy behaviors; on the other hand, stress, lack of rest, smoking, sedentary lifestyles and abuse of alcohol and / or psychoactive substances are a risk to health.

OBJECTIVE: The aim of the study was to determine the differences in healthy lifestyles variables between the groups of 18 to 35 years old, 36 to 59 years old, and older than 60 years, classified according to WHO^[1]. **METHODS:** The sample of the study was formed by 840 subjects, age between 18 to 77 years (41.62 ± 13.30), from different areas of Spain. Variables and Instruments: Intention to be physically active (IPA): The Intentionality Measurement Scale was used. It was validated to Spanish^[2]. For the measurement of healthy lifestyles, the Healthy Lifestyles Questionnaire (EVS)^[3] was used. It was translated and validated by Leyton et al^[4]. For the measurement of Alcohol and Drugs variables, the Lifestyles Questionnaire (EVS) was used, in the Spanish version, by Moreno et al^[5]. Procedure: Firstly, the questionnaire was elaborated in the Google Form platform. Secondly, the sample was selected and the questionnaires were publicized through different ways (whatsapp, facebook, twitter). Data Analysis: Factorial analysis and reliability analysis were performed. Then, the descriptive analyzes and the analysis of variance were carried out by an ANOVA analysis with Tukey's Post Hoc. The program used to perform the statistical analyzes was the IBM SPSS 19.0. **RESULTS:** Significant differences were found in all variables for the different age groups. IPA (F=3.98; p=.01; Group<35 (4.36±.78), Group 36-59 (4.22±.83), Group>60 (4.13±.89)), Rest Habits (F=3.98; p=.01; Group<35 (3.65±1.08), Group 36-59 (3.67±1.04), Group>60 (4.15±.88)), Tobacco Consumption (F=3.98; p=.01; Group<35 (1.59±1.11), Group 36-59 (1.54±.91), Group>60 (1.34±.88)), Balance Diet (F=3.98; p=.01; Group<35 (3.63±.93), Group 36-59 (3.82±.85), Group>60 (4.26±.86)), Respect for the meal schedule (F=3.98; P=.01; Group<35 (4.07±.86), Group 36-59 (4.11±.90), Group>60 (4.40±.81)), Alcohol Consumption (F=3.98; P=.01; Group<35 (2.04±.90), Group 36-59 (1.83±.88), Group>60 (1.85±.80)), and Drug Consumption (F=3.98; P=.01; Group<35 (1.90±.89), Group 36-59 (1.52±.70), Group>60 (1.29±.51)). **CONCLUSIONS:** We can conclude that people over 60 are who have the most intention to be physically active, better rest habits, more balanced diet and greater respect for the meal schedule. It is the population under 35 years who has the highest consumption of tobacco, alcohol and drugs.

Keywords: health, lifestyles, physical activity.

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P8

Physical activity in primary prevention of hypertension: The role of the Physiotherapist

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BACKGROUND: Hypertension is characterized by elevated blood pressure (systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg)^[1]. Its incidence has been increasing in most countries and factors such as lifestyle, diet and lack of physical activity play a decisive role in this growth^[2]. The regular practice of physical exercise is a very important part of prevention and non-pharmacological treatment of hypertension. Despite not being defined the characteristics of the ideal workout plan, there is overwhelming evidence which supports that physical activity is inversely related to blood pressure, hypertension and cardiovascular morbidity^[3,4]. **OBJECTIVES:** To promote a critical analysis of the effectiveness of physical activity in the primary prevention of hypertension. **METHODS:** Bibliographic research in Pubmed, PEDro and Cochrane Library databases, limiting RCTs (randomized controlled trials) published in the English language. From the results obtained, 5 RCTs with the highest score (≥ 4 PEDro scale) and better adaptation to the theme under study (primary prevention) were selected. **RESULTS:** Antihypertensive medication has side effects and possible long-term complications, so non-pharmacological alternatives should be emphasized^[1,3]. Physical activity shows evidence on blood pressure, VO max, heart rate, heart rate, glucose, volume and left ventricular mass index^[5]. Thus, physical activity should be based on aerobic exercises with intensity of 40-70% of the VO^{max}, 5 to 7 days a week and with the duration between 30 to 45 minutes daily^[1]. Non-continuous high-intensity exercises (such as soccer) show favorable results. Strength training may also be suggested with several repetitions with low load. However, the prescription of an exercise program must consider the physical fitness of the subject (VO^{max}) in order to adjust the program training^[1,3,4]. **CONCLUSIONS:** Primary prevention of hypertension requires a multidisciplinary team, which creates intervention programs, implements them, including strategies of motivation for physical activity in individuals with risk of developing the pathology.

Keywords: hypertension, primary prevention, physical activity/exercise.

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P10

Oxidation and Oxidative Stability in Aromatized Olives Oil and Their Influence on the Quality of Virgin Olive Oil

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BACKGROUND: Olive oil is a vegetable fat and is considered the healthiest fat, due to its composition in monounsaturated fatty acids, polyphenols, tocopherols, etc. There is a great demand for innovative and differentiating products of high nutritional quality, such as flavored oils. The flavoring of olive oils seeks to improve their sensory and nutritional characteristics and prolong their useful life, since the added products can be beneficial for their antioxidant and antimicrobial characteristics^[1]. The innovation and development of new products allows the renewal and extension of the range of products and services and associated markets, implying the creation of new methods of production, supply and distribution. **OBJECTIVES:** The objective of this research work is to study virgin olive oils produced with various aromas, through their physical-chemical behavior^[2], in two successive 2015/2016 and 2016/2017 campaigns. **METHODS:** In this investigation virgin olive oil of the Madural, Cobrançosa and Verdeal Transmontana olive varieties were obtained, flavored with salt and salt flower, garlic, rosemary and lemon peel, in order to evaluate their influence on olive oil quality. All added products are dehydrated, except for the salt flower. Its influence on some physico-chemical parameters of the olive oils (peroxide index and oxidative stability)^[3] was analyzed according to the methods of analysis of Regulation (EEC) 2568/91^[4] and determinations in Rancimat. **RESULTS:** The results obtained, after one year of flavoring, indicate that the monovarietal and flavored olive oils of the varieties under study maintain the initial category «Extra Virgin» for the 2015/2016 campaign. The same situation is not the case for olive oil for the 2016/2017 campaign, the flavored olive oils of the Madural variety exceed the maximum permitted value for olive oil in the «Extra Virgin» category (20meqO₂/kg). For the oxidative stability and after one year of aromatization, we observed that the monovarietal olive oil and the aromatized oils of the Madural variety were the oils that suffered the greatest changes (4,3 h, 5,5 h, and 5,6 h). The flavoring agents do not significantly alter the quality parameters of the olive oils and may favor their stability. **CONCLUSIONS:** With the investigations carried out we intend to demonstrate that the aromatization of olive oils conditions a greater diversity of products in which olive oil is the base product, a greater range of choice for the consumer and improves the organoleptic characteristics of the olive oils. Flavored olive oils may have an increase in their useful life compared to virgin olive oils. The

antioxidants present in greater quantity prevent the oxidation of the olive oil and consequently the taste alteration.

Keywords: *Monovarietal olive oils, aromatized olive oils, innovation, oxidation, oxidative stability.*

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P11

Reminiscence: development of a program for group intervention

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BACKGROUND: The last decades have been marked by significant changes in the profile of the world population the progressive aging of the population seems to delineate a set of consequences that includes a decline in several areas of the human functioning and, concretely, at a cognitive level. Reminiscence Therapy (RT) has been described as a therapeutic strategy for the capacitation of individuals with cognitive decline, standing out as a technique of cognitive stimulation that appeals to the systematic recall of past events. It uses materials from the past to stimulate memories and promote sharing^[1,2]. However, to the best of our knowledge, there is no structured RT model that can be used in institutional settings. **OBJECTIVE:** To develop and validate a group RT program aimed at older adults with a cognitive decline in institutional settings. **METHODS:** A program was developed based on the formulations of the Medical Research Council^[3] for the development of complex interventions. Phase I (Preliminary) corresponds to the design of the program and preparation of its materials; Phase II (Modeling) was supported in interviews and in the conduction of focus groups; in Phase III (Field Test), each of the program sessions was evaluated; and finally, in Phase IV (Consensus Conference) all the contributions and challenges resulting from the different reported phases were synthesized. **RESULTS:** As a result of the involvement of experts and health professionals (n = 27), and institutionalized older adults (n = 49), the RT program was created. The program includes a main component with 14 biweekly sessions, and a maintenance component with seven weekly sessions. Each session lasts 60 minutes, focusing on a theme from the participant's life course, from infancy to the present age. In addition, a digital platform was created that contains specific audiovisual materials for each RT program session. **CONCLUSION:** The convergence of feedback

received from all the participants allowed the final version of the designed RT program to address the needs of the older adults with cognitive decline in institutional settings. The program and materials developed emerge as new contributions to clinical practice, with potential theoretical-investigative implications. The structuring and validation processes demonstrate that the program has characteristics adjusted to the setting, with meaning for the target population. Currently, two pilot studies are underway to evaluate the impact of RT on cognition, depressive symptomatology and quality of life of the older adults in day centers and nursing homes.

Keywords: *cognitive dysfunction; aged; program development; reminiscence therapy*

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P12

Quando o sono magoa!!

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INTRODUÇÃO: Dados epidemiológicos indicam que a dor e o distúrbio de sono se agravam reciprocamente^[1]. Os tratamentos existentes continuam com resultados pouco satisfatórios^[2]. Pouca informação existe sobre a intervenção da fisioterapia no sistema de sono (colchão e almofada) e na postura de dormir. **OBJETIVO:** Descrever uma abordagem de fisioterapia que atua concomitantemente na redução da dor e no distúrbio do sono. **METODOLOGIA:** Amostra: Série consecutiva de 41 indivíduos com dor musculoesquelética crónica e queixas de distúrbio de sono. Período de análise: janeiro a dezembro de 2017. Procedimentos: A intervenção de fisioterapia é constituída por três contactos diretos e monitorização. T1 - O primeiro contato direto consiste na avaliação funcional para determinar as queixas, estudar a dor e os seus fatores de risco (Escala numérica da Dor: 0 a 10, máxima dor), avaliar as atividades afetadas (Avaliação Funcional Centrada no Utente: 0 a 10, máxima capacidade), ensinar estratégias para gerir a dor e limitação funcional e prescrever exercícios terapêuticos. T2 – O contato é marcado após avaliação da postura do sujeito em decúbito no seu sistema de sono a partir de fotografia. Neste contato é prescrito o sobre colchão personalizado e almofada para obter uma postura indolor. O sobre-colchão é um equipamento constituído por 2 a 3 camadas de esponja com densidade e espessura variada de acordo com as condições antropométricas da pessoa para criar uma zona de descompressão a nível do ombro e anca. T3 – último contato é marcado após 2 semanas de utilização do sobre-colchão personalizado. Pode haver vários contactos via correio eletrónico para monitorização e apoio do sujeito no ajustamento do sobre-colchão e almofada. Análise estatística: análise descritiva dos dados. **RESULTADOS:** Todos os sujeitos referiram posição preferencial de dormir em decúbito lateral. Duas semanas após a aplicação do sobre-colchão personalizado, o registo de dor evoluiu de 6,1 para 0,08. As queixas relacionadas com o sono

evoluíram favoravelmente de 3,73 em T1 para 7,37 em T2 e 9,53 em T3. **CONCLUSÃO:** A dor é reduzida com esta abordagem de fisioterapia que inclui a aplicação do sobre-colchão personalizado para criar zonas de descompressão do ombro e da anca, obtendo um alinhamento postural confortável e uma melhoria significativa no sono. A importância da avaliação postural em decúbito é um parâmetro que deve ser implementado nas condições de dor musculoesquelética noturna e distúrbio de sono.

Keywords: *Fisioterapia; Dor Crónica Musculoesquelética; Distúrbio de Sono; Postura em Decúbito.*

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P14

Microorganisms role in the production of kefir and its benefits for our health

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BACKGROUND: Nowadays, the dairy industry has been evolving more and more, seeking not only to increase the range of products available to the consumer, but also to satisfy its new requirements. For this reason, appeared recently on the market, dairy products such as kefir. This is a fermented milk product produced from grains that comprise a specific and complex mixture of bacteria and yeasts that live in a symbiotic association^[1,2]. **OBJECTIVE:** This study intended to identify the microorganisms present in the kefir production, and also the benefits of their presence to our health. **METHODS:** It were conducted a search recurring to the database PubMed®, where it was introduced the terms: “fermented foods”, “health”, “kefir”, “kefiran” and “microbiota”. After applying several filters, the most relevant articles were selected. **RESULTS:** The literature showed that kefir can be present in the form of yogurt or lactic beverage and that the products containing kefir are rich in protein, due to their specific bacterial flora. *Lactobacillus kefir*, *Lactobacillus kefiranofaciens*, *Lactobacillus kefirgranum*, *Lactobacillus parakefir* and *Candida kefir* are some of the most common. The presence of these microbial species seems to confer unique properties to kefir-based products. **Discussion:** The most important aspects of the presence of these bacteria are presented in the gastrointestinal tract, where they appear to act in the decrease of the sensation of abdominal swelling and in the increase of the lactose digestion. **CONCLUSIONS:** Based on these studies, the nutritional composition of kefir varies according to the composition of the milk used, the type of the grains. However, it is believed that the ingestion of kefir products can improve our gut microbiota and health condition.

Keywords: *Fermented foods, health, kefir and microbiota.*

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P21

Program of use of medicinal plants in the Center for Psychosocial Care Alcohol and Drugs in the city of Palhoça, Brazil: experience report

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BACKGROUND: With the implementation of the National Policy of Medicinal Plants and Phytotherapies within the Unified Health System (SUS) in Brazil in 2006, several actions were implemented in primary care. However, in the scope of psychosocial care Alcohol and Drugs, the experiences are restricted^[1,2]. The diversity of medicinal plants available in the Brazilian flora, possible harm reduction actions, the search for more accessible alternative treatments in comparison to the synthetic drugs and the smaller side effects than the allopathic drugs, justify the implementation of a program aimed at this public. In addition, medicinal plants for many years are embedded in popular culture and are important in maintaining self-care with health^[3,4]. **OBJECTIVE:** To develop health actions for the use of medicinal plants within the Psychosocial Care Center for Alcohol and Drugs (CAPS ad) in the municipality of Palhoça, Brazil. **METHODS:** Report of experience of the implantation of the use of medicinal plants by CAPS users ad - CAPS ad Seminary Program, linking University of the South of Santa Catarina - Extension Project in Medicinal Plants in SUS (FitoSUS), professionals and users of CAPS ad. It was established a coordinating group that developed the intervention strategies for 2018^[4,5]. **RESULTS:** Initially, a graphic art was created as a visual identity of the Program, with the intention of creating a visual link with the project. Educational actions were initiated in the CAPS ad, as the institution of "Tea Day", with the use of different medicinal plants with anxiolytic properties and to control insomnia; The teas, besides presenting an alternative means with scientific support for the treatment of some users' symptoms, were opportune to integrate their families to the project. Instructional activities on indications and ways of using medicinal plants were also incorporated into the routine of the service, mainly in the Group of Hortoterapia with the planting, also, of medicinal plants. Educational materials in the form of posters and folders have been produced and remain in CAPS ad for those who feel like knowing more about the medicinal plants that are being used to make the teas. **CONCLUSIONS** The adoption of medicinal plants assisted the development of autonomy in health care, allowing the maximization of social, cognitive, physical and psychological functions, improving the quality of life of individuals and their families.

Keywords: *Medicinal Plants, Phytotherapy, Integrative and Complementary Practices*

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P22

Effects of the Water Cure Korean Method in constipated patients - Clinical Trial Protocol

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BACKGROUND: Constipation is a syndrome associated with a particular cause that triggers symptoms in the gut causing its malfunction. The triggering factors can be from pathological cause or behavioural reasons. It is estimated that 12% to 19% of world population suffers from this syndrome^[1]. Given its incidence and interference in patients' quality of life, it is relevant to study treatment alternatives with no or less side effects^[2]. **OBJECTIVES:** The purpose of this study is to evaluate the effects of Water Cure Korean Method (WCKM) by the frequency of defecation in constipation and to make a proposal of a treatment protocol proposal. Study: Series of Study Cases. **METHODS:** WCKM was performed with a minimum of 1 litre of environment temperature water drunk in fasting conditions, every morning, during three weeks by 5 mild-constipated patients; 2 women and 3 men. The data records were made by the participants with the access to Bristol Scale of Form Stool and a diary of records. **RESULTS:** due to the small sample only descriptive statistical analysis was made with Microsoft Excel® 2007 to achieve and compare average, standard deviations and absolute frequencies of defecations per week, quantify improvements in the number of defecations per week and stools type changings. The 5 subjects improved augmenting the number of defecations per week: Subject1 (S1) from 4 at the baseline to 6 during the 3 weeks treatment and to 8 on the follow-up; S2 from 6 at the baseline to 7 during the 3 week' treatment and to 6 on the follow-up; S3 from 4 at the baseline to 6 during the 3 week' treatment and to 6 on the follow-up; S4 from 2 at the baseline to 3 during the 3 week' treatment and to 3 on the follow-up; S5 from 5 at the baseline to 7 during the 3 week' treatment and to 7 on the follow-up. **CONCLUSIONS:** WCKM may be an alternative method to conventional treatments such as the use of laxatives that cause dependence and tolerance, since it is a natural, easy, cheaper and non-invasive method that can be performed by the patient. Studies with more patients and with different degrees of constipation are recommended to obtain statistical relevance and greater knowledge about the efficacy of this method.

Keywords: *Traditional Chinese Medicine, Water Cure Korean Method, Constipation.*

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Immediate effects of acupuncture in carpal tunnel treatment

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BACKGROUND: Carpal Tunnel Syndrome (CTS) is the neuropathy of the upper limb and is defined as a symptomatic compressive neuropathy of the median nerve at the level of the lower radio cubital joint that causes a decrease in nerve function and may be caused by several pathologies or conditions. The most common symptoms are paresthesias, hand and arm pain, and muscle dysfunction. In the vast majority of situations, surgery is the most used therapeutic modality¹⁻³. **OBJECTIVES:** (1) To assess whether classical selection criteria for acupuncture points, according to Shang Han Lun, may be useful to make clinical outcomes more predictable; (2) To evaluate the effects of acupuncture in the treatment of pain, edema, hand strength and performance of daily tasks of patients with Yang Minor / Shao Yang syndrome, according to Traditional Chinese Medicine (TCM) with the Heidelberg Model (MH). **METHODS:** 4 patients diagnosed with CTS according to the inclusion criteria were selected and submitted to the Leopard Spot Technique (LST) followed by acupuncture and moxibustion on the Tk5 point with cone. Three treatments were performed and patients were evaluated before and 5 minutes after the treatments. **RESULTS:** (1) muscular strength increased in all individuals, the average gain was 25% corresponding to 17 kg of strength of the flexor digitorum muscles, (2) self-reported pain decreased in all participants (3) a decrease of 7 values with respect to symptom severity and 2 values in the BCTQ functional state, (4) mean hand perimeter decrease in 0.75 cm, (5) the Phalen was negative for all patients. **CONCLUSIONS:** Acupuncture has effectively contributed to the relief of CTS signs and symptoms in our patient group. Procedures systematization based on a line of diagnostics and substantiated therapy will serve as a way to facilitate more standardized, rational and communicable interventions. TK5 acupuncture point plays a prominent role in the systemic treatment of CTS in individuals with Yang Minor / Shao Yang stage signs. Reduction of the hydrostatic pressure in the wrist region and the improvement of the physical, neurological and structural conditions of different tissues that are present in the anatomical region allow an increase in the painless mobility of the wrist and the better performance of the daily activities.

Keywords: *Carpal Tunnel Syndrome, Traditional Chinese Medicine, Acupuncture, MTC Heidelberg Model*

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Surf! A meaningful occupation. An experiment, a case study

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BACKGROUND: The terms occupation and activity have been theorized among occupational therapists^[1]. The therapeutic use of occupation and activity is considered as a unique and central element of the professional practice of Occupational Therapy. Dolecheck and Schkade^[2] report that participation in meaningful occupations and activities results in therapeutic gains. In addition, the human brain is responsible for responding positively to activities that produce flow, promote relaxation and mental stimulation, which in turn will preserve physical and mental health^[3]. Surfing is an activity that allows contact with nature and the sea in a unique way. In addition, the therapeutic properties of water provide a stimulating learning environment for a child with a disability^[4]. In this case, surfing practice as a significant occupation with an immediate reward value for pleasure in performance and involvement. According to Townsend and Polatajko^[5], involvement in meaningful occupations is an essential factor in health, well-being and justice. **OBJECTIVES:** To verify the impact of surfing as a significant daily occupation of a 9-year-old child with a diagnosis of cerebral palsy with a bilateral spasticity with predominance of the lower limbs (spastic diplegia) compatible with a Gross Motor Function Classification System level 1. **METHODS:** The study design used was a case study in which we sought to obtain indicators with two instruments of occupational therapy, interviews (initial and recently to parents, physiotherapist and teacher), analysis of surfing activity and videos. Twenty-two individual sessions were carried out following a predefined structure for 9 months, together with a surf trainer elaborating systematic records and qualitative analysis of the same. **RESULTS:** Of the instruments used by occupational therapy they allowed to validate that it is a significant occupation, and which has an impact on day-to-day occupations. In summary, the interview results reveal descriptions of behavioral improvements in motor, cognitive and social abilities, the videos show the evolution of surfing practice in line with the improvement of occupational performance. **CONCLUSIONS:** The results suggest that the child's

involvement in surfing has a positive impact on the autonomy, resistance to work and persistence in the execution of tasks.

Keywords: *occupation, surf, therapy, meaningful*

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Retenção escolar: pode o envolvimento afetivo dos alunos com escola contribuir para a sua prevenção?

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INTRODUÇÃO: A retenção escolar no sistema educativo português assume valores preocupantes. segundo os dados do PISA^[1] mais de 30% dos alunos com 15 anos já reprovaram pelo menos uma vez. Constatou-se uma relação entre a variável sentido de pertença e os resultados académicos em ciências bem como com a satisfação total com a vida^[1]. Verificando-se ainda que 17,7% dos alunos não têm um sentido de pertença à escola, 12,9% sentem-se outsiders, 22,5% têm dificuldade em fazer amigos e 11,5% sentem-se sós. **OBJETIVO:** O objetivo do estudo foi averiguar se os alunos que reprovaram de ano foram os que revelaram no início do ano letivo menos envolvimento afetivo na escola quando comparados com os alunos que transitaram de ano. **MÉTODOS:** É um estudo quantitativo, longitudinal. A amostra é constituída por todos os alunos do 10º ano de uma escola secundária do distrito de Lisboa. Para a recolha dos dados foi utilizada a escala *Envolvimento dos Alunos na Escola (EAE-EAD)*^[2,3,4], que foi passada no final do primeiro período. No final do ano letivo foram recolhidos os dados relativos à retenção escolar dos alunos. Utilizou-se o teste de Qui-Quadrado para comparar os alunos que reprovaram e os alunos que transitaram de ano nos 5 itens da dimensão afetiva da escala^[3,4], tendo-se polarizado as respostas no pólo da concordância/discordância. Encontraram-se diferenças significativas entre os dois grupos em todos os itens da dimensão afetiva. **RESULTADOS:** Os resultados mostram, que nos alunos que reprovaram, houve uma percentagem significativamente mais elevada de alunos que, no início do ano letivo, se sentiam sós (16% no grupo que reprovou e 6,8% no grupo que não reprovou; $X^2 = 6,289$, $p = 0,012^*$), que se sentiam excluídos (18,5% no grupo que reprovou e 8,8% no grupo que não reprovou; $X^2 = 5,757$, $p = 0,016^*$), com dificuldade de integração (27,2% no grupo que reprovou e 11,6% no grupo que não reprovou $X^2 =$

4,937, $p = 0,026^*$), dificuldade em fazer amigos (29,6% no grupo que reprovou e 18,1% no grupo que não reprovou $X^2 = 4,937$, $p = 0,026^*$) e que sentiam que ninguém gostava deles (25,9% no grupo que reprovou e 14,9% no grupo que não reprovou $X^2 = 5,167$, $p = 0,023^*$). **CONCLUSÃO:** Conclui-se que o envolvimento afetivo dos alunos na escola é importante para o sucesso académico; a escola deve promover estratégias para esse envolvimento no sentido de proporcionar bem-estar aos alunos e prevenir a retenção escolar.

Keywords: *Envolvimento dos alunos na escola, Retenção Escolar*

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BROINHAZ – Food innovation of a new product: Corn bread with olive oil and olives

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BACKGROUND: The area of food innovation has been gaining prominence, mainly the reformulation of market to meet the needs of the population^[1]. Faced with this trend, we developed a baking product called *BROINHAZ*, which incorporates in its formulation olive oil (rich in monounsaturated fats which are associated with the decrease of cardiovascular diseases) and olives (rich in phenolic antioxidants with anti-inflammatory, anti-inflammatory, anti-viral, anti-carcinogenic), contributing to its nutritional value and improving the diet of consumers^[2,3,4,5]. **OBJECTIVE:** This work had as objectives the development and optimization of the formulation of a corn flour with olive oil and olives and the study of acceptance of the consumers of the new product. **METHODS:** The method used in the basic formulation of *BROINHAZ* consisted of the combination of raw materials: corn flour, water, rye flour, olives, olive oil, baking powder and salt, which were weighed, fermentation, mixing, leavening, modeling, baking, storage, storage and packaging in a packaging with an innovative design. The nutritional value of *BROINHAZ* per 100 g was 282 Kcal / 1128 Kj, corresponding to 42.21 g of carbohydrates (0 g sugar), 5.23 g of proteins, 7.82 g of lipids (1.14 g of saturates, 5.07 g of monounsaturates, 1.16 g of

polyunsaturates), 0 mg of cholesterol, 3.9 mg of dietary fiber, 998 mg of sodium, 91.6 mg of potassium and 10.5 g of calcium. Through a qualitative approach, the consumer's perception of the new product was evaluated. The panel of testers was composed of 12 female elements (100%) with mean age of 41.5 years and standard deviation of 8.39, which were tested by *BROINHAZ* and evaluated for color, aroma, taste, texture, flavor and overall appreciation and packaging, having been classified according to a hedonic scale of 5 points (1-heartbreak extremely, 2-heartbreak, 3-not taste nor disgust, 4-taste, 5-taste extremely). **RESULTS:** The results obtained were quite satisfactory, especially in the overall assessment and packaging with 83.3% of respondents reporting extremely liking. Also 75% enjoyed extremely texture and flavor. It should be noted that there were no negative assessments in any of the aspects analyzed. When asked if the consumer would be willing to acquire *BROINHAZ*, 100% of the sample said yes. **CONCLUSIONS:** As a conclusion, this study allows us to develop an innovative food based on differentiation (rich in antioxidants, with zero sugar content and with an innovative packaging), through the incorporation of raw materials and functional inputs, benefiting consumer health and the production of local resources characteristic of the region.

Keywords: *New Product Development, Olive Oil, Olives, Baking, Innovation.*

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The elderly in the emergency department: about a bibliographic review

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BACKGROUND: Demographic aging and increasing longevity have today an expression never seen in the history of mankind. These phenomena, although a source of pride, raise some health problems that need to be solved. Thus, with the continuous increase in the number of elderly people, there is also an increase

in the prevalence of chronic-degenerative diseases and their complications, as well as the elderly living alone or with the elderly couple, leading to a greater influx of elderly people to the service urgently^[1,2,3]. **OBJECTIVE:** To analyze factors that influence the demand for emergency services by the elderly. **METHODS:** The research consists on an integrative literature review. A total of 7 studies were included in the study of electronic databases (Medline; PubMed; Psychology and Behavioral Sciences Collection), whose inclusion criteria were articles presented in full text, English-language articles published between 2014 and 2018 that fit the theme under study. **RESULTS:** Most of the articles were related to studies done in the USA^[4,5]. Of the remaining one was made in Germany another in France, another in South Korea and one in Hong Kong^[6,7,8,9]. All the studies were quantitative and identified several reasons for using an emergency service. Most of the reasons were due to "illness/ diseases" (80.7% in the South Korean study); however, accidents falls and physical environment (climate) are other reasons^[10]. In the study of North Carolina, the reasons were mainly of stress, anxiety / depression and psychoses. In the study of Texas, whose period covered a heat wave, a greater number of emergency room visits were related to complications of the heat wave. The same happened in the Hong Kong study^[8]. Anxiety and depression not only in the elderly, but also in caregivers was another reason for the demand for the emergency service. **CONCLUSIONS:** The results suggest that the demand of the emergency service by the elderly is complex based on several factors that sometimes combine and interconnect. It is therefore important that health professionals are adequately trained to understand the combination of these factors and also the emergency services are prepared to respond to the growing demand for elderly people with increasingly complex health problems^[11]. *The proportion of the elderly and centenarians in society will continue to increase requiring health services and social changes, in order to adapt to this new reality*^[2].

Keywords: *Elderly; Health services demands; Emergency services*

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Elderly frail and risk factors

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BACKGROUND: With the population aging, new health situations arise demanding new investigations and preventive actions^[1,2]. This syndrome is often associated with adverse social and health consequences such as functional decline, frequent falls, the emergence of various pathologies, isolation, and increased number of hospitalizations. It can also lead to the institutionalization of the elderly or even to their death^[1].

OBJECTIVE: To carry out a bibliographic review on risk factors for frailty syndrome in the elderly. **METHODS:** Through the Ebsco and Pubmed database a bibliographic review was made using the following descriptors: *frail elderly* and *frailty prevention*. It was established as criteria for inclusion: articles published in English between 2014-2018, with full text and, articles being in accordance with what was intended. **RESULTS:** After analyzing the title, abstract and objectives of 123 articles we rejected 117. Also some of them, were repeated. We analyzed the full text of 6 articles, one of which was an European study with wide sampling in 10 countries^[3,4,5,6,7,8]. The following risk factors were identified: age, existence of chronic-degenerative diseases, nutritional deficiencies, sedentary lifestyle, isolation / loneliness and health self-perception as well as their limitations to make daily life activities^[3,4,5,6,7,8]. However, there are authors like Remor and Tinetti (cit by Azeredo) who suggest as main characteristics the abnormal gait, the imbalance and the frequent falls, as well as the continued use of sedatives^[1]. From the literature reviewed, we identified some non-modifiable risk factors, but there are others that we can change improving the population healthy behaviors. **CONCLUSIONS:** From the analyzed literature we can conclude that an effective health education aimed at a lifelong education for active aging can contribute to a person / group acting on modifiable risk factors, thus delaying or even preventing fragility in the old man.

Keywords: *elderly; frail elderly; Frailty: frailty risk factors*

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Violence on the elderly and health professionals

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BACKGROUND: The urbanization of rural areas, the demographic aging, and the structure family changes, among other factors, lead to an increase in the elderly living alone or with an elderly couple. This situation can be a facilitator of the existence of violence on the elderly, and therefore, health and social professionals must be attentive^[1,2].

OBJECTIVE: To analyze what the literature tells us about violence on the elderly and the role of health professionals. **METHODS:** Using as key words violence in the elderly and the role of health professionals, a research was done in Google academic, Medeline and, Psychology and Behavioral Sciences Collection, about articles published between 2014 and 2018, having found 45 articles in Portuguese and English. Of these 45, 35 were excluded because they presented only the abstract, or because, after analyzing the title and abstract, we verified that its contents did not meet the expectations. We also excluded 2 articles because they were repeated. This left 8 articles for analysis^[2,3,4,5,6,7]. **RESULTS:** From the analysis of selected articles, it is emphasized that addictive behaviors and dementias are a frequent cause of domestic violence. It also emphasizes that health professionals do not always value warning signs, but even when they suspect cases of violence, they do not always report them to the appropriate authorities, justifying that they lack adequate information and training. Also, the basis of nursing records does not always contemplate the possibility of reporting situations of violence. **CONCLUSIONS:** Due to various circumstances, the violence against the elderly is increasing, but the information that reaches health professionals is not always adequate. Also their training to detect warning signs is not enough; therefore they feel not well prepared for the detection and referral / monitoring of either the victim or the aggressor^[2].

Keywords: *Health Professionals; Violence; elderly*

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Acupuntura na Artrite Reumatóide - Correlação entre Biomarcadores Moleculares, Índice de Atividade da Doença e Mobilidade do Punho

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INTRODUÇÃO: Artrite Reumatóide, doença autoimune sistémica, caracterizada por um processo inflamatório, sinovite - atinge o revestimento interno das articulações, levando à sua erosão. A forma mais comum é poliartrite simétrica de pequenas e grandes articulações, com predomínio das articulações pequenas das mãos e pés. Pode causar limitações funcionais, dor crónica, comprometendo a capacidade laboral e a qualidade de vida^[1]. O tratamento implica, habitualmente, a combinação de terapias medicamentosas e outras não farmacológicas. É dominado pelo uso de AINES (Anti-Inflamatórios Não-Esteróides), DMARDs (Fármacos Modificadores da Doença) e analgésicos. Recentemente iniciou-se o uso de agentes biológicos – com custos mais elevados e diversos efeitos colaterais, limitando o seu uso^[2]. Vários estudos referem que a acupuntura é eficaz no alívio de sintomas de AR, contudo a evidência científica é limitada devido a considerações metodológicas. **OBJETIVOS:** Avaliar a eficácia de um programa de 10 semanas de acupuntura, em pacientes com AR diagnosticada há mais de um ano. **MÉTODOS:** Estudo experimental randomizado, prospetivo e controlado. Instrumentos Estudo: Questionário caracterização amostra/critérios ACR/EULAR 2010; Escala “SDAI”; Escala “RAPID3”; Goniómetro. Pontos Acupuntura: IC4 (Hegu); TK5 (Waiguan); F39 (Xuanzhong), R7 (Fuliu), H3 (Taichong). Pacientes que recorrem à consulta de Reumatologia do Centro Hospitalar Entre o Douro e o Vouga, EPE (CHEDV) serão distribuídos através de uma tabela de randomização

aleatória. O grupo experimental será submetido acupuntura + tratamento já instituído. O grupo controlo mantém tratamento já instituído. **RESULTADOS:** A recolha de dados decorrerá entre Maio-Julho 2019 no CHEDV. **CONCLUSÃO:** Pretende-se responder às questões de investigação delineadas inicialmente: Qual a eficácia de um programa de intervenção de acupuntura em pacientes com AR diagnosticada há mais de um ano? Quais as alterações analíticas no marcador inflamatório PCR produzidas pela acupuntura em pacientes com AR? Qual a influência da acupuntura nas funções do corpo relativas à quantidade e intensidade da dor em articulações e amplitude de movimento em pacientes com AR? A acupuntura afetará o estado funcional e fase de atividade da AR?

Keywords: *Acupuntura; artrite reumatóide; dor*

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Ocupação e imigração: Dois fatores com impacto na saúde, bem-estar e qualidade de vida de um grupo de imigrantes

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INTRODUÇÃO: Estudos acerca de imigrantes revelam que alterações socio-ambientais contribuem para a perda de controlo sobre as suas vidas^[1]. No processo de adaptação ao novo ambiente, o envolvimento e participação ocupacionais poderão estar comprometidos e influenciar o estado de saúde e bem-estar do cidadão imigrante. O indivíduo poderá retomar o controlo da sua vida e identidade através das ocupações que realiza no novo ambiente, se este proporcionar as oportunidades para tal^[1]. As barreiras à participação ocupacional abrem caminho à injustiça ocupacional, como a privação, alienação ocupacionais e marginalização^[2]. Considerando os princípios fundamentais da Terapia Ocupacional, o terapeuta ocupacional poderá ser um bom parceiro na promoção da saúde, enquanto interlocutor entre o cidadão imigrante e o ambiente que o acolhe, promovendo o seu envolvimento em rotinas e hábitos no novo contexto^[3]. Perante a atual crise dos refugiados e com a facilidade de migração dentro dos países da Europa, torna-se pertinente a monitorização dos programas de inclusão como forma de prevenção e promoção da saúde, bem-estar e qualidade de vida de todos os cidadãos imigrantes, sendo umas das recomendações da União Europeia aos seus estados membros, acerca da importância de priorizarem a monitorização da integração nomeadamente recorrendo a indicadores de quatro áreas fundamentais: emprego, educação, inclusão social e cidadania ativa^[4]. Ao longo dos últimos 20 anos têm surgido estudos acerca desta temática, mas nada realizado em Portugal, destacando-se o facto de ser um país com tradição de imigração proveniente de países de fora da Europa, oriunda das antigas colónias, mas pela sua natureza pacífica, também de outros países fora da Europa. A adaptação a um novo contexto poderá colocar em risco a participação em ocupações ou

desempenho de papéis e provocar privação ocupacional, isolamento social, desenvolvimento de patologias e gerar comportamentos de risco. **OBJETIVO:** Verificar se o envolvimento ocupacional contribui para o estado de saúde, bem estar e qualidade de vida do cidadão migrante a residir no distrito de Lisboa. **METODOLOGIA:** No estudo participaram um total de 24 indivíduos 10 mulheres e 14 homens, com idades superiores a 25 anos e a maioria tinha um nível de escolaridade universitária ou superior (n=20, 83,3%), provenientes da Europa (15), América do Sul (3), África (2) e Ásia (4). Trata-se de um estudo descritivo correlacional com recurso a instrumentos quantitativos em formato de questionário: *Checklist* de Papéis, *Checklist* de Interesses, Questionário de Qualidade de Vida da Organização Mundial de Saúde - WHOQOL e Ficha Sociodemográfica. **RESULTADOS:** O estudo realizado sugere que a maioria dos indivíduos não são provenientes de países menos desenvolvidos e assim, a maioria dos participantes desempenha os mesmos papéis no seu país de origem e atualmente em Portugal, que a maioria tem interesse e pratica atividades do seu interesse e que quanto maior a percepção de qualidade de vida menor o défice de interesses. Embora os participantes revelem uma taxa alta de empregabilidade em Portugal (95,8%, n=23), os resultados sugerem que os indivíduos praticam atualmente menos atividades do seu interesse quanto aquelas que valorizam como muito importantes para si. Este valor alerta para a importância de perceber as oportunidades ocupacionais oferecida pelo ambiente, pois a sua ausência poderá contribuir para o isolamento. **CONCLUSÃO:** Quanto maior o número de envolvimento ocupacional e de participação ocupacional, maior a qualidade de vida, bem-estar e saúde. Como limitações temos que a amostra reduzida teve grande impacto nos resultados. As entidades que oferecem serviços à comunidade de cidadãos imigrantes contactadas negaram a sua colaboração no presente estudo. Os instrumentos terem sido aplicados via digital, não permitiram ao entrevistador esclarecer e clarificar questões.

Keywords: *ocupação, imigração, saúde, bem-estar, qualidade de vida*

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Freirean Pedagogy: Important educational addition to health promotion

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BACKGROUND: By, on Nursery Graduation Course, teaching "Health Pedagogy" subject, there has been the opportunity to research about it. There has been found a scientific article, referred to the use of Freirean problem on Didactics to Nursery teaching that instigated my curiosity. So, this research refers to the investigation of scientific articles about education and health underwritten by Brasil^[1], Villard, Cyrino, Berbel^[2], among other authors. **OBJECTIVE:** Feature the contribution or not, of

Freirean Pedagogy to health promotion. **METHODS:** Literature Methasynthesis study. The research has been virtually realized, on Latin-American and Caribbean database in Health Science (Lilacs); Scientific Electronic Library Online (SCIELO), sponsored by Virtual Health Library (BVS – Biblioteca Virtual da Saúde). It has been found the frequent occurrence of the Freirean Didactics in works that are focused on health promotion mainly on Nursery area (90%), followed by Odontology professionals (5%) and Nutrition area (5%). **RESULTS:** In these studies, after searching among 38 articles, between 1990 and 2017, one article have been found that uses the didactics. By making the investigation longer, 8 more articles have been found and 7 from those 8 articles have been published in 2018 and one in 2019, in a total 20 articles searched. **Discussion:** During the investigation have been noticed how constant Freire's method was in the formation of both professionals and customers. **CONCLUSION:** It has been concluded that the use of Freire's Method was relevant to health promotion for both professionals and clients by the acquired knowledge on Culture Circles through questioning and reflexive dialogue about the current themes attached to the valuation of the human being, professional or customer. It's believed that Freire's Pedagogy is an important link between Education and Health, focused on educational formation of professionals and customers.

Keywords: *education and health, Freirean pedagogy, questioning.*

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Effects of physical activity and sports participation on indicators of psychological functioning and well-being of adolescents

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BACKGROUND: Recent studies have documented the beneficial effects of moderate to vigorous physical activity (MVPA) on different health dimensions during adolescence (e.g., [1]). However, these studies have not yet explored the possible differentiating effects of engaging in physical activity and/or sports on youths' psychological functioning and well-being. **OBJECTIVE:** Thus, the present study aims to investigate the effects of MVPA or competitive sports participation on adolescents' positive (self-esteem, life satisfaction and emotional intelligence) and negative (social anxiety) dimensions of psychological functioning and well-being. **METHODS:** A total of 1074 adolescents (57.9% girls and 42.1% boys), with ages

between 11 and 20 years ($M = 14.40$; $SD = 1.63$) and attending grades 7 to 12, volunteered to participate in this study (Study Protocol Registration N° 0395700001/MIME). MVPA levels were assessed by using the PACE+ self-report screening measure [2], while the sports participation comprised a simple response to a yes/no question. Participants also completed the Portuguese versions of the Wong and Law Emotional Intelligence Scale [3], the Rosenberg Self-Esteem Scale [4], the Social Anxiety Scale for Adolescents [5] and the Satisfaction with Life Scale [6]. Statistical analysis included descriptive statistics (percentages, mean, standard deviation, skewness and kurtosis) and Cronbach's alpha for internal consistency. The comparison of the dependent variables according to different MVPA or sports participation groups was carried out by one-way ANOVAs followed by Scheffé *post-hoc* test of significance. **RESULTS:** All latent variables showed univariate normality values within a range associated with a normal distribution (between -1.26 and 1.73) and acceptable Cronbach's alphas (> 0.70). The comparative analysis revealed that the group of adolescents who met the international recommendations for MVPA (i.e., ≥ 60 min in ≥ 5 days/week) reported better levels of self-esteem, life satisfaction, self-emotion appraisal, use and regulation of emotions, and social avoidance and distress in new situations, when compared to the remaining sample ($p < 0.05$). On the other hand, the group of youth athletes (sports participation) showed better levels of self-esteem, self-emotion appraisal, regulation of emotions and social avoidance and distress in new situations, in comparison to the non-athletes ($p < 0.05$). **CONCLUSIONS:** In summary, the results suggest that engaging in MVPA and/or participating in competitive sports promotes a better psychological functioning and well-being in adolescents, with more pronounced psychosocial benefits being observed in young people who meet the recommended MVPA guidelines.

Keywords: *physical activity, competitive sports, psychological functioning, well-being, adolescents*

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The mediating role of self-criticism in the relationship between early memories of warmth and safeness and social anxiety

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BACKGROUND: Social anxiety (SA) is characterized by clinically significant fear of the negative evaluation of others, resulting in high anxiety or avoidance in social situations^[1]. Early critical, dismissive or negligent experiences with parents and peers have been associated with SA^[2]. Early memories of warmth and safeness (EMWS)^[3] have been negatively associated with self-criticism (a self-to-self relationship in which one part of the self criticises another part for mistakes and failures)^[4]. Self-

criticism and SA are also strongly associated^[5]. However, to the best of our knowledge, no studies have yet established the relationship between EMWS, self-criticism and SA. **OBJECTIVES:** This study explored if SA could be predicted by EMWS with parents and peers, and if self-criticism would mediate this relationship, in college students. **METHOD:** The sample included 766 Portuguese university students of 14 different courses from all over the country (63.8% females; $Age=20,46$; $SD=3,717$). Self-report scales measuring EMWS with parents and peers, self-criticism and SA were filled. **RESULTS:** EMWS with parents and with peers was negatively associated with self-criticism ($r=-.31$; $r=-.36$) and with SA ($r=-.22$; $r=-.32$). Self-criticism and SA were positively associated ($r=.52$). Furthermore, despite the fact that both EMWS predicted SA, EMWS with peers had a greater predictive effect (EMWS parents: $c1: \beta=-.12***$; EMWS peers: $c2: \beta=-.28***$). Self-criticism fully mediated the relationship between EMWS with parents and SA ($c1: \beta=-.12***$; $c'1: \beta=-.03$), but partially mediated the relationship between EMWS with peers and SA ($c2: \beta=-.28***$; $c'2: \beta=-.14***$). **CONCLUSIONS:** The results of the present study highlight the importance of EMWS on levels of self-criticism and SA. Although both memories have an important role on SA, the results showed that EMWS with peers seem to be a best predictor of SA than EMWS with parents, underlining the particular importance of the experiences with peers for the future development of social anxiety. Thus, promoting positive experiences with peers during childhood should be a concern. Furthermore, self-criticism proved to be an important mediator in the relationship between EMWS (with peers and parents) and SA, highlighting that the impact of low EMWS is transmitted to SA (partially or totally) through self-criticism. This result emphasizes the importance of focusing social anxiety disorder intervention on reducing self-criticism and increasing self-compassion (a different self-to self- relationship in which one is self-kind and self-supportive even, and particularly, in face of failures).

Keywords: *self-criticism; early memories of warmth and safeness, social anxiety.*

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Babywalker and Age of Autonomous Sitting and Walking in Portuguese Infants: An Exploratory Study

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BACKGROUND: Approximately 50% of infants use babywalkers, with a median duration of use of 6.5 months^[1]. The use of babywalkers has been associated with delay in crawling^[2], with no significant differences in achieving independent walking compared with non-users^[3]. Sitting alone is not associated with the use of babywalker^[1]. Although the importance of the theme, more recent studies were not found, and no studies with Portuguese infants are known. **OBJECTIVE:** The purpose of this retrospective exploratory study was to verify if infants that used babywalker (N = 8) gain advantage compared to infants who didn't use any instrument for learning to walk (N = 12). **METHODS:** Data were obtained through a questionnaire, with closed leading and dichotomous questions, relative to ages of milestones occurrence, time of beginning and duration of babywalker use, if it was the case, and were filled by the parents. Informed consent was obtained. Due to sample, size effect size (r) and Mann-Whitney Glass rank-biserial correlation (r_{rb}) were estimated. **RESULTS:** Our babywalker users tended to start autonomously seat earlier than non-users (6.38 ± 1.06 months, M = 6.5 months, and 7.73 ± 1.84 months, M = 8 months, respectively) (z = 1.866, p = .056, r = .43, r_{rb} = .50); but, no difference is found in starting to walk autonomously (12.0 ± 2.42 months, M = 12 months, and 12.64 ± 2.42 months, M = 12 months, respectively) (z = .669, p = .504, r = .15, r_{rb} = .17). No significant association was found between autonomous seat and autonomous walk in babywalker infants (rho = .091, p = .830), contrary to non-babywalker infants were a positive association occurred (rho = .628, p = .039). By sample and milestone, no significant differences were found between gender (non-users: seat- z = 1.152, p = .229; walk- z = .329, p = .742; users: seat- z = .773, p = .439; walk- z = .470, p = .638). **CONCLUSIONS:** Results are in accordance with previous studies, babywalker doesn't ensure anticipated time of walking alone, probably due to absence of affordable interaction between sensory-perceptual information and motor action^[4]; and seems to disrupt the normal process of temporal successive surging of motor milestones in infancy. However, an enlarged sample is required to verify this hypothesis. According to these preliminary results and previous studies, babywalkers should be discouraged and replaced by functional stimulation of motor behaviors, like stepping reflex^[5].

Keywords: motor milestones, babywalkers, infants

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Overcoming barriers in cancer communication - engaging patients and health professionals for an effective interaction

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BACKGROUND: The interaction between doctors and patients has been a widely studied subject since it is a vital part of the clinical practice. The frequent communication gap between health professionals and patients is highly detrimental for disease outcome. Limited communication skills of healthcare professionals and reduced health literacy of patients, conditions the context of health information exchange. A comprehensive approach, addressing the interaction between the actors of such communication framework is currently recognized as the cornerstone to improve health outcomes^[1,2]. In cancer settings, the communication is even more critical, due to the economic and social burden of the disease. Indeed, communication should be a core skill for health professionals, to facilitate the exchange of information with patients^[3,4]. The learning of such information is intrinsically connected to patients' capacity to read/listen and understand (thus, to interpret) the message transmitted, being this competence dependent of patient's literacy, essential for any communication process. Low cancer literacy could have a serious impact on patients' quality of life and that can only be improved by tailored educational contents collaboratively produced by communication researchers and health professionals^[5].

OBJECTIVE: This research aims to characterize and optimize the communication model between healthcare professionals and patients/caregivers in a cancer care facility. **METHODS:** As an action research project, it integrates a quasi-experimental study in order to characterize the existing communication framework as well as profiling the health professionals' communication skills and the patients and caregivers' cancer literacy levels. Data will be collected in the hospital using surveys and focus-groups interviews will determine the requirements for a new integrative approach encompassing the development and implementation of tailored and targeted training programs for health professionals and tools for effective communication with patients and caregivers. **RESULTS:** This is an ongoing research so final results are not yet available. **CONCLUSIONS:** It is expected that this research will contribute towards the improvement of communication between cancer patients and health care providers, increasing patients' cancer literacy and developing health professionals' communication skills that consequently will positively impact the health outcomes.

Keywords: Cancer literacy; Health Communication; Cancer Literacy; Patient Education; Patient-Centered Communication

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The Practices and Motivations for Performing Water Aerobics

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BACKGROUND: Recently, there has been a significant increase in research regarding the practice of physical exercise in aquatic context^[1]. Within this recognition that aquatic programs having gained, water aerobics is one of the most accepted by the scientific community^[2,3,4]. **OBJECTIVE:** Therefore, the main purpose of this study was to characterize the habits and motivations of the Portuguese for the practice of water aerobics. **METHODS:** For this, a questionnaire was applied to Portuguese swimming pool users and water aerobics practitioners. The questions were focused on the characterization of the habits to perform water aerobics and their main motivations. **RESULTS:** The questionnaire was filled by 188 subjects of both genders (65% female and 35% male), with age between 19 and 88 years-old. Main data showed that the majority completed higher education courses (29%), while only about 6% did not present any qualifications. It was noticed that there was a predominance of water aerobics for more than 2 years (73%), twice a week (78%). The subjects considered the main motivations for practice this activity, health improvement (71%) and improvement of physical condition (19%). Only 3% of the subjects practice water aerobics to relief stress and to socialize with others. **CONCLUSIONS:** Overall, it was verified that aquatic aerobics practitioners are committed to this exercise activity, practicing for more than 2 years, aiming to perform this aquatic activity mainly by parameters related to health and improvement of physical condition. Future research appears to be necessary to better understand what motivates people to practice these types of aquatic activities, in order to improve the pools supply, through the creation of strategies that encourage the practice of these activities according to the preferences of their users.

Keywords: *Water aerobics, In-water activities, Questionnaire.*

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Kinesio Tape improves balance and functional mobility in older adults

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BACKGROUND: The reduction of balance and functional mobility in older adults increases the risk of falls that may cause harmful consequences, representing a heavy burden from the socio-economic point of view^[1,2]. The muscular component, as well as the fascia, must be prepared for a better performance in motor tasks, so that the tape application of Kinesio Tape (KT) appears as a coadjuvant method for physiotherapists intervention, since it presents positive results in muscle endurance, proprioception and postural control^[3,4]. **OBJECTIVE:** The present quasi-experimental study aimed to analyze the effect of KT on balance and functional mobility through the activation of the Anterior Tibial and Peroneus muscles in healthy older adults. **METHODS:** It consisted of a sample of 28 participants, 12 men and 16 women, randomized in two groups: a control group (n=13, 78,2 ± 9,6 years) and a group receiving KT (n=15; 78,6 ± 6,0). Functional mobility and balance were assessed before and 48 hours after the KT application using the Time-up & Go Test (TUG) and the Berg Balance Scale (BBS), respectively. **RESULTS:** In the KT group, the KT was applied on the anterior tibial and the peroneus muscles on both lower limbs. There were no differences between the groups regarding age, weight, height, body mass index, and TUG (13,4 ± 6,4 vs 13,1±6,6) and BBS (43,7 ± 12,0 vs 44,2 ± 6,7) at baseline. There was a significant improvement on the TUG (13,1 ± 6,6 to 11,6 ± 5,5, p<0,05) and BBS (44,2 ± 6,7 to 46,2 ± 7,0, p<0,05) in the KT group after de KT application. **CONCLUSIONS:** These results revealed that the balance and functional mobility in the elderly can improve significantly with the application of KT. Thus, it seems that the use of KT may be a useful tool to reduce the risk of falls in this age group.

Keywords: *elderly, falls, functional mobility, Kinesio Tape*

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Evaluate the pain of critically ill patients unable to verbalize through two behavioral scales (BPS e CPOT) Marques, R¹, Araújo, F², Freitas, J³, Fernandes, M⁴

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BACKGROUND: The American Association of Critical-Care Nurses mentions that critically ill patients experience pain throughout their hospitalization. More than 30% of ICU patients feel pain when resting, while more than 50% feel pain during routine care procedures. The pain experienced by ICU patients is also aggravated by the fact that they have difficulties to verbalize it. Pain is mostly manifested through vocalizations, movements and mobility, facial expressions, mood or behaviors^[1-3]. Pain assessment should be performed systematically through instruments based on behavioral indicators, namely the Behavioral Pain Scale (BPS)-facial expression, upper limb movements and adaptation to the ventilator; or the Critical-Care Pain Observation (CPOT)-facial expression, body movements or adaptation to the ventilator by orotracheally intubated patients (EOT), or even the sound made by extubated patients which allow the implementation of strategies of relief and control of the pain^[4]. **OBJECTIVE:** To identify the proper scale to use, BPS or CPOT, to assess the pain in EOT patients at ICU. **METHODS:** We performed a systematic review of the literature, according to the Joanna Briggs Institute's guidelines, in the following databases: MEDLINE, CINAHL and Cochrane Central Register of Controlled Trials. The search was executed using, as main descriptors, "behavioral pain scale" and "critical care pain observation tool", with the boolean operator "and", in Portuguese, English, Italian and Spanish. We considered the period between January 2012 and December 2018 and obtained 149 results. Selection criteria were defined and applied according to the PICO methodology: Participants (Hospitalized patients over 18 years of age), Point of Interest (Pain Assessment Scales - BPS and CPOT) and Context (ICU). From these, we selected five final full-text articles for extraction and analysis, which met the required inclusion criteria. Two independent reviewers carried out the critical evaluation, extraction and synthesis of the data. **RESULTS:** The five selected articles revealed that the BPS and the CPOT are considered the most appropriate scales for pain assessment in critically ill patients who are incapable of verbalizing. While the BPS should only be used in ventilated patients, the CPOT can be used in both ventilated and non-ventilated patients^[1-5]. **CONCLUSIONS:** There is no statistically significant evidence of one scale over the other, both of which are adequate for the assessment of pain in EOT patients hospitalized in ICU. However, both have limitations when applied at specific populations like trauma, burnt or neurological patients. We suggest more experimental studies on specific populations.

Keywords: *Evaluation; Pain; Critical patient; Behavioral Pain Scale; Critical-Care Pain Observation.*

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Depression in institutionalized elderly people Azeredo, Z.¹; Guerra, M.²; Laranjeira, C.³

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BACKGROUND: The prevalence of depression in the elderly is higher than in the general population, and even more, when we speak of institutionalized elderly people^[1,2]. **OBJECTIVE:** To study the frequency of depression in institutionalized elderly people. **METHODS:** Using the Yeasavage-15 geriatric depression scale, the authors surveyed 112 elderly people (aged 65 or over) living in four households in the municipality of Viseu, who agreed to cooperate and had physical and / or psychic conditions to do so. **RESULTS:** The majority (64.3%) of the participants, were female. 44.6% have 85 years old or over; 35.7% had between 75-84 and 19.6% between 65-74 years. 46.7% did not present depression; 37.5% had moderate depression and 9.8% had severe depression. The highest percentage (46.7%) of those suffering from moderate depression was in the group of 85 or more years and in the female sex (80%). The age group with the highest percentage (56.4%) had severe depression: it was 85 years or older and in this group the male sex (72.7%). **CONCLUSIONS:** A high percentage was observed without depression (higher in females 58.9%); only 9.8% suffered from severe depression (greater in men 72.7%). Although the percentage of moderate to severe depressions is not high, there is a need for intervention to improve the well-being of the institutionalized elderly, and to know the underlying causes. The scale used allows a quick diagnosis that in the depressed must be complemented with a small questionnaire to study its etiology and schedule an intervention^[3].

Keywords: *Elderly; Depression; Nursing home*

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Elderly loneliness from the perspective of health students

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BACKGROUND: Loneliness is an unpleasant feeling in which the person feels lonely even though surrounded by people^[1,2]. It may occur at any age but is quite frequent in the older age groups^[1]. Although not always expressed, this feeling can cause discomfort, frailty and illness/ diseases in elderly^[3]. Also, the health professionals have some difficulty to perceive these kinds of feelings. It is the reasons why is important to alert the health students to its existence and let them to think about health and social problems, getting skills to understand the elderly and to act in practice preventing not only the loneliness, but also solving health problems^[4]. **OBJECTIVE:** To know how health students perceive loneliness in the elderly. **METHODS:** Using a convenience sample, Nursing and Physical Therapy students were asked to complete a survey of open and closed questions in the open questions was made content analysis. **RESULTS:** 44 students of both sexes were surveyed. Mean age 23.1 years. They identified as the main causes of loneliness: family abandonment, ingratitude of the children, death of the spouse or a loved one, lack of patience of relatives, lack of social framework, passivity of society, devaluation of the elderly by family / or by society, lack of occupation, physical and economic constraints, and proximity to death. Some measures against the elderly loneliness were mentioned: living with relatives; Occupation / activities and part-time jobs; existence of adequate nursing homes and social centers (day centers); mass media programs for the elderly; socio-cultural animation programs; respect and appreciation of the elderly; better integration in society and their participation in the community; self-help groups that also involved the old persons. **CONCLUSIONS:** The participants emphasized the closed family relations as an important factor against loneliness, but they don't neglect the role of society and the mass media as well. They also emphasize the need for occupation and leisure activities. The students propose self-help groups also involving old people, and through them to facilitate the intergenerational coexistence and a better understanding of the dimension of the elderly health/social problems. It is interesting to know that this suggestion come from young people!

Keywords: *Elderly; Loneliness; Health students*

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Growing together Project

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BACKGROUND: The concept of intergenerationality is very broad and concerns both the elderly and children or young people, and can occur in relationships between other actors of different generations. This sharing enables older people to feel socially included and valued, while at the same time bringing young people closer to an education based on values different from those we currently see^[1,2,3,4]. The intergenerational transmission of knowledge and skills enables a dynamic and reciprocal process of learning, promoting respect and understanding between generations^[5]. The pertinence of this study is related to the fact that currently, we attend, in schools, complex relational processes and indicators of aggressiveness and malaise. On the other hand, due to the demands of everyday life, there are processes of parenting involved in "counted time", and old abandoned or ill treated. **OBJECTIVES:** The general objectives of this project are: a) To increase knowledge about active aging in a school context; b) To know the benefits of participation of children / youth and the elderly in intergenerational activities; c) Identify what distances or approximates the new generations; d) Identify the motivations, expectations and learning that arise in the participation in intergenerational activities. **METHODS:** The approach strategy comprises different phases. In the first phase, a knowledge of the population is made, through the observation and interview, to, with the data obtained structure, The project involves 5 centers / day centers and 4 preschool / partner schools of the same, having approximately 120 elderly, 105 young people and 18 professionals, and 10 workshops were built. In a second phase, interventions through workshops that, according to needs, promote health literacy training as well as active aging and intergenerational interaction. In this phase six workshops were built. **RESULTS:** The results show that in these intergenerational encounters, all ages obtain profits in terms of learning and relationship. With regard to the elderly, it was noticed that they relate more easily to the young, but it is with preschool children that they establish greater affective bonds. **CONCLUSION:** Participation in these activities proved to be important for the children and young people because of the knowledge they gained through the testimony of their elders, while for the elderly they allowed the contagion of an "invigorating energy". In all the ages involved it was noticed that each individual needs an environment that motivates him to develop a dialogue in a climate of respect taking into account his interests and their limitations, limitations that are not only observed in the elderly.

Keywords: *Intergenerationality; Active aging; Lifelong learning; School Health*

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SLEEP Project

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BACKGROUND: Sleep habits play a fundamental role throughout the developmental process, emotional state and functionality in the different domains of the child's life. In recent years we have witnessed a growing interest in this subject, arising in a set of studies on sleep in childhood centered on child and parental perception and the beliefs underlying sleep and falling asleep^[1]. **OBJECTIVES:** The general objectives of the study were: a) to know the sleep habits of pre-school children in a grouping of schools in Santa Maria da Feira; b) Identify, develop and stimulate strategies that promote structured and sustained sleep habits. **METHODS:** The work in development comprises Three phases: The first one that took place at the beginning of the school year, was characterized by a diagnosis of the situation with the application of the questionnaire: Children Sleep Habits Questionnaire (CSHQ) - applied to the Education, a total of 101 respondents^[4,5]. The second phase was characterized by the identification, development and dynamization of strategies that promote structured and sustained sleep habits in children of JI. The target population of our direct intervention has a range of ages [3-6] years, a total sleep time of about 9 hours, with three identified sleep disturbances (sleep duration, parasomnias and daytime sleepiness). In the third phase an evaluation of the interventions was carried out. **RESULTS:** In relation to sleep habits, intervention needs were identified in three moments of sleep habits: a) At bedtime (bedtime, fear of the dark, time to fall asleep, resistance to bed ...) b) Behavior during sleep (sleep a lot, restless sleep, nightmares, difficulty falling asleep at night ...), and c) In the morning and during the day (difficulty in waking up, drowsiness during the day ...). From the data obtained, a community intervention plan was designed to reduce the impact these needs may have on the lives of these children, as well as on family dynamics. **CONCLUSIONS:** The data obtained reveal the importance of a greater emphasis on the theme of infant sleep, as well as a greater need for parental monitoring and involvement in sleep and sleeping habits. In fact, teachers, nursery teachers and nurses can assist in adopting healthy sleep practices, fostering structured routines, and following up on sleep and sleeping situations would be important measures to develop within each family. Based on the foregoing, it is fundamental to sensitize and train these professional groups to identify, develop and stimulate strategies that promote structured and sustained sleep habits.

KEYWORDS: *Infant sleep, sleep habits, communitarian nurse, familiar dynamics, sleep rhythms*

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Falls in the elderly and their prevention

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BACKGROUND: It is estimated that about 30% of the elderly fall at least once a year and about 15% two or more times a year, often with consequences, some of them quite serious. The elderly institutionalized by their fragility present more risks of falls than the elderly in the community^[1,2]. While the physical consequences are easily identified, their psycho-social impact is less well known and reported by the elderly who may already have some dementia and other morbidities^[3]. **OBJECTIVE:** To reflect on risk factors for falls and their prevention in the elderly. **METHODS:** Through a non-systematic literature review, risk factors for elderly falls were identified. Subsequently, a multidisciplinary and multiprofessional team jointly carried out a reflexive analysis of the data obtained in the literature review, as well as some of the preventive actions that should be put into practice. **RESULTS:** The falls always have a multi-causality, combining intrinsic and extrinsic factors, in which the age, the state of health / fragility of the individual, and the environment play an essential role^[4,5]. According to Moraes et al^[2] and Miranda^[5], gait alterations, maintenance of posture and muscle strength are implicated in the frequency of falls, often leading to dependence and loss of autonomy. They are also the 6th cause of accidental deaths in the elderly and are responsible for 70% of accidental deaths in the elderly with 75 years or over^[1]. The loss of balance, the muscle mass deficit, osteo-articular problems, as well as depression and polymedication are intrinsic factors. Some of these factors can be prevent with physical activity since earlier age and leisure and conviviality. In later age the Physiotherapy can play a fundamental role, accompanied by a clinical assessment made continuously by a multidisciplinary team. It is also important to study the extrinsic factors and their implications in the fall, as well as investigate the pre-event circumstances (anamnesis) such as lipotimias, loss of consciousness, etc.) The psycho-social impact of previous falls is also very important to avoid fears. Physical barriers, housing condition also are constrains and/or factors which contribute to the incidence of elderly falls and to immobility. **CONCLUSIONS:** Falls are an important factor of morbidity, incapacity, elderly institutionalization or death. In many cases, the falls can be prevent, with the intervention of a multidisciplinary team, either acting on intrinsic factors or acting on the extrinsic factors or acting either in a transversal and longitudinal ways.

Keywords: *Falls; Elderly; Prevention of elderly Falls*

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Alzheimer's Disease in the light of nowadays knowledge Oliveira, A.¹, Ramos, M.², Rodrigues, I.³

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BACKGROUND: Alzheimer's is a neurodegenerative disease that destroys brain cells in a slow and progressive way, impairing people's ability to control emotions, recognize mistakes and patterns, coordinate movements and have memories. This disease affects about 50 to 70% of the population with dementia, being more common in people over 65 years, however, this disease may appear earlier^[1]. **OBJECTIVE:** In an age when technologies prevail, information changes every second and studies are constantly carried out in order to keep this information as current as possible, it has proved opportune to evaluate the existing knowledge about one of the pathologies of the century - Alzheimer's Disease - and how Psychomotricity can intervene to mitigate the effects of this pathology on people's lives. **METHODS:** In this study, conducted in 2018, we used a quantitative methodology and used a questionnaire to collect data. The questionnaire was prepared by the authors of the study and later validated. This being composed of ten questions: 2 open responses, 8 multiple choices. The sample consisted of 30 individuals, ranging from eighteen to eighty-one years old, from northern and central Portugal, with 24 females, 6 males. This study also involved the preparation of a proposal for an intervention plan to stimulate the group involved. We verified that the existing knowledge among the individuals is discrepant, being the age one of the factors to condition this same knowledge. **RESULTS:** We can also observe that the level of knowledge regarding this disease is low, only 40% correctly answered some questions. **CONCLUSIONS:** Therefore, it is necessary to call for better education of the population in general, taking into account that we are all subject to contact with this pathology so that this same contact can be facilitated by a precise and correct knowledge of the disease.

Keywords: Alzheimer, psychometrician, disease

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Education and promotion for health - a Diabetes case study

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BACKGROUND: Diabetes Mellitus is considered to be one of the most epidemic diseases in the world today and one of the main public health problems of the 21st Century. According to the World Health Organization (WHO), this will be the 7th leading cause of death in the year 2030. Even after all the therapeutic advances and knowledge of non-pharmacological measures of enormous importance to "halt" the progress of this disease, Diabetes does not stop increasing, reason why is predicted a greater increase in poorer and developing countries due to the way of life practiced, that has approached the sedentary lifestyle and an inadequate diet^[1]. **OBJECTIVE:** This study integrates a broader investigation in the field of Health Education and Promotion and its main objectives are to identify the knowledge of a group of individuals about Diabetes. **METHODS:** For the preparation of this study, a quantitative research methodology was adopted, using descriptive statistics to treat the results obtained. This study had two phases, so a small questionnaire was developed, validated and applied to a sample of 60 individuals from two distinct populations in the north of the country (Lamego and Castelo de Paiva). The questionnaire included 11 questions 6 multiple choice and 5 short answers. The sample consisted of 30 adolescents (between the ages of 15 and 20 years) and 30 elderly (49 to 93 years of age), 20 males and 40 females. In a second phase, an intervention plan was built, as future psychometricists, aimed at individuals in a situation similar to those surveyed. **RESULTS and CONCLUSIONS:** We conclude with this study that 76.7% of the elderly in the sample are carriers of this pathology. Regarding the knowledge demonstrated, we found that both age groups is reasonable regarding the pathology under study, however, 28.6% of the elderly population, more affected, manifests many gaps.

Keywords: Diabetes, Young adults, psychometrician

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School Health Education - a study on knowledge about Cerebral Palsy

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BACKGROUND: Health Education aims to help the population to improve their health, by increasing knowledge or influencing their attitudes, in order to actively take responsibility for the individual himself in the promotion of his health. It should be noted that this is not a universal definition; however, all current definitions emphasize the active role of each individual in their own health^[1]. In this way, we consider it opportune, in a world in constant development, to identify the degree of knowledge of the current teachers and in training on the problem of Cerebral Palsy

(CP). It is fundamental to try to understand if future professionals are or are not better able to deal with children with this pathology, this is because, in recent decades, there has been an increase in the number of cases. We think that more qualified teachers can stimulate activities that enhance the development of competencies that better promote healthy lifestyles^[2]. **OBJECTIVE:** The research question was "What is the degree of knowledge about Cerebral Palsy of current teachers and staff compared to future professionals?" **METHODS:** For the accomplishment of this study, we used a quantitative methodology and we used a questionnaire for the data collection. The instrument was prepared by the authors of the study and validated by 2 specialists in the area of Health Education and by a set of 6 teachers. It addresses six multiple-choice questions and one short answer about PC-related knowledge and behaviors. The sample was deliberate and included forty individuals, twenty of whom are current teachers of a basic school in the north of the country and the remaining twenty, students of the third year of the Basic Education degree from UTAD. Applying descriptive statistics for data processing. The data collection was used during the month of November 2019. **RESULTS:** After analyzing the results, we verified that the future teachers revealed to have more knowledge about manifestations, sequels and possible treatments of CP. **CONCLUSIONS:** We consider that it is important to approach and discuss these issues in the context of initial teacher training and also to carry out on-going training by practicing professionals.

Keywords: *Cerebral palsy, knowledge, teachers, school*

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The definitive healing of fears through the Radionics Crystals

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BACKGROUND: Through a theoretical and practical presentation, I will present the Radionic Crystals and explore their various therapeutic possibilities, giving emphasis to the definite cure of the fears. The Radionic Crystals were created in 2008 by the Acupuncturist and Dowser, Prof. Raul Breves, and are considered by many, the most important world discovery in the field of acupuncture^[1,3]. **OBJECTIVES:** Through the Radionic Crystals we treat countless pathologies, be they of physical or emotional origin and we are able to eliminate specific fears in few minutes, no matter how long the person suffers from fear or if he has been doing treatments for years to get rid of it^[1,2]. **METHODS:** They are small glass spheres, similar to those used in Auriculotherapy, with the difference that they are programmed with a powerful energy that immediately changes the mental pattern and the energy of the point or region where they are placed^[2]. The application is totally painless and the results are incredibly fast. Its programming is entirely based on Chinese Medicine, which also allows us to use them to replace needles in the vast majority of acupuncture treatments, facilitating and enhancing the results of the treatments performed^[3,4]. **RESULTS:** The results are immediate! There is a physical and emotional unlocking with the placement of the crystals at the

points of the systemic acupuncture and / or in the microsystem of the ear, with the decrease and / or elimination of the symptoms. **CONCLUSION:** An indispensable tool for Acupuncturists and health professionals all over the world.

Keywords: *Radionics Crystals, specific fears.*

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Health promoting schools: the perception of parents

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BACKGROUND: All basic and secondary schools in Portugal are Health Promoting Schools (HPS)^[1], that is, they implement a structured and systematized plan to improve the health of all students and of teaching and non-teaching staff^[2]. The HPS have six fundamental pillars: i) healthy school policies; ii) the physical environment; iii) the social environment; iv) individual health skills and competencies for action; (v) the connection to community; and vi) health services^[3]. **OBJECTIVE:** This study is focused on the connection to community, particularly in the relationship between school and the students' families. The purpose of this study is to answer the following questions: (i) what perception do parents have of their children's schools? (ii) What do they think about health education in schools? **METHODS:** The non-probability convenience sample consisted of parents of 9th grade students from nine school clusters of Braga, a total of 455 participants of both sexes, predominantly female (79.8%), with an average (SD) of 44.2 (5.57) years. Data was gathered using a questionnaire and submitted to descriptive statistical analysis using the SPSS, using a significance level of 0.05. **RESULTS:** The majority (99.8%) of parents consider health promotion and education in school important as well as their participation (87.5%) and students' participation (94.9%) in the health education teams of school clusters. Participants (81.0%) agree that school implements measures which promote health and well-being for all, except for sanitary facilities, where 52.2% disagree on the cleanliness and availability of toilet paper and soap. Most of the parents (79.1%) consider that school fosters knowledge on health through various activities, allowing students to know how to choose / adopt healthy lifestyles. The contents covered in the different subjects help students learn how to be healthy (84.4%). **CONCLUSIONS:** In conclusion, this study shows that parents consider health promotion and education in schools important as well as their participation and students' participation in the health education teams of school clusters. It also shows that parents consider their children's schools as HPS.

Keywords: *Parents, Health promotion, Health Education, School*

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Evaluation of the implementation of the Tobacco Control Program in workers' health: evidence from an oil industry in Bahia, Brazil

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BACKGROUND: Smoking is a risk factor in the development of chronic diseases, leading the preventable causes of death in the world^[1,2]. Workplaces have advantages for the implementation of health programs, including those for control and cessation of tobacco use in relation to non-work environments^[3].

OBJECTIVE: This study aims to evaluate the first results of the implementation of Tobacco Control Program (TCP) to combat smoking habits in a population of workers in oil industry, Bahia, Brazil. **METHODS:** This is a retrospective longitudinal study from 2006 to 2015 and data were collected in the electronic medical record of company's occupational service and had, on average, the participation of 1736 individuals, starting with 1752 in 2006 and ending with 1460 in 2015. Despite the population fluctuation the difference is not statistically significant ($p > 0.05$). Since 2007 the smokers were invited to participate in the TCP of the company, based on methodology recommended by the Brazilian National Cancer Institute, including educational actions, environmental control and interdisciplinary assistance focusing on prevention and damage reduction. Data analysis was performed using the IBM® SPSS® Statistics vs.24.0, considering a level of significance of 0.05 for all statistical inference situations. After evaluating the normality of the variables, the Student's *t*-test was applied to paired samples. In all the years of the study, Brazilian men, married, aged between 51 and 60 years old, in administrative work regime, residents in the state capital and with full secondary schooling, prevailed. **RESULTS:** In 2006, the percentage of smokers in the institution was 8.6% and in 2015 of 3.9%. Despite the population fluctuation the difference is not statistically significant ($p < 0.05$). The nurses realized appointments to assess the history of smoking, habits associated with smoking, and application of the Fagerstrom Nicotine Dependence Test^[4]. Although Brazilian studies show different rates of abandonment in therapeutic programs, these rates were close to 50% or above, i.e., it was observed that the interventions had some effect on the population submitted to these actions^[5]. **CONCLUSIONS:** In conclusion, the first evaluation of the TCP in the oil industry reveals that the investment in interdisciplinary programs in the workplace has positive effects on the health of the workers involved, namely in the development of healthy practices and lifestyles that, together, contribute to the well-being

of the workers. In addition to the positive change that these results highlight, they also play an important role in motivation of the workers not involved in the program to participate in future similar actions.

Keywords: *tobacco, oil industry, workers' health, well-being*

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Effects of aquatic and non-aquatic environments on motor development in healthy infants

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BACKGROUND: Swimming benefits in motor development, gross and fine motor, cognition and socialization in infants have been showed^[1]. However, some studies also report contradictory results. **OBJECTIVE:** The aim of this study was to investigate whether babies participating in swimming classes might improve motor developmental status more quickly than babies who attend nurseries. **METHODS:** A quasi-experimental study has been performed on a sample of 10 full-term healthy infants, ages six to nine month. Two groups were constituted: swimming group (SG; n=4) constituted by infants who stay at home and attend swimming classes once a week and, a nursery group (NG; n=6) constituted by infants who attend a nursery school every day. Parent's and babies data were collected by questionnaire. *Alberta Infant Motor Scale* was used to measure motor development in two different moments: initial (M1) and after 6 months (M2). Numerical data were compared using the paired Wilcoxon test within groups or the Mann-Whitney U test between groups. Significance level was set at $p < 0.05$. **RESULTS:** At M1 50% of infants from NG and 75% from SG presented lower motor development and suspicion of motor development delay, respectively. Only 25% of SG and 16.7% of NG infants presented motor development appropriate for their age. From M1 to M2, motor development improved significantly only in NG ($p < 0.05$). The NG displayed better outcomes in all positions (prone ($p = 0.026$), supine ($p = 0.024$), sitting ($p = 0.039$) and standing ($p = 0.027$); no significant effects was observed in the SG in none of the positions ($p > 0.05$). **Discussion:** Motor skills are influenced

by interaction between life experiences and the environment in which these occur. Theoretically, it is possible that changing the training environment from non-aquatic to aquatic, may enhance the infant's capabilities, improve existing skills and/or introduce new ones^[2]. Contrary to this theory, the results obtained in the present study, suggest that both aquatic and non-aquatic environments improve motor skills. These results could be due to two factors: first, the small sample size limited the power of the study and prevents further sub analyses controlling for potential confounders such as parents academic qualifications^[3]. Second, we are aware of the potential differences on motor development between groups at M1 and infants were not random allocated. **CONCLUSION:** Both interventions may help to improve early motor skills, extending the different levels of motor and sensory stimulation for infants.

Keywords: *motor development, nursery, swimming, babies*

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Impacto da síndrome de fragilidade no idoso: revisão integrativa da literatura

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INTRODUÇÃO: O envelhecimento pode ser entendido como um processo dinâmico e progressivo, em que há modificações morfológicas, funcionais, bioquímicas e psicológicas, com perda progressiva da capacidade de adaptação do indivíduo ao meio ambiente. Segundo Lourenço et al.^[1], 10 a 25% da população idosa é portadora de determinadas condições clínicas que os colocam em categorias de fragilidade. Assim, o idoso frágil deve ser uma prioridade para as instituições de saúde, pois requer cuidados diferenciados e um adequado suporte familiar e social. Pelo que, o profissional de saúde deve ser capaz de realizar uma adequada avaliação, prevenindo o desenvolvimento e agravamento da fragilidade^[2]. **OBJETIVO:** A presente revisão integrativa da literatura procura dar resposta á seguinte questão de investigação: Que resultados se obtêm do impacto da síndrome de fragilidade no idoso por via das intervenções de enfermagem? **MÉTODO:** Foram incluídos 8 estudos a partir da pesquisa em bases de dados eletrónicas (*Medline; Psychology and Behavioral Sciences Collection*), cujos critérios de inclusão foram: data de publicação entre 2013 a 2018, estudos apresentados na íntegra (*full text*), idioma em Português, Inglês e Espanhol e faixa etária igual ou superior a 65 anos. Tiveram-se como critérios de exclusão: Dissertações, Teses e Revisões Sistemáticas, estudos relacionados com crianças, faixa etária inferior a 65 anos. **RESULTADOS:** Identificou-se que idosos frágeis apresentam

maior dependência nas atividades de vida diária sendo que as mulheres são consideradas as mais frágeis em comparação aos homens. Constatou-se ainda que os idosos com doença cardíaca têm mais probabilidade de ter fragilidade quando comparados outros sujeitos. Para promover a prática clínica adequada ao idoso fragilizado, o enfermeiro deve ser conhecedor do processo de envelhecimento, estar atualizado em relação à evidência científica sobre a fragilidade, deve estar atento para possibilidade de prevenção a partir da realização de uma avaliação global e multidimensional, identificando as necessidades reais e potenciais a fim de prover encaminhamentos para a equipa multidisciplinar. Existem diferentes instrumentos utilizados pelos profissionais da saúde para rastrear a condição de fragilidade no idoso, tanto no âmbito da investigação, como na prática clínica, com destaque para a Escala de Fragilidade de Edmonton^[3]. **CONCLUSÕES:** Com a presente revisão em análise foi possível identificar vários domínios de intervenções de enfermagem para a prevenção do idoso frágil, nomeadamente através da: estimulação cognitiva, promoção da independência funcional, implementação de estratégias promotoras de auto-estima, valorização da imagem corporal, educação terapêutica e visitação domiciliária.

Keywords: *Síndrome de fragilidade; fatores de risco; intervenções de enfermagem; envelhecimento*

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Terapia da dignidade em doentes em fim de vida: revisão integrativa

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INTRODUÇÃO: O sofrimento apresentado por um doente em fim de vida, é de alguma forma tipificado pela perda da dignidade. Deste modo a “terapia da dignidade” e o seu reconhecimento, têm-se revelado importantes na arte de cuidar, tanto para os profissionais como para os próprios doentes. Trata-se de uma intervenção psicoterapêutica composta por um conjunto de sessões que permitem aos doentes refletirem sobre questões individuais que considerem importantes, compartilhar momentos importantes e significativos, tendo em vista a construção de um documento designado de “legado final”, destinado a que o indivíduo se sinta valorizado e que sinta que deixa algo de si para os outros após a sua morte^[1]. **OBJETIVO:** A presente revisão integrativa da literatura pretende analisar a efetividade da intervenção psicoterapêutica “Terapia da Dignidade” em doentes em fim de vida. **MÉTODO:** Foram incluídos 5 estudos resultantes da pesquisa eletrónica em bases de dados (*Medline; PubMed; ERIC; Science Direct; World Wide Science*), tendo como critérios de inclusão artigos apresentados em texto integral, artigos em língua inglesa, portuguesa e espanhola, publicados entre 2013 a 2019. Os critérios de exclusão, incidem nos artigos anteriores a 2013, artigos que não abordem a temática ou, cujo resumo não esteja relacionado com a temática em estudo.

RESULTADOS: O *corpus* de análise demonstrou que a utilização desta terapia amplia o sentido de utilidade, melhora a qualidade de vida, a própria dignidade e a forma como os familiares abordam e veem os doentes em fase terminal. A evidência comprovou ainda, que é possível diminuir os níveis de depressão e ansiedade destes doentes através da utilização desta intervenção, permitindo melhorar o bem-estar da pessoa, apesar da sua condição de doença^[2]. De referir que a população idosa beneficia deste tipo de intervenção, uma vez que grande parte sofre de depressão e ansiedade consequentes ao processo de envelhecimento^[3]. **CONCLUSÕES:** Os modelos que têm sido implementados na prática clínica comprovam a melhoria significativa das manifestações sintomáticas do doente, quer físicas, quer psíquicas. Os doentes que beneficiaram desta terapia mostram vontade de existir para além da condição de doença que lhes está subjacente. Considerando a preservação da dignidade como um aspeto central no cuidado a doentes terminais, é faraónico que os profissionais de saúde implementem ações, baseadas no modelo de *Chochinov*, destinadas à promoção da conservação da dignidade, e consequentemente à promoção do conforto e bem-estar.

Keywords: *Terapia da dignidade; doente terminal; cuidados em fim de vida*

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Fragility in institutionalized elderly: an exploratory study

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BACKGROUND: Demographic aging, and increased longevity, emerged health and social situations that have never before been observed in mankind, or at least in such large dimensions. One of these is the fragility syndrome, considered as an exhaustion of the capacities of adaptation and response to stressing agents^[1,2,3,4]. **OBJECTIVE:** To study the frequency of fragility as the institutionalized elderly perceive it. **METHODS:** A total of 113 elderly people of both sexes, institutionalized in four nursing homes in Viseu (Portugal). Inclusion criteria: >65 years old, being institutionalized. Possess physical and mental abilities to collaborate and, wish to collaborate. An interview script was drawn up, and the content interviews were transcribed from the record tapes and the context analyse was made, dividing it into categories. All ethical considerations have been respected. **RESULTS:** We interviewed 113 persons (>= 65 years old) with 19.5% between 65-74 years old; 35.4% between 75-84 years and 45.1% 85 years or more. Mainly were women (34,5 % men and 65.5% women). 54.9% of the elderly feel as fragile, with the

younger age group having the highest percentage, followed by the 75-84 age group. The main reasons for feeling fragile were: age, muscle weakness, fear of falling and / or frequent falls, difficulty in responding to stressful events, psychological problems and depression, dizziness. The reasons presented, despite being based on an empirical way, are related to what several authors described as *Fragility syndrome*^[4,5]. Although in the literature the percentage of frail elderly grow with age, in our study it is not the eldest who in more percentage feel frail^[2,4,5]. **CONCLUSIONS:** Although the participants' age was advanced and institutionalized people were surveyed, only 54.9% felt fragile. Studies such as this, involving the opinion of the elderly themselves are important. The study should therefore extend to the elderly living in the community.

Keywords: *Frailty; Elderly, elderly frail, nursing home*

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Effect of Paced Diaphragmatic Breathing on Heart Rate Variability in Adult Smokers

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BACKGROUND: Cigarette smoking is one of the highest contributors to the incidence of cardiovascular diseases. Lower breathing frequencies are associated to higher heart rate variability (HRV). The slower the breathing frequency, higher the values in the Low Frequency (LF) range (0.04-0.15 Hz)^[1]. **METHODS:** Six adult smokers (37.5 ± 11.85 years old, 2 women) were instructed to not smoke, drink alcohol or coffee 4h before data collection. No participant was taking medication for anxiety or depression; and, there was no report of damage to the kidneys, heart or brain^[2]. Informed consent was obtained. HRV was obtained with Polar V800 heart rate monitor^[3], in supine position, during 10min, in each of two conditions: i) baseline (B)-normal breath; ii) paced diaphragmatic breath (D)- requested to do diaphragmatic breathing at a slow but comfortable pace. HRV parameters were obtained with gHRV, v.1.6^[4]. **RESULTS:** In D condition, participants immediately achieved a pattern of respiratory sinus arrhythmia at .18 ± .03 Hz ($M = .17$), significantly less than in B condition (.31 ± .03 Hz, $M = .30$) ($Z = 2.201$, $p < .05$, $r = .90$, $rrb = .75$) [1]. From B to D significantly augmented LF (356.52 ± 349.67 msec² and 1920.06 ± 1831.28 msec², respectively) ($Z = 2.201$, $p < .05$, $r = .90$, $rrb = .75$) [1], HF (370.70 ± 413.81 msec² and 671.99 ± 655.86 msec², respectively) ($Z = 1.992$, $p < .05$, $r = .81$, $rrb = .46$), SD1 (32.50 ± 26.04 msec and 42.23 ± 32.70 msec, respectively) ($Z = 2.201$,

$p < .05$, $r = .90$, $rrb = .54$), SD2 (60.19 ± 29.71 msec and 99.69 ± 50.88 msec, respectively) ($Z = -2.201$, $p < .05$, $r = .90$, $rrb = .54$), heart rate variability index (11.93 ± 5.67 and 16.53 ± 7.40 , respectively) ($Z = 2.201$, $p < .05$, $r = .90$, $rrb = .75$), rMSSD (45.90 ± 36.81 msec and 59.67 ± 46.20 msec, respectively) ($Z = -2.201$, $p < .05$, $r = .90$, $rrb = .75$), standard deviation RR interval (48.93 ± 26.77 msec and 76.92 ± 42.14 msec, respectively) ($Z = -2.201$, $p < .05$, $r = .90$, $rrb = .75$), and heart rate standard deviation (3.38 ± 1.02 bps and 5.28 ± 1.76 bps, respectively) ($Z = -2.201$, $p < .05$, $r = .90$, $rrb = .75$). **CONCLUSIONS:** Results confirm those obtained by Catela, Seabra, Mercê, and Branco^[5] with heavy smokers. Simple instructions for a paced diaphragmatic breathing seem to be enough to afford beneficial (transient) effects in HRV values of adult smokers. Our results support the hypothesis that self-regulated paced diaphragmatic breathing^[1,5], may be a good candidate to an inexpensive and non-intrusive complementary, non-pharmacological and non-clinical therapy for smokers.

Keywords: smokers, breathing frequency, heart rate variability, adults

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Evaluation of the Effectiveness of a Hypnotherapeutic Intervention Model in the Treatment of Depressive Symptoms

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OBJECTIVE: The aim of this study is to assess the importance which included guidelines for the inclusion of hypnotic procedures in clinical practice and psychotherapeutic and the impact of this intervention in terms of depression. **METHODS:** Two interventional procedures were used to evaluate hypnotherapy in the treatment of depression and to compare it with the process of cognitive-behavioral psychotherapy. The study was carried out with 24 participants with a diagnosis of depression, identified using anamnesis and Beck Depressive Inventory, evaluated in two different time periods - t1 and t2 - and spaced for 4 months for depressive symptoms. Half of the participants were submitted to the intervention using hypnotherapy (G1) and the other half using the cognitive-behavioral model (G2), during 8 biweekly sessions with a duration of approximately 1 hour and 30 minutes. **RESULTS/CONCLUSION:** The analysis of the data allowed to

verify the existence of a significant reduction of the depressive symptoms in both groups that were the target of intervention, being that a greater reduction of the depressive symptoms was observed in the target group of hypnotherapeutic intervention, assuming the hypnotic procedure as an intervention tool to be integrated in the procedure of psychological intervention in depression.

Keywords: Hypnotherapy; Cognitive-behavioral psychotherapy; Depression; Beck Depression Inventory

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The Influence of Seat Height on Timing Activation of Tibiotarsica Muscles in Sit-to-Stand in Healthy Young Adults

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BACKGROUND: The sit-to-stand transition is an essential functional task for activities of daily living, such as gait, upper limb function, and is a requirement for Independence^[1]. The sit-to-stand is influenced by the height of the seat, which can interfere with the muscular activation necessary to assume the standing position^[2,3]. In physical therapy the sit-to-stand is part of the rehabilitation process, being used as an evaluation and inserted in the treatment plan. There are studies that evaluate the activation of the tibialis anterior and soleus^[4] in the sit-to-stand task with individuals sitting at 100% of leg height^[5] but at 120% of leg height, it was not possible to find studies that check the activation timing of the same muscles in the same task. Knowledge of the movement and of the movement's facilitating strategies will allow a more efficient movement, optimizing performance and aiming at reduction of compensation^[1]. **OBJECTIVE:** To test the influence of seat height on the activation timing of the tibialis anterior and soleus at the start of the sit-to-stand. **METHODS:** The study was a cross-sectional observational study, with 22 healthy young men and women, with a mean of age of 21.95 years. Each individual performed 3 attempts on the two sit-to-stand assessments, at 100% and 120% of leg height, which were randomized in order of collection. To evaluate the timing of activation of the tibialis anterior and soleus, used surface electromyography. The Student's T-test was used for paired samples to compare the differences between the two seat heights, with a significance level of $\alpha = 0.05$. **RESULTS:** The tibialis anterior was the first to be activated at the two heights of the seat (at 100% the timing was -215 ± 0.395 ms and at 120% it was -198 ± 0.653 ms). However, the differences found were not

statistically significant (at 100% leg height $p=0.310$ and 120% $p=0.887$). **CONCLUSION:** The present study allowed to conclude that the different heights of the seats, 100% and 120%, had no influence on the timing of activation of the tibiotarsica muscle at the start of the sit-to-stand.

Keywords: *tibialis anterior, soleus, seat height, sit-to-stand, anticipatory postural adjustments*

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Communication skills of nursing finalist students during the change-of-shift

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BACKGROUND: On the nursing practice, communication constitutes a basic tool for care, being the main tool to establish the bond with the users and assure the satisfaction of their needs. Communication is also essential on the nursing change-of-shift, to ensure continuity of care. In order to act adequately in this context, nursing students must develop communication skills during their academic journey. **OBJECTIVE:** The general objective of this study was to assess the communication competences of the nursing finalist students, to act on the change-of-shift. The specific objectives were: 1) identify the main difficulties in the development of this competence; 2) recognize the main resources that contributed to the learning process; and 3) identify the main communicative competence characteristics of the students, from their perceptions. **METHODS:** We applied a questionnaire to 10 finalist students of the nursing degree from the Jean Piaget High School of Health at Vila Nova de Gaia, in April 2018. Statistical analysis was performed using IBM SPSS Statistics v.24. **RESULTS:** The majority (> 70%) of the finalist nursing students consider to have the communication skills to act in the change-of-shift, emphasizing autonomy, as well as the ability to select the information to be transmitted in detail, clearly and objective, and transmitted in the appropriate time period. Students recognize the presence of feelings such as insecurity (60%) and shame (50%) during this activity. When facing difficulties, they mainly call on the nurse tutor (90%) as a source of encouragement and support, and also consider support among their colleagues as important. **CONCLUSION:** Nursing finalist

students feel well prepared to communicate and transmit the information in the change-of-shift and know how to react to the difficulties. We consider important to carry out other studies including the agents involved in this learning process, in order to provide Higher Education Institutions and clinical teaching sites with intervention tools that facilitates the acquisition of communication skills of the nursing students.

Keywords: *nursing, communication, change-of-shift*

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Man's emotional well-being in the transition to fatherhood

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BACKGROUND: Becoming a father is a transformative process, which implies reorganization and psychological adaptation from the beginning of pregnancy in order to incorporate the new demands on the paternal identity under construction, which can lead to decompensation and vulnerabilities in man. **Objective:** To understand the experiences of men in the transition to paternity during the prenatal period, aiming to contribute to a complete assistance in this transition. **METHODS:** Qualitative research. Exploratory, descriptive, cross-sectional and retrospective study, with the participation of 10 men (theoretical sampling) experiencing, for the first time, the pregnancy of their partners, in the last trimester and without maternal-fetal pathology. Data collection was from semi-structured interview. The data was analyzed with the content analysis technique, semantic categorization and an inductive approach. **RESULTS:** The experience of men during pregnancy is characterized by a great psychic and emotional depth. The category "emotional responses to pregnancy" describes the multiple emotional experiences of men and the cognitive processes underlying their state of mind, from the early stages of pregnancy to the last trimester. Emotional reactions are intense and diverse, oscillate between positive emotional reactions such as joy and happiness, and negative emotional responses, such as fear, anxiety, insecurity and worry. The plethora of emotions experienced by the men during prenatal period makes the transition to paternity a complex and emotionally ambivalent process, a time of joy and hope, but, at the same time, of confusion and frustration^[1,2]. Positive emotions are instigated by the thoughts of being a father, while negative emotions arise when pregnancy-related problems occur and when men fear negative outcomes for the mother and the baby^[3]. Although the expectant fathers experience psychological distress in the perinatal period,

they question the legitimacy of their experiences and are reluctant to express their support needs or seek help^[4]. **CONCLUSIONS:** Improving paternal psychological well-being in the perinatal period has undeniable benefits not only for men but also for effective support for the family, facilitating their well-being. The psychological metamorphosis felt by man is challenging and profound, but, unlike the maternal experience, it is still undervalued. It is therefore crucial that perinatal services, currently designed to assess maternal mental health and well-being, adopt a broader and more unifying vision, focusing on the family and not just the pregnant woman.

Keywords: *emotions; fathers; men; pregnancy*

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Motivation for the practice of physical activity in adult gym clients

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BACKGROUND: Physical activity (PA) practice is an advantage for well-being and quality of life, recognized by several international entities^[1], with emphasis in the fight against obesity and overweight, whose prevalence in the Portuguese adult population is estimated in 25% and 60%, respectively^[2]. Given the low levels of practice, understanding the underlying PA motivations is an important way to promote it. **OBJECTIVES:** The aim of this study is to characterize and compare the motivations of a gym client's Portuguese sample, through the Physical Activity and Leisure Motivation Scale (PALMS), regarding gender, age and academic level, as well as to relate reasons of practice with self-perceptions of health status. **METHODS:** is an ex post facto quantitative exploratory study with a convenience sample of 75 subjects attending a gym in the Centre of Portugal, of both genders and aged between 18 and 64 years with different academic qualifications. Statistical analyses were performed with SPSS-IBM 25, with a confidence level of 95%. **RESULTS:** The Physical Condition subscale was the most important motivational source. Statistical differences on the PALMS global score were not found, regarding all the independent variables, although at the subscales level males emphasize the Competition and Other's expectations, while females emphasize Psychological Condition ($p < .05$). The academic qualifications are discriminatory ($p < .05$), highlighting the Appearance in the ones of less qualification and the Psychological Condition in the higher qualified group. Age was

not significant in any of the comparisons. The health state self-perception has revealed a positive and significant correlation with the PALMS global score ($p < .05$) and with the Enjoyment ($p < .01$), Mastery ($p < .05$) and Affiliation ($p < .05$) subscales. **CONCLUSIONS:** The most important motives for Physical Activity practice by the gym clients studied are Physical Condition, Psychological Condition, Appearance and Enjoyment. As less relevant are the Competition, Other's Expectations and Affiliation subscales, similar to other studies^[3]. The results highlight the necessity to consider the different motivation sources that might concur for the Physical Activity practice mobilization, taking into account the personal characteristics of each individual. Objective assessments of health status may help to clarify the relationship between practice reasons and health self-perceptions.

Keywords: *motivation, physical activity, adults, gym*

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Impact of Social and Personal Skills Training program in the consumption of drugs among adolescents

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BACKGROUND: The literature refers that personal and social skills in adolescence are the protection processes more frequently identified in drug consumption^[1]. So, it's important to implement and evaluate social and personal skills programs and to increase the literacy about drugs to enhance the intervention^[2]. **Objectives:** Describe the impact of a Social and Personal Skills Training program on knowledge and consumption of psychoactive substances, among adolescents of the Centre of Portugal. **METHODS:** A research-action was conducted, with a sample of 49 subjects (64.6% male), ages between 13 and 17 ($M = 14.81 \pm 1.12$), 58.1% with at least one grade retention. The training program consisted in fortnightly 6 sessions of 60 minutes. The data was collected using a Likert scale (1 - Completely Disagree; 5 - Completely Agree) *ad hoc* questionnaire with 16 statements about substance consumption. A pre and post-test was conducted. **RESULTS:** From pre to post-test, has remained the no consumption of some substances by any of the 49 participants (amphetamines, tranquilizers, hallucinogenic or opioids). Also, the once or twice per month cocaine consumption, did not change (1 subject). Cannabis consumption decreased from 7 to 1 subjects (the participant with consumption higher than one a day). The socially-accepted substances presented higher number of consumers: alcohol (16) 27.3% and tobacco (11) 22.4%, decreasing to 12 (24.5%) and 7 (14.3%) respectively. The participants enhanced the knowledge levels about drugs ($M = 2.43 \pm .781$ vs $M = 3.18 \pm .712$, $p < .001$). **CONCLUSIONS:** This

training program contributed to the knowledge about drugs and seems to reduce the consumption levels of the socially-accepted substances, in particular, those who manifest, *ab initio*, lower consumption levels. So, it may be effective in early intervention and prevention. It is reinforced the importance of social and personal skills programs for adolescents in drugs prevention, although not as an exclusive intervention, similarly to other studies [3]. Nevertheless, it is necessary to increase the number of participants, to follow up and complement these results (self-reports) with others of objective nature.

Keywords: *Social and personal skills, drugs, adolescents.*

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Palliative cares in the elderly

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BACKGROUND: Nursing has developed its practice through a holistic model, oriented to the individuality of each person, where the nurse is the person as a whole, with a perspective of growth and development. **OBJECTIVE:** To understand the care provided to the elderly with palliative care needs^[1,2,3,4,5]. **METHODS:** A systematic review of the literature was carried out in the CINAHL Plus, MEDLINE, Nursing & Allied Health Collection: Comprehensive Edition and MedicLatina databases, and studies were published between 2012-2018, which were subsequently evaluated in accordance with the criteria of inclusion and established. The review *corpus* consisted of 4 articles. **RESULTS:** The analysis of the studies demonstrates that palliative care for the elderly should focus on supportive care and comfort, physical / psychological / spiritual / emotional / social symptom / need control, communication with the elderly / family, needs satisfaction psychological / emotional, hygiene and comfort care, integrating the family into care, spending more time with the elderly, and promoting general care for the promotion of quality of life. They must be holistic care aimed at improving the quality of life of the elderly and their families. **CONCLUSION:** The results suggest that palliative care is a priority of health policy, which implies a programmed and planned approach, with a perspective of global support for the multiple problems of patients, in the concrete case of the elderly, who are at a more advanced stage disease and at the end of life.

Keywords: *palliative care; elderly*

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Nursing Practice and Client Safety Environments: An Integrative Review of Literature

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BACKGROUND: Favorable nursing practice environments are characterized by the adequacy of human and material resources, effective participation of nurses in organizations, existence of nursing fundamentals for quality of care, management, leadership and support to nurses. With regard to health, there is a strong relationship between favorable environments and nursing care^[1,2,3,4]. **OBJECTIVES:** To verify the relationship between Nursing practice environments and client safety. **METHODS:** An integrative review of the literature that was carried out with a search of articles in the Medline and Scielo database. The sample *corpus* of this review consisted of six articles. **RESULTS:** It was found that the nursing practice environments, the shortage of human and material resources and the high workload, can lead to the dissatisfaction of professionals influencing the safety of clients. **CONCLUSIONS:** Through the analysis of the studies it was verified the existence of a relationship between the nurses' practice environments and the client's safety.

Keywords: *nursing practice environments; customer safety; nursing*

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Sexuality in the Elderly: An Integrative Review of Literature Magda Guerra¹, Zaida Azeredo², Cheyenne Stacy³, Cristiana Ferreira³, Petru Bulai³

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BACKGROUND: In the twentieth century there has been a reversal of the age pyramid and, thus, there has been a marked tendency towards demographic aging, being possible to verify this phenomenon really present in the 21st century. Since sexuality is an important aspect of being human, and with the increase in the average life expectancy of people, it is fundamental to try to preserve sexuality in the elderly, thus contributing to the well-being of the human being until the end of life^[1,2,3,4,5]. **OBJECTIVES:** To analyze the factors influencing sexuality as well as its importance in the elderly. Design: Integrative literature review by PI[C]OD method. **METHODS:** We included 4 studies from the electronic databases (Medline; PubMed; Psychology and Behavioral Sciences Collection; LILACS), whose inclusion criteria were articles presented in full text, articles in English and Portuguese whose publication date was between 2014 and 2018, articles that included healthy elderly people (≥ 65 years old) addressing the topic of sexuality. Exclusion criteria were articles published before 2014, articles that did not address the theme, or whose abstract was not related to the topic under study, as well as elderly individuals who presented a non-heterosexual sexuality. **RESULTS / CONCLUSIONS:** This study evidenced several determinant factors in sexuality in the elderly, being these belonging to the following dimensions: psychological, biological, social and religious, covering a set of specific factors of each one. The stated factors should be introduced and explained in the lives of couples and their relationship in order to optimize sexuality, contributing to their health.

Keywords: *Elderly Person; Sexuality*

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Impact of nursing ratios on client's well-being

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BACKGROUND: The Safe Nursing ratios emerges from the need to provide safety and satisfaction in the quality of care provided to the client by promoting a balance between their level of qualification and their competence. Thus, the adequate

allocation of nursing resources refers to the correct allocation of nurses with respect to quality and quantity, in order to respond to the needs of the clients, being an impact factor for the quality of the nursing care provided. **OBJECTIVES:** Given the above and knowing that nursing credits are an important factor regarding lower quality of care and lower well-being, it is important to note the relevance of the present integrative review of the literature. **METHODS:** The present systematic review aims to analyze the impact of nursing credits on the client's well-being and intends to answer the following research question: do nursing credits have an impact on the well-being of the client? The PI(C)OD method was used: Participants, Interventions, Results and Type of study. Therefore, descriptors were defined, and inclusion and exclusion criteria were established and the Rcaap and PubMed databases were selected. The bibliography found was analyzed according to the objectives of the present investigation. Analysis of the literature and application of criteria resulted from a sample corpus of 11 articles. **CONCLUSIONS:** The results show that the endowment is directly related to the quality of care provided by the nurses, the safety and well-being of the client. In this way, inadequate staffing, qualification and skills of the nurses in deficit are key factors in the impact of the client's well-being, as well as in their health, morbidity and mortality, as well as health losses. In view of the above, this study reveals that it is essential to provide sufficient efficient resources in organizations in order to increase the levels of safety and quality of care provided.

Keywords: *nursing ratios, client's well-being*

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Falls in the institutionalized elderly

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BACKGROUND: With the aging process a decline in the physical health of individuals emerges, due to the influence of many factors, interfering with their quality of life. Aging is also associated with a decrease in bone-muscle mass and loss of balance, which may increase the risk of falls. Thus, it is essential to identify these factors and intervene early. **OBJECTIVE:** To evaluate the propensity of falls in the elderly and to know the associated risk factors. **METHODS:** This is an exploratory-descriptive cross-sectional study. The sample was composed of 17 elderly people living in a nursing home in the Central Zone of the country. The Test of Tinetti to evaluate the balance and the statistical treatment of the data obtained. **RESULTS:** Female prevalence was observed. The elderly were in situations of high physical dependence and reduced mobility, having obtained scores in the test of Tinetti compatible with a greater predisposition for falls. **CONCLUSION:** The causes of falls are

multifactorial, it is up to professionals to stimulate activity and to provide a safe environment for the elderly in order to minimize the risks of falling.

Keywords: Falls, risk factors, institutionalized elderly

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Nursing quality indicators in the elderly

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BACKGROUND: The main aspects of nursing quality indicators in the elderly are falls, hospital infections, therapeutic errors and pressure ulcers, and it is these that we will emphasize in this integrative review, since it is in the interest of nurses to know the quality indicators for improve care for the elderly. As we know population aging is a worldwide phenomenon, and the increase in the proportion of the elderly population occurs abruptly and rapidly, especially in developing countries. Aging is associated with a process marked by biological, psychological and social changes, which can be reflected in the level of behavior of the elderly, in the type of activities they maintain, as well as in social interactions^[1,2,3,4,5]. **OBJECTIVE:** To analyze the national and international productions that approach the theme of quality indicators in Nursing in the elderly. **METHODS:** Integrative literature review by PI[C]OD method. Five studies were included in the study of electronic databases (Medline; BDNF-ENFERMAGEM, SciELO and Virtual Health Library), whose inclusion criteria were articles presented in full text, articles in Portuguese and English publication whose publication date was between 2014 and 2018. Exclusion criteria were articles published before 2013, articles that did not address the theme or whose abstract was not in line with the subject under study. **RESULTS/CONCLUSIONS:** The results suggest that it is of the utmost importance that all patients are treated with personalized care since each has its own pace of aging. We also emphasize the importance of the training of professionals who provide health care so that the treatment is the most appropriate for the patient.

Keywords: quality indicators, nursing, elderly

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Health Education - a study on knowledge about Parkinson's Disease

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BACKGROUND: We share the idea that health promotion can be a vehicle for transforming practices and individual behaviors that influence the development of autonomy and the quality of life of the user^[1]. **OBJECTIVE:** The present study integrates a broader investigation in the field of Education and Health Promotion and was developed with the objective of identifying the knowledge regarding Parkinson's disease and identifying the role of the psychometrician as a technician capable of interviewing patients with this pathology. a group of individuals (young and adults) from Vizela and Sátão, Viseu. The research questions that guided this study were: What level of knowledge of the general population about Parkinson's disease (PD)? Are there differences in the general knowledge about PD between the adult population and the young population? What is the role of the psychometrist as a technician involved in patients with Parkinson's disease? **METHODS:** In this sense, much of the symptoms associated with PD may be delayed or minimized by the adoption of adjusted behaviors or activities, such as exercises to stimulate balance, strength, motor coordination, cognition, and flexibility. During the study, a quantitative methodology was adopted and a questionnaire was used for data collection. In the first phase, the questionnaire was elaborated by the authors of the study, validated and applied in the two localities previously mentioned. The questionnaire consists of six questions, one short answer question, four multiple choice questions, and one true and false question. In the second phase, the data were analyzed and treated, using descriptive statistics. The study sample consisted of 16 adults and 17 young people between the ages of 14 and 71 years. **RESULTS:** In general, the results obtained regarding the symptomatology, characteristics, and treatment of the disease under study were satisfactory; however, a high degree of ignorance of the intervention of the psychometrician and his performance in individuals with Parkinson's disease was also noted. We can base these results due to the fact that it is still an intervention area with little recognition. In relation to the adult population, compared to the young population, there is a greater lack of knowledge (12.5%) of the techniques. **CONCLUSIONS:** As future psychometrists, we believe, after this study, that our role may be fundamental in a preventive and interventional context of PD, always taking into account that, at no time, the objective is to eliminate the symptoms resulting from this disease, but rather to help the person who has to deal with the changes at the motor and cognitive level, aiming at the conservation and stimulation of the functions, always taking into account the

preservation of their autonomy and their quality of life, aiming at social reintegration.

Keywords: *Parkinson's disease, Health Education, psychometrists*

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The effects of different warm-up intensities on the neuromuscular response in squatting exercise

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BACKGROUND: Warm-up is considered essential for exercise and training performance, avoiding injury and optimizing the performance of physical activity^[1,2]. However, the effects of priming activities on strength training performance are still far from be known^[3]. **OBJECTIVE:** The present study aimed to verify the effects of a specific warm-up intensity on the neuromuscular response of the squat exercise. **METHODS:** The squat exercise was evaluated on mechanical responses, such as time to maximum speed (TMS), time to maximum power (TMP) and rate of force development (RFD). Ten male aged between 19 and 29 years (mean \pm SD: 23.70 \pm 2.58 years, 79.00 \pm 11.95 kg body weight, 1.77 \pm 0.08 m height), performed a light intensity warm-up (6 repetitions of the 40% training load) and a high intensity warm-up (6 repetitions of the 80% training load). Then, after 5 min of passive rest, 3x6 repetitions of 80% of 1 repetition maximum (1RM) were performed (3min rest). **RESULTS:** Significant differences were found when comparing the TMS (4.640 \pm 7.205 vs. 5.938 \pm 1.218 s; $p = 0.006$, $d = 1.35$) and the TMP (4.216 \pm 0.758 vs. 5.483 \pm 1.292 s; $p = 0.009$, $d = 1.24$) between warm-ups, with higher values when the higher intensity was performed. No significant differences were found in RFD (77.40 \pm 47.46 vs. 98.20 \pm 37.33 N/s; $p = 0.316$, $d = 0.49$), nevertheless the obtained results were once again higher on the protocol with highest intensity warm-up. **CONCLUSIONS:** The results showed that specific warm-up in the squat with 80% of the training load resulted in a better performance on a squat training set, compared to the specific warm-up with 40% of the training load, reporting a different neuromuscular response.

Keywords: *Warm-up; Strength, Squat, Potency*

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CROISSANT»ZAIT – Food innovation of a new product: Olive oil croissants with olive paste

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BACKGROUND: Food Innovation is today a constant transformation with the reformulation of existing products on the market in the agri-food sector. Establishing a perfect correlation between food and health, coupled with knowledge of nutrition, quality and food safety, is a unique opportunity for innovation and differentiation for the agrifood industry, allowing the development of new, nutritionally healthier foods. The multiple benefits of olive oil for health are indisputable, the development of new olive oil products, rather than margarines and butters, will produce a value for the product as well as contribute to the improvement of diet^[1]. Olive oil is distinguished from the rest by dietary fats, by unique flavors and aromas, and by its particular composition in mainly monounsaturated fatty acids^[2], which are associated with a decrease in cardiovascular risk and a decrease in the LDL (bad cholesterol) fraction of blood cholesterol. Olive oil occupies a prominent place in the Mediterranean diet, being included in the group of foods that should be consumed daily^[3,4,5].

OBJECTIVE: Based on the requirements, requirements and needs of the current consumer, this project has developed a healthy bakery product, which includes olive oil and olive oil, the CROISSANT »ZAIT an olive croissant with olive paste. The development of this product comes as an alternative to traditional brioche croissant with hazelnut chocolate filling. **METHODS:** The methodology used in the formulation of CROISSANT»ZAIT comprised the selection and combination of the following ingredients: T65 Alentejo wheat flour, water, extra virgin olive oil, olive, fresh yeast, salt, orange couscous, egg and oregano, following the subsequent stages of manufacturing, dough preparation, ingredient mixing, kneading, dough modeling, cutting, filling, baking, cooling and finishing. **RESULTS:** Regarding their nutritional characteristics, after being developed, studied and when compared to traditional brioche croissants with hazelnut chocolate filling, it was found that the CROISSANT»ZAIT presents lower energetic value (Kcal), as well as lower amount of sugar. However the great difference stands out in the amount of monounsaturated fatty acids present in the CROISSANT»ZAIT compared to the saturated fatty acids present in the traditional croissant. Finally, we used the organoleptic evaluation established by the Panel Test method. The results obtained were very satisfactory, especially the consistency of the mass (very uniform) and a very pleasant flavor. **CONCLUSIONS:** In conclusion, the development of this innovative product was based on the addition of beneficial compounds to health making the nutritionally more balanced and healthy, olive oil gives flavor, aroma and color. Olive personalizes and identifies food.

Keywords: *new product development, olive oil, olives, olive paste, baking, innovation.*

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The influence of warm-up on 100m running kinematics M^a Helena Gil¹, Henrique P. Neiva², António C. Sousa³, Mário C. Marques⁴, Daniel A. Marinho⁵

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BACKGROUND: The ability to sprint is a determining factor in a multitude of sports activities and sprint optimization is a large studied domain^[1,2]. It is known that sprint speed is influenced by the stride frequency and stride length^[3]. **OBJECTIVE:** The aim of the present study was to determine the influence of warm-up on the kinematic variables of 100m sprint. **METHODS:** Eleven men physically active (mean \pm SD: 27.18 \pm 9.67 years of age, 1.76 \pm 0.08 m of height, 78.21 \pm 8.59 kg of body mass) participated in this study and were submitted to two different protocols, in a randomized order: no-warm-up (NWU) and with warm-up (WU). WU was designed based on previous research^[1,4] and comprised 5min of easy run (lower than 65% of estimated maximal heart rate), eight exercise drills (20m repetitions with 10s of recovery between them), such as rhythmic jumps from foot to foot, ankle drills, skipping drills, high-knee running. These technical exercises were followed by 2x40m running at gradually increasing intensity. Performance and kinematic variables (time, stride frequency and stride length) were assessed. Times were measured by Photocell timing gates (Brower photocells, Wireless Sprint System, USA) and all the procedures were recorded by two video cameras (Casio Exilim Ex-F1, f=30Hz) placed perpendicular to the running track. Standard statistical methods were used for the calculation of mean \pm SD. The normality of all distributions was verified using Shapiro-Wilk tests ($p > 0.05$). The effect of the warm-up procedures was analyzed by an ANOVA for repeated measures. We used Hedges'g (ES) for within-subjects' comparisons using the Excel spreadsheet by Lakens^[5]. **RESULTS:** There was a significant improvement of the sprint times caused by the warm-up (NWU vs WU: 15.86 \pm 1.01s vs 14.68 \pm 1.23s, $p = 0.006$, ES = 0.97). It was possible to verify that warm-up had a great influence in the stride frequency (NWU vs WU: 1.86 \pm 0.19Hz vs 1.99 \pm 0.12Hz, $p = 0.005$, ES = 0.80) and a slight increase of the stride length (NWU vs WU: 3.43 \pm 0.31m vs 3.46 \pm 0.37m, $p = 0.365$, ES = 0.21). **CONCLUSIONS:** We recommend that athletes perform warm-

up before a training or competition, as warm-up proved to be beneficial to the performance (influencing positively the running kinematics). More research is needed to understand the effects of different WU protocols on the sprint performance.

Keywords: Warm-up, performance, kinematic

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Lifestyle, diet, sleep, sports practice and body composition in the 1st Cycle of Basic Education

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BACKGROUND: An adequate lifestyle, eating habits (diet), sleep, sport practice and body composition contribute to the physical, social, intellectual and cognitive development of children, during childhood to adulthood^[1]. **OBJECTIVE:** The aim of this study was to characterise these variables in primary school. **METHODS:** The sample was composed of 588 children, aged 6 to 9 (M \pm SD= 7.47 \pm 1.10), all belonging to 10 schools of Montemor-o-Velho. Data collection was composed of a questionnaire^[2]. Body composition variables were collected using a bio-impedance scale (TANITA TBF-300A), respecting the recommended procedures in literature. Some of the results show that: in lifestyle, "watch television, play in computer, mobile phone and tablet" is the leisure activity that children spend more time (almost one hour per day). **RESULTS:** In terms of eating habits (diet), more than 50.0% does not consume the

recommended portions of water (51.4%) or vegetables (50.2%). In sleeping habits, it is possible to confirm that during the week (Monday to Friday) 42.8% of the children go to sleep at 10.00 p.m. or later, waking up at 7.45 a.m. to go to school. In sports practice, 35.4% of the children do not engage in regular sport practice and, for those that are involved, swimming is the most prevalent activity (42.7%) followed by football (26.3%). Lastly, regarding body composition and namely, body-fat percentage, it is possible to verify that 40.4% are overweight (16.8%) and obese (23.6%), which is a high value when compared to the 31.5% obtained in a similar investigation^[3]. **CONCLUSIONS:** These results allow us to understand a specific reality, in a specific cultural-geographical context, and through that reflect about some strategies that could/should be implemented to minimize this public health problematic. It is extremely important to analyse, reflect and (essentially) act in order to change these emerging threats in childhood and, with that, improve their global health and well-being.

Keywords: *body composition, diet, lifestyle, sleep, sports practice.*

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The emergence of Human Resources Marketing framework: How Internal Marketing approach is changing organizational happiness interventions

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BACKGROUND: Organizational behavior has long been focusing on improving the quality of work life and promoting well-being at work. Although organizational happiness (OP) is not, yet, a term extensively used in academic research, for many years researchers have studied a number of constructs with considerable overlap concept happiness concept^[1] and the rise of positive psychology in the past decade^[2] has legitimized attention to happiness. Happiness at work includes work engagement, job satisfaction and organizational commitment among other constructs, and promoting OP should be an organizational goal^[1]. Nevertheless, interventions focusing on OP and workplace well-being are still scarce, since, frequently, organizations were not able to see long-term advantages in this investment. In the last decades, Internal Marketing (IM) approaches have contributed to the field dynamics, changing the perspective and giving new hope to OP interventions. **OBJECTIVES:** Drawing on several contributions, the aim of this paper is to further develop the new framework of human resources marketing^[3], integrating multidisciplinary approaches. **METHODS:** Classic-narrative literature review, historical research and essayistic future-

oriented techniques were used. **RESULTS:** We construct upon and enrich the new emerging framework of human resources marketing. Internal marketing concept, first used by Berry, Hensel and Burke^[4] has evolved to what now can be defined as seeing the worker as an internal client of the organization, and assuming that, if workers are treated like an external customers, they will represent organizational values to external markets, and consequently, be more productive and happy^[5]. Furthermore, in IM approach, jobs are seen as the products to offer and employees as internal costumers, therefore, jobs must fulfil the need and wants of these costumers, whilst simultaneously reaching for the organizational goals^[5]. However, there are "limits to what can be achieved by marketing techniques alone and it is of crucial importance to note that internal marketing requires the involvement of a number of departments working in unison (...), and, in certain circumstances, administrative actions by the personnel function is more likely to be effective than usage of marketing-like devices"^[4] (p.57-58). Consequently, authors^[5] suggest "Creating cross-functional teams from Rh and marketing (...)" or "merging Rh and marketing departments" (p.62) and Neagu^[3] suggests the creation of 'human resources marketing' department. **CONCLUSION:** We finish reflecting of the challenges of this new framework and discuss implications for organizations, workers, and furthermore, for future higher education training skills for professionals in this new field.

Keywords: *Internal Marketing, Human Resources, Organizational Psychology, Workplace Well-being, Organizational Happiness*

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Knowledge and the transformation of health care into evidence-based practice

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BACKGROUND: Recent years have been proficuous in producing research in the field of health sciences. However, the emergence of new knowledge and multiple guidelines, clinical standards and other instruments for facilitating access to results, have no direct impact on the delivery of care, nor on the definition of health policies. The Safe Transition (ST) Project emerges to

promote the translation of knowledge to problem solving, in order to increase the empowerment of patients and families, and facilitate their transition from hospital to community⁽¹⁾. **OBJECTIVES:** Describe the safe transition project and characterize the process of translating knowledge to the clinic. **METHODS:** Exploratory study of qualitative approach, which took place between 2014 and January 2018. The data collection was done through: participant observation; semi-structured interviews; consultation of professional records, on the methodology used in the ST project; and the indicators of process and results, defined for ST. The diversity of techniques and sources applied facilitated the inductive work, making it possible to understand the different actors in the process, thereby, enriching the interpretation and guiding the emergence of new questions. Altogether, allowing to unveil the complexity of the relations established between the sources and the concepts. The ST project involves a higher education institution, a hospital and a cluster of health centers, which authorized the study. **RESULTS:** The analysis of the sources allowed to infer that the ST project promoted the transfer of knowledge to the context of the clinic, changing the practice. From the analysis of the findings emerged three key steps, which contributed to the transfer of knowledge, namely: a) planning the research project; b) process of investigation and c) transfer of results. Each of these phases ensured the transfer of results, to the teams involved in the project, through a series of steps. **CONCLUSIONS:** The methodology of cooperative work between the partners (academia and praxis), within the scope of the ST project, has resulted in knowledge production and dissemination, as well as in its integration in contexts, in the creation of broad research lines, and in improvement of the decision-making process (accordingly to the operational objectives of the services), contributing to problem solving⁽²⁾.

Keywords: Knowledge, Transfer, Research, Health, Evidence-Based Practice

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Professional satisfaction of nutritionists: influence of age

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BACKGROUND: Work well-being characterizes the professional quality of life and can be seen as one of the main determinants of productivity at the individual, business and social levels^[1,2]. Although the profession of nutritionist is relatively recent, it is growing, with few studies analysing the course of these professionals as well as their perception regarding work, training or investigating their well-being. **OBJETIVES:** To evaluate the influence of age on the professional satisfaction of Portuguese and Brazilian nutritionists. **METHODS:** An

exploratory cross-sectional study was carried out by applying a validated questionnaire consisting of 26 items^[3], with a Likert scale of five points ranging from Never (0) to Always (4). The professionals were surveyed through social networks and met the following inclusion criteria: being a nutritionist and working in the specific area of nutrition. The instrument was sent via e-mail to access the Survey Monkey® platform, where they signed the Free and Informed Consent Form and completed the data collection instrument. **RESULTS:** A total of 1136 subjects were interviewed, of which 206 were Portuguese (5% of the total members of the Professional Order) and 930 Brazilians (0.5% of the total members of the Brazilian Federal Council of Nutritionists), most of them in the 21- 34 years (69.7% in Portugal and 66% in Brazil). Portuguese and Brazilian nutritionists perceive themselves as being frequently in a well-being situation at work (2.60 ± 0.47 and 2.58 ± 0.56 , respectively). Having more than 34 years seems to be one of the predictors of well-being in the work of nutritionists in both countries. **CONCLUSION:** The results seem to show that in the younger age groups the nutritionists have less well-being at work, which may be related to the initial stage of the career in which they are, receiving lower remuneration and having greater professional instability, being more susceptible to a geographical mobility.

Keywords: well-being, age, nutritionists, satisfaction

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Health education: promotion of the rational use of Medicinal Plants. Program of Use of Medicinal Plants in the Basic Health Unit of São Sebastião, city of Palhoça, Brazil: Experience Report

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BACKGROUND: According to an ethnobotanical study conducted in 2018^[1], the Basic Health Unit (UBS) of the São Sebastião district, in the city of Palhoça - Brazil, has a total of 5,004 residents registered for health monitoring. Among these people, the level of utilization of medicinal plants was low. Taking into account that medicinal plants are the raw material for

phytotherapies and other medicines and that it represents 24% of Brazil's biodiversity, the Project for Extension of Use of Medicinal Plants in the Unified Health System (FitoSUS), in partnership with the UBS professional team, worked with the purpose of stimulate the rational use of medicinal plants by the community. Based In the National Policy of Medicinal Plants and Phytotherapeutics (Decree 5.813 / 2006), which establishes guidelines for the development of actions based in common objectives aimed at guaranteeing the safe access and rational use of medicinal and phytotherapeutic plants in the country. **OBJECTIVE:** To develop health education actions to promote the conscious use Medicinal Plants at UBS São Sebastião, Palhoça - SC. **METHODS:** Report of the experience of academics of the course of Naturology and Medicine at the University of Southern Santa Catarina (UNISUL) in which the FitoSUS Extension Project is linked. In 2018, the implementation of health education actions took place through an integral approach, in which the preparation of educational material and the rounds of conversation were proposed. In addition, activities were proposed in the garden. **RESULTS:** Educational activities were carried out with the community under the supervision of the Community Health Community. Conversation Wheels were organized with people waiting for attendance at the UBS; in the Tea Days were approached as Indicative of medicinal plants and with emphasis on the rational and adequate use for the most prevalent diseases in the neighborhood, considering the traditional popular knowledge of the community. No Elderly Group participated on average 100 days / day. The sustainable management of the garden includes a production of seedlings for distribution to the community, cleaning and fertilization of the beds. **CONCLUSIONS:** The interaction between the FitoSUS Extension Project and the community, facilitating the dialogue between popular knowledge and scientific knowledge, strengthening the feeling and feeling of belonging to the local population, the professional team and the health services. The course had an important participation in the training of extension students, innovation technologies and human resources incentives for the future development of research, technologies and innovation in herbal and phytotherapeutic plants.

Keywords: *Medicinal plants*

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Epidemiology of musculoskeletal injuries in tennis players: risk factors

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BACKGROUND: Tennis practice requests involves repetitive stresses through several strokes and movements during several hours. These factors can lead to injuries on musculoskeletal structures^[1-4]. **OBJECTIVES:** This study aimed to determine injury epidemiology in tennis players, as well as their type, location and risk factors. **METHODS:** Sample was constituted by 46 tennis athletes who trained in the south of Portugal, aged 5 to 65 (30.83±19.73), being 31 (67.4%) male and 15 (32.6%) female. The measurement instrument was a questionnaire concerning the characterization of the population, and aspects related to the modality and injuries, applied by interview. This questionnaire was used and validated in Pires and Oliveira study^[5]. **RESULTS:** Eleven (23.9%) athletes referred to have an injury throughout tennis practice, totaling 14 injuries. Eight (17.4%) athletes referred have had an injury in a 12-month period, totaling 8 injuries, and 7 athletes (15.2%) in a 6-month period, totaling 7 injuries. To minimize recall bias but maximize injury capture, the 6-month period was chosen for analysis in the present study. The most common injuries were muscle contusion (n=4; 57.1%), following by tendinopathy (n=2; 28.6%) and sprain (n=1; 14.3%), located in the ankle (n=3; 42.9%), arm (n=1; 14.3%), elbow (n=1; 14.3%), knee (n=1; 14.3%), foot and fingers (n=1; 14.3%). Most of injuries occurred during training (n=5; 10.9%) compared to competition (n=2; 4.3%). The most common injury mechanism was performed a right (n=3; 42.9%), left (n=3; 42.9%) and volley (n=1; 14.3%) techniques. All athletes (n=7; 100%) performed some type of treatment due to injuries. Five (71.4%) athletes had to stop training and competition for a period between 3 to 5 days because of injuries. Two athletes (28.6%) still remain in pain. Male tennis athletes present 3.36 more probability to have an injury than female players, adults athletes (equal or more than 18 years old) had 1.56 more chances (95% CI: 0.27-9.10; p=0.620) compared to younger one, who trained equal or more than 3 times per week had 1.91 more chances (95% CI: 0.37-9.96; p=0.443), and who trained equal or more than 3 hours per session had 1.02 higher probability of injury (95% CI: 0.17-6.05; p=0.984). None of the analyzes performed had statistical significance. **CONCLUSIONS:** Data revealed a moderate prevalence of injuries in tennis athletes in the analyzed sample, being muscle contusion injuries the most common type of injuries and the most affected body area was the ankle. These findings are important for developing appropriate injury prevention strategies.

Keywords: *epidemiology, incidence, injury, prevalence, tennis*

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That's a dangerous thought: Compensatory health beliefs in Portuguese adults

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BACKGROUND: Behaviour is the most influential factor on health^[1]. Tobacco and alcohol consumption, and excessive sodium intake are among the main behavioural risk factors^[2]. The adoption of such behaviours may be influenced by compensatory health beliefs, that is, beliefs that it is possible to minimize the negative consequences of health-impairing behaviours by performing health-enhancing behaviours (e.g., physical activity, healthy eating)^[3]. **OBJECTIVES:** To assess and compare the prevalence of compensatory health beliefs among Portuguese adults. **METHODS:** 199 Portuguese adults filled out the Compensatory Health Beliefs Scale. This scale includes 17 beliefs regarding the compensation of the detrimental effects of alcohol, tobacco, and coffee consumption, unhealthy eating and sleep patterns, and stress. Participants state their agreement level (ranging from 0 – *Not at all* to 5 – *Very much*) with each belief. **RESULTS:** Most adults totally disagreed with the compensatory health beliefs (mean agreement values ranging from 0.32 to 0.95), except for the beliefs concerning stress and one belief concerning unhealthy sleep patterns. Most adults agreed somewhat, quite a bit, or very much with the belief that the bad effects of stress can be made up for by exercising ($M = 2.31, SD = 1.09$). The agreement level was significantly higher ($p < .001$) for beliefs concerning stress ($M = 1.85, SD = 0.78$), compared to beliefs concerning alcohol ($M = 0.62, SD = 0.69; t = 18.71$), tobacco ($M = 0.76, SD = 0.87; t = 15.30$), and coffee consumption ($M = 0.68, SD = 0.86; t = 16.45$), and unhealthy eating ($M = 0.60, SD = 0.64; t = 21.70$) and sleep ($M = 1.16, SD = 0.85; t = 11.69$) patterns. Regarding some health topics, there were significant differences on the agreement level with different beliefs: for instance, the agreement level was higher ($t = -5.39, p < .001$) for the belief that it is OK to go to bed late if one can sleep longer the next morning ($M = 1.37, DP = 1.06$), compared to the belief that too little sleep during the week can be compensated for by sleeping in on the weekends ($M = 0.95, DP = 0.95$). **CONCLUSIONS:** In order to promote the health of Portuguese adults, compensatory health beliefs should be the focus of preventive actions, considering that those beliefs influence health behaviours and can be modified. Specifically, psychoeducation programs should focus on the detrimental health effects of stress.

Keywords: *behaviour, compensatory health beliefs, health, prevention, stress*

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Nurses making a difference in tobacco dependence treatment in Portugal

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BACKGROUND: Tobacco is associated with many avoidable diseases, making it's control a priority in most countries including Portugal^[1-3]. Despite the existence of effective ways to help patients quit smoking, nurses are usually ill prepared for it^[4]. Nevertheless, the 72000 Portuguese nurses would make a significant difference in the tobacco epidemic, thus supporting use of Training-of-Trainers programmers' efficacy^[5]. **OBJECTIVE:** The current work aims at filling the nurses' tobacco educational gap and build capacity among Portuguese nurses for evidence-based cessation interventions in clinical practice. **METHODS:** From October 2017 to December 2018, using a descriptive, pre-post design, we implemented in Porto, Coimbra, Lisboa, Setubal and Évora, education workshops on tobacco dependence treatment. Statistical analysis was performed using SPSS and a confidence level of 95%. Initial-final response comparisons were done using the Wilcoxon-test. **RESULTS:** All seventy-two nurses who attended the workshops and filled the questionnaires were enrolled (26.5% oncology nurses and 64% specialists). After the program, we observed an increase in the number of nurses who: 1) advised patients to stop smoking ($p=0,020$); 2) assess patients' interested to quit smoking ($p=0,001$); 3) recommend using a telephone line for smoking cessation ($p=0,001$); 4) analyze the barriers to cessation with patients not interested in quitting ($p=0,002$); and 5) inform patients and families on the importance of a home smoke-free environment after hospital discharge ($p=0,002$). Tobacco prevention and combat is known to benefit from involvement of health professionals training and formation as it increases tobacco related knowledge, allowing professionals to take evidence-based decisions^[2,4]. This is in line with our findings, as post-training nurses were found to be more prone to promote patients to quit smoking, to refer them to tobacco cessation appointments and to inform patients and families on the importance of a tobacco-free environment in their lives^[4]. Nurses are the largest group of health professionals, thus targeting these healthcare providers has the potential to accelerate changes in practice such that all hospitalized smokers will receive evidence-based treatment. In fact, if each of the nurses in Portugal were to help only 4 smokers a year to quit, nurses could reach 250,000 smokers and decrease by 10% the number of smokers in Portugal. **CONCLUSION:** In conclusion the program was effective in changing nurses' attitudes towards their role in tobacco control. Although short- and medium-term beneficiaries of the project are nurses, the ultimate beneficiaries are smokers supported in their tobacco cessation efforts. Health care systems should provide cessation resources and services.

Keywords: *Tobacco dependence, Portuguese Nurses, quit smoking, Smoking in Cancer*

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Balance in healthy elderly people practitioners of physical exercise in aquatic and terrestrial environment

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BACKGROUND: Decline in balance that occurs with ageing is a major risk factor for falls in older people^[1]. Some studies found that practicing exercises in aquatic environment are as effective as exercises practiced in terrestrial environment in function, mobility and quality of life^[2]. Benefits of exercise programmes in aquatic environment on static and dynamic balance are not fully clear^[3]. **OBJECTIVE:** To evaluate the static and dynamic balance in healthy elderly people practitioners of physical exercise in aquatic and terrestrial environment. **METHODS:** Participants aged 60 or more years old were included. Two groups were constituted: a group of 16 individuals practicing Hydrogymnastics (HG) and a group of 12 individuals practicing Gymnastics (GG). Static balance and dynamic balance were evaluated by the Single Leg Stance Test with open and closed eyes (SLS) (sec.) and the Timed Up and Go Test (TUG) (sec.), respectively, before (M1) and after (M2) participation in exercise classes, for a period of 12 weeks. In order to analyse the relationships between the quantitative variables the Student's T test for independent samples or the Mann-Whitney U test were used. To compare M1 with M2 the Student's T test for paired samples or the Wilcoxon W test were used. The significance level was set at $p < 0.05$. **RESULTS:** Mean age of participants was 73.69 ± 6.33 and 72.25 ± 5.53 in GH and GG, respectively. In M1 the groups were homogeneous in respect to background variables (age, BMI and years of exercise practice) and the different outcomes variables, except in the static balance with open eyes. In M2 there were no significant differences between groups.

From M1 to M2, statistically significant differences were observed in all tests in both groups: SLS with open eyes [(GH: $M1=5.81 \pm 7.51$; $M2=8.11 \pm 6.00$, $p < 0.001$); (GG: $M1=10.73 \pm 12.33$; $M2=14.13 \pm 20.48$, $p=0.005$)] and closed eyes [(GH: $M1=2.03 \pm 2.27$; $M2=2.79 \pm 2.58$, $p < 0.001$); (GG: $M1=3.33 \pm 2.60$; $M2=3.22 \pm 2.88$, $p=0.019$)], in the TUG [(GH: $M1=8.80 \pm 0.94$; $M2=7.89 \pm 0.80$, $p < 0.001$); (GG: $M1=8.24 \pm 1.37$; $M2=7.37 \pm 0.86$, $p=0.003$)]. **Discussion:** In the literature, it is clear that people with low physical fitness levels and fear of falls prefer aquatic rather than land exercises. Although some of the studies demonstrated that both training environments improve the elderly balance, there is a need to develop guidelines for clinical practice to select the exercise environment based on the individual characteristics. **CONCLUSION:** The practice of exercise, either in aquatic or terrestrial environment induced improvements in both static and dynamic balance.

Keywords: *dynamic balance, gymnastic, healthy elderly people, hydrogymnastics, static balance.*

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Acquired Communication Disorders: Informal Caregivers' Needs

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BACKGROUND: In the adult, there are several acquired health conditions that can affect communication and, therefore, the level of activity and participation of the person in the society^[3,5]. The acquired communication disorders besides its negative impact over the person's quality of life, also affects the family's quality of life, considering particularly the informal caregiver or caregivers who take an active role in monitoring and aiding the person on the different life settings^[4]. The communicative process is one of the reported difficulties in the interaction between the dyad: person with acquired communication disorders (PACD) and the informal caregiver^[1]. Research focuses mainly in the person's communicative difficulties. However, since communication is an interactive process and considering the important and active role that informal caregivers can have in supporting and facilitating communication and interaction, their communicative needs should also be assessed in order to enhance communication in the various contexts and with the different communication partners. It was not possible to find in the literature an instrument that specifically assesses the difficulties that caregivers have in communicating with the PACD. **OBJECTIVE:** Identify the communicative needs of the PACD's informal caregiver; Select items that have to be assessed when identifying the communicative needs of the PACD's informal caregiver. **METHODS:** Qualitative descriptive transversal study with a convenience sample of PACD's informal caregivers. Data

were collected through semi-structured interviews and analyzed following the principles of content analysis defined by Bardin^[2]. **RESULTS:** With this study, still in data gathering, the study aims to identify specifically the communication needs of the informal caregivers in order to produce scientific knowledge to be taken into account in the clinical practice of the speech and language pathologists. **CONCLUSION:** The assessment of these communication needs will allow the speech and language pathologists not only to enable the PACD, but also the informal caregivers, with suitable strategies to foster an effective and efficient communication.

Keywords: *Informal caregiver(s), Communication needs, Communication, Assessment, Speech Language Pathology.*

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Translation and Adaptation of the Assessment Instrument *Preschooler Awareness Of Stuttering Survey (PASS)*

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BACKGROUND: A person who stutters can develop feelings such as fear of speaking and shame, as well as negative attitudes and beliefs about himself as a communicator, based on their own experiences and on the reactions of the communicative partners^[1,2]. A broad assessment allows the identification of the impact of emotional factors in order to implement an early intervention, considering the personal and environmental factors that influence this fluency disorder^[2,3]. However, there is a limited number of instruments developed to assess emotional reactions of preschool children who stutter. Currently, there is only one assessment instrument translated and adapted to European Portuguese that assesses the feelings and attitudes and it has school age children who stutter as a target audience, *Scale of Children's Attitudes (A-19)*, by Grims and Guitar (1977)^[4]. **OBJECTIVE:** This research aims to translate and back-translate the assessment instrument *Preschooler Awareness of Stuttering Survey (PASS)* by Abbiati, Guitar & Hutchins (2015) to European Portuguese. **METHODS:** This is a cross-sectional descriptive qualitative study. The methodological procedures used were translation and back-translation^[5]. **RESULTS:** The translation was accomplished by two Speech Language Therapists - Translator 1 (T1) and Translator 2 (T2). T1 with a

broad experience in the field of stuttering, T2 with a broad experience in language and communication assessment and intervention. Both of them with experience in academic use of English language and European Portuguese as their mother language. The back-translation was conducted by two bilingual individuals without experience in health. T1 and T2 translations were compared and synthesized. Differences between translations were found and a meeting between T1 and T2 was scheduled. Disagreements were solved by discussing core aspects until a consensus decision was attained, resulting in a common final translation. This final version was sent to back-translators. Both back-translations were analyzed and compared with the original instrument. It was verified that back translations were equivalent to the original version. Back-translators used synonyms in their translations that did not affect conceptual and semantic equivalences. **CONCLUSIONS:** It was possible to obtain the European Portuguese pre-final version of PASS. The following methodological procedure, panel of experts, will allow its content validation. Consequently, the panel of experts will be held to continue this adaptation and validation process considering not only the semantic and conceptual aspects but also idiomatic and cultural equivalences. It will also allow to analyze if there is a need to add, modify or remove items.

Keywords: *Assessment, Feelings and Attitudes, Speech and Language Therapy, Stuttering, Translation*

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Factors associated to physical inactivity in school adolescents of the south region of Brazil

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BACKGROUND: Technological advances and facilities resulting from modernization have influenced the modification of adolescents^[1] life habits, especially regarding the adoption of sedentary behavior¹. This behavior is directly related to the appearance of chronic-degenerative diseases and the risk of

mortality in adult life^[2]. The World Health Organization recommends that children and adolescents should develop at least 60 minutes of moderate physical activity daily, including games, recreation, sports, play, or scheduled exercises in schools or in the community^[3]. **OBJECTIVES:** To analyze the factors associated with physical inactivity in school adolescents in the southern region of Brazil. **METHODS:** A cross-sectional study with data from the National School Health Survey (PENSE), from 2015. Sample of 2310 primary and secondary school students from schools in the three capitals of southern Brazil aged 13 to 19 years. Physical inactivity evaluated for < 60 minutes/week of moderate to vigorous. Analysis by SPSS 18.0, with chi-square and Fisher's exact test, Prevalence Ratio (PR), Confidence Interval (CI) 95%. Approved by Research Ethics Committee. **RESULTS:** Most males (53.4%), mean age 15.16 (SD 1.55), white color (63.4%), attending elementary school (43.3.2%) studied in the public network (79%), living with the mother (89.0%), living with the father (65.0%), low level of education of the mother (31.6%). As for sedentary behavior, 48.2% eat in front of the tv more than 5 days a week, 20.8% did less than 10 minutes of daily activity and 35.5% less than 60 minutes of daily physical activity. Associated physical inactivity ($p < 0.05$) for the female sex (RP1,956, CI 1,741-2,198), age 15 years and over (RP 1,254, CI 1.066-1.476); (RP1,268, CI 1.099-1.463), low maternal schooling (RP 1.141, CI1.009-1.290), not living with the father (RP 1.249, CI 1.117-1.396), feeling dissatisfied with the body (RP1,268; RP 1.469, IC 1311-1641). **CONCLUSION:** Physical inactivity associated with the female gender, older than 15 years, family factors and body image. The identification of these factors can contribute to the definition of intervention strategies through policies and health programs articulated to the other social sectors.

Keywords: *sedentary lifestyle, adolescents, student health, physical activity.*

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Factors associated with bullying in school adolescents in Southern Brazil

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BACKGROUND: Juvenile violence often occurs in community settings such as schools, including harassment, aggression, and bullying. The term "bullying" refers to acts of physical, psychological or sexual violence, intentional, intimidation, offense, humiliation, depreciation, mistreatment or threat by an individual or more, with the purpose of assaulting, frightening or to force someone against another unable to self-defend. Bullying behaviour affects 246 million children and adolescents per year worldwide, reaching 7.4% of Brazilian adolescents. It is at this age that future health standards are established, as a result of biological changes, social determinants, and risk and protection factors that modulate the individual, family, and community. It also highlights the concern with social status and peer rejection, favouring bullying and culminating in mild to severe injuries, as well as behavioural sequels that include alcohol and drug abuse, depression, anxiety, fear, suicide, unsafe sex, antisocial and illegal activities. **OBJECTIVES:** To analyse the factors associated with bullying in school adolescents in the Southern Region of Brazil. **METHODS:** This cross-sectional study was conducted with 2152 adolescents aged between 13 to 17 years (14.93±1.33), of both genders, registered at elementary and middle schools in the capitals of the Southern region of Brazil, who participated in the National School Health Survey (PeNSE) 2015. Microdata was analysed and provided by the Brazilian Institute of Geography and Statistics. Values of $p < 0.005$ and confidence interval (CI) of 95% were considered. This study was approved by the local Research Ethics Committee. **RESULTS:** Subjects were mainly composed of male (52.3%), Caucasians (63.6%), 89.4% of them living with their mother, 34.6% do not live with their father, 23.9% work, with low maternal schooling (51.6%). 38.9% had their first sexual intercourse, 27.5% experienced smoking, 68.4% alcoholic drinking and 16.7% illicit drugs. The prevalence of bullying in this sample was of 48.3%, associated with ($p < 0.05$) female gender, non-white ethnicity, family density with up to 3 people, sedentary lifestyle, and alcoholic drinking. The parents are little concerned about their children's issues, they are often mocked by colleagues, have few friends, with feelings of insecurity at school, physical aggression by adult family members, involvement in fights with knives, besides the nutritional status. **CONCLUSION:** Bullying is associated with female gender, non-white ethnicity, risk behaviours such as the use of alcoholic drinking and smoking, besides familiar, psychological and violence-related aspects.

Keywords: *bullying, adolescents, violence, student health.*

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Contributions of social network for older people's valuation of life

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BACKGROUND: Several age-related changes may challenge the maintenance of well-being and quality of life in advanced life. It is known that health status plays a significant role^[1], as well as psychological variables such as beliefs and attitudes^[2]. However, more doubts arise regarding the social aspects and their contribution in the way old people, and especially very old, evaluate their life^[3]. **OBJECTIVE:** This study aims to analyse the differences in well-being between the old and very old people and their correlation with social factors. **METHODS:** 247 people (mean age 81.18; SD 11.28), of these 124 aged 65-79 years and 123 aged 80 and over, answered to the Positive Life Valuation Scale^[4], to the Lubben Social Network Scale^[5] and to a set of socio-demographic questions. Descriptive analyses, t-test for independent samples and ANOVA adjusted for the age groups were performed using SPSS (IBM version 21.0). **RESULTS:** the older group (80+) had a lower valuation of life score compared to the younger one (mean of 21.0 (SD 4.4) vs mean of 15.8 (SD 6.1), $p < 0.001$). When analysing the influence of social factors on valuation of life, there is a significant effect, without interaction with the age group, of the following variables: not feeling alone, seeing your family as often as you would like, having 5 or more family members/friends with whom you see or speak at least once a month, have 5 or family/friends with whom you feel close to such that you could call on them for help and have 5 or more family/friends with whom you feel comfortable talking about personal matters. **CONCLUSIONS:** The present analysis focuses on the involvement of individuals to their life, which varies between the age groups considered. The analysis of the possible contribution of social factors suggests that the structural characteristics of social support networks, as well as their subjective and qualitative assessments, have an important contribution to how older people evaluate and want to prolong their lives. Along with the emphasis on health promotion and disease prevention issues, when intervening in older age, it is crucial to consider the role of the social network and how the support that derives from it is perceived.

Keywords: *valuation of life; advanced age; social relationships; loneliness.*

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A introdução da Escala OMNI na regulação do esforço em sessões de atividade física com idosos

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INTRODUÇÃO: O VIAS pretende estimular interações geracionais saudáveis sem esquecer a dimensão física e motora^[1]. A promoção da Atividade Física (AF) deve assegurar informação relevante sobre os níveis de esforço desenvolvidos, em particular quando a prática é autónoma. Como instrumento primário de controlo destacam-se as Rating Percieved Exertion (RPE) conhecidas como Escalas de Sensação Subjetiva de Esforço (SSE). A Borg Rating of Perceived Exertion Scale (Borg-RPE, 6-20) é definida em 15 níveis, de 6 a 20 pontos [2]. A escala OMNI-RPE, 0-10, desenvolvida para ultrapassar as dificuldades semânticas contém um modo descritivo verbal e um pictórico ao longo de 11 níveis, de 0 a 10 pontos, sendo que “o significado do esforço de cada descritor pictográfico está em consonância com o seu descritor verbal” [3 p452], facilitando melhor a sua identificação. Importa confrontá-la com dados objetivos medidos através da Frequência Cardíaca (FC). **OBJETIVO:** Caracterizar e contrastar os níveis de esforço objetivos (FC) e subjetivos (OMNI) em idosos durante partes de uma aula multicomponente de AF onde se introduziu a Escala Subjetiva. **METODOLOGIA:** A introdução da escala OMNI e recolha dos dados foi feita no mês de fevereiro de 2019, numa sessão de 60 minutos da disciplina de AF de uma Universidade Sénior da Região Centro de Portugal no ano letivo de 2018/2019. Orientada por um professor habilitado e experiente, teve objetivos multicomponente e vários períodos de diferentes intensidades de esforço. Da turma constituiu-se uma amostra aleatória de 9 sujeitos que frequentam essas aulas com a regularidade de duas vezes por semana, sendo três (33%) do género feminino e seis (66%) masculinos. A idade situou-se nos $73,66 \pm 4,92$ anos. Em IMC 4 são normoponderais, 2 são pré-obesos e 3 obesos – 2 classe I e 1 Classe II. No início e final de cada uma das 7 partes com diferentes intensidades, foram recolhidos os dados. A recolha de FC foi feita com 9 bandas e um sistema desenvolvido pela Firstbeat Technologies Ltd. (Jyväskylä, Finland) que permitem a coleta da FC por telemetria. A recolha da SSE foi feita através da OMNI-RPE, 0-10. Todos os sujeitos deram o seu consentimento informado e foi garantida a proteção de dados nos termos do RGPD. **RESULTADOS:** A FC no início da sessão oscilou entre 65 e 114 batimentos por segundo (bt/s). As FC mais elevadas situaram-se entre os momentos 5 e 7 (num total de 8). No momento 5, e relativamente à escala OMNI, 6 sujeitos consideraram-se no nível 4, 1 no nível 5 e 1 no nível 7 evoluindo para 4 no nível 5, 1 no nível 6 e 1 no nível 8. Por fim, já evidenciando alguma diminuição da SSE, no momento 7, 2 sujeitos auto situaram-se no nível 4, 3 no nível 5 e 1 no nível 6. Estes indicadores subjetivos são, de alguma forma, concordantes com as FC observadas que, nos mesmos momentos (5 a 7), registaram como valores mais baixos, respetivamente, 95, 87 e 80. As FC mais elevadas de toda a sessão foram observadas nos referidos momentos com 139, 140 e 135 bt/s, respetivamente. A análise correlacional intersujeitos evidencia a não existência de

uma relação significativa entre os indicadores subjetivos e objetivos ($p > .05$), independentemente do momento da sessão e da intensidade associada a cada momento. A análise correlacional intrasujeitos evidencia a existência de uma relação significativa entre os indicadores subjetivos e objetivos ($p < .05$), considerando todos os momentos da sessão e, independentemente da intensidade diferenciada associada a cada momento. A comparação entre momentos contíguos da sessão aponta para resultados concordantes entre indicadores objetivos e subjetivos (momentos M1-2, M2-3, M4-5, M6-7 e M7-8) e, momentos dissonantes (M3-4 e M5-6). **CONCLUSÃO:** Os resultados, objetivos e subjetivos de esforço apontam para uma variabilidade interindividual muito elevada, sem evidência estatística de associação entre os dois indicadores. A análise intraindividual dos mesmos indicadores, apresenta-se significativo a $p < .05$ e $p < .01$. A comparação entre momentos exprime o impacto objetivo e subjetivo das diferentes intensidades da sessão, com valores crescentes e decrescentes de ambos os indicadores. Importa sensibilizar os idosos, e os técnicos, para a relevância dos indicadores subjetivos de esforço, embora nem todos os praticantes o evidenciem com o mesmo grau de acuidade, assim como importa que as aplicações tecnológicas do VIAS possam vir a incluir escalas subjetivas que se demonstram suficientes para o registo do impacto do exercício em ações motoras.

Keywords: *Atividade Física, Idosos, OMNI, Frequência Cardíaca.*

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The mentoring process: for the promotion of a healthy emotional experience in nursing students

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BACKGROUND. The nursing students live, frequently, a very intense emotional, exhausting and sometimes disturbing experience, due to an intense and very emotional demanding academic experience^[1,2], empowered by the inherent weaknesses, to their life processes and personality development, and that mutual influence can weaken their health and emotional well-being. **OBJECTIVES:** 1) To characterize the emotional experiences undergone by the students of Degree in Nursing; 2) Understand the importance of Mentoring related to the healthy process of student's integration in higher education. **METHODS:** It is a descriptive and correlational study, quantitative and qualitative. The Emotional Competency Questionnaire^[3] was applied to a sample of 238 nursing students and two Focal Groups for a total of 10 teachers. **RESULTS:** Most students are female (84%) and attend the first and second years (67%). It is verified that the female sex is associated with a better

perception ($p = .011$) and emotional expression ($p = .025$). The student's opinion about adaptation to higher education is related to a greater ability to deal with emotions ($p = .006$). Regarding school performance this is directly related to the student's ability to manage his/her emotions ($p = .005$). As for the focus group findings emerged the following categories: difficulties experienced by students; negative emotional experiences; events that trigger negative experiences; factors facilitating the training processes; mentoring program implementation. **CONCLUSIONS:** The mentoring process is an individual process that enhances support, safety and adaptive emotional management, and facilitates student learning and growth^[4]. The implementation of mentoring programs in Higher Education Institutions contributes to the healthy integration of the student and, consequently, his socialization and academic success.

Keywords: *Mentoring; Nursing; Students; Emotions.*

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Nutritional evaluation of Portuguese children ready-to-eat breakfast cereals

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BACKGROUND: Ready-to-eat breakfast cereals (RTEBC) are widely consumed by children and are an important part of their nutritional intake. Although there are positives associated with RTEBC, such as their high micronutrient contents^[1], many RTEBC are highly processed, with children's cereals in particular containing high levels of energy, sugar and sodium^[2]. **OBJECTIVES:** The objective of this study was to evaluate the nutritional content and "healthiness" of children-RTEBC and to assess the added sugar and salt contents in these products. **METHODS:** We collected data on the nutritional content of 54 children's breakfast cereals found in the two largest supermarket chains in Viseu. RTEBC were considered targeted for children if the package included a free toy or activity; a television or movie themed promotion; a licensed cartoon character or any other cartoon drawing or a photo of a child on the package. Nutritional information of each cereal (without added milk) was taken from the Nutrition Facts table on the packaging and included energy (kcal), total and saturated fats (g), sodium (mg), fibre (g), sugar (g) and protein (g). The various brands were classified according to a model based on the UK Nutrient Profiling Model^[3]. The

following calculation was completed for each cereal: (energy points+saturated fat points+sugar points+sodium points) – (fibre points+protein points). Products with less than four points were considered “healthier”; those between four and eight were considered “intermediate” and those scoring eight or more were considered “less healthy”. The percentage of fruits, vegetables and nuts was not considered. **RESULTS:** On average, children-RTEBC presented, per 100g, 399.5 kcal; 5.8g of lipids (1.98g saturated lipids); 470mg of sodium, 28.7g of sugar, 8.8g of protein and 4,6g of fibre. Most children-RTEBC (42.6%) were considered “healthier” However 20.4% were considered “less healthy”. When compared with “healthier” children-RTEBCs they presented significantly ($P \leq 0.001$) higher contents of sugar, saturated fats and sodium and lower fiber contents. **CONCLUSIONS:** Our findings reflect current evidence showing that a large number of children-RTEBC are not healthy breakfast choices^[4]. The high sugar levels, the high saturated lipids and low fibre content of these products are worrisome given Portugal’s high childhood obesity rates. Moreover, high sugar and salt contents were found to promote excessive consumption of these products^[5]. Therefore, it is essential for companies to reformulate their products, decreasing added sugars, saturated lipids and sodium and increasing fibre content, in order to become healthier choices for Portuguese children.

Keywords: children, food labeling, ready-to-eat breakfast cereals, sugar, salt

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Treino físico e mental combinados com estimulação cerebral não invasiva melhoram as funções executivas, aumenta a atividade cortical de idosos frágeis: considerações sobre a qualidade de vida

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INTRODUÇÃO: o exercício físico vem sendo relacionado com melhorias na condição física^[1] e mental^[2], inclusive em doenças crônicas, ou degenerativas como o diabetes^[3], doenças cardiovasculares^[3] e doenças relacionadas ao sistema nervoso central como a doença de Alzheimer. Todavia, uma condição emergente, que é a fragilidade física, ainda carece de alternativas para a prevenção, contenção e tratamento visto que nem todos os sujeitos frágeis podem realizar com segurança as práticas físicas consagradas contra a fragilidade, estimulando estudos sobre a estimulação cerebral não invasiva conjugada a exercícios físicos sobre esta condição que é considerada uma das portas de entrada para a doença de Alzheimer o que, de fato, pode proporcionar melhores condições de qualidade de vida. **OBJETIVO:** investigar se um programa de treino conjugado composto por estimulação cerebral não invasiva, exercícios físicos e mentais melhoraria o funcionamento cerebral, físico em idosos frágeis, bem como determinar o seu impacto sobre a qualidade de vida de idosos. **MÉTODOS:** sessenta e sete indivíduos voluntários, com 73,93 \pm 5,61 anos, selecionados convenientemente no Centro de Convivência do Idoso e no SESC de Porto Velho, Rondônia, Brasil, após assinarem o termo de consentimento livre e esclarecido, foram selecionados por meio da aplicação da Escala de Fragilidade de Edmonton antes do início da intervenção e, os que não apresentassem fragilidade foram excluídos. Desta maneira eliminou-se 18 sujeitos do grupo inicial. Então, quarenta e nove idosos moderadamente frágeis foram divididos randomicamente em dois grupos, denominados grupo controle (GC n = 28) e grupo experimental (GE n = 21). O GC participou de um programa de intervenção composto por exercícios mentais e físicos, enquanto o GE praticou os mesmos exercícios mentais e físicos, mas em conjugação com a estimulação cerebral não invasiva (binaural). Antes e depois do período de intervenção, os grupos foram examinados pelo teste GDLAN, Digit Span, Reaction Time, e as ondas Alpha, Beta e ritmo SMR foram registradas por meio do instrumento (Procomp Neurofeedback). Os procedimentos estatísticos seguiram duas fases distintas, primeiro, o teste de Kolmogorov-Smirnov (com valor de Dallal-Wilkinson-Lille for P) foi usado para examinar a normalidade dos dados, os quais foram revelados como não-paramétricos. Após esse procedimento, os dados foram plotados para análise descritiva por meio da média e do desvio padrão. Segundo, e seguindo a natureza dos dados, uma ANOVA TWO WAY com Post Hoc de Bonferroni com significância de 5%. **RESULTADOS:** os dados comparativos intragrupo mostraram que o GC não apresentou modificações do pré para o pós teste em todas as variáveis investigadas. Por outro lado, o GE mostrou mudanças positivas nas variáveis de memória de trabalho e tempo de reação, bem como melhora considerável nas ondas cerebrais Beta e SMR. Essa melhora ocorreu paralelamente à melhora da saída de potência do Ritmo SMR. **CONCLUSÃO:** pessoas idosas frágeis podem ser beneficiadas pela estimulação cerebral não invasiva como uma estratégia eficiente para melhorar o impacto do treino físico e mental sobre a saúde mental e com possíveis influências na qualidade de vida uma vez que melhora uma das dimensões classificadas como influentes na qualidade de vida.

Keywords: Fragilidade, Cognição, Estimulação Cortical Não Invasiva, EEG, Funções Executivas. Qualidade de Vida, Reação ao Tempo, Memória de Trabalho.

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Exercício intervalado de alta intensidade pode ser uma ferramenta útil na prevenção de doenças cardíacas e metabólicas de idosos sedentários: impactos na qualidade de vida

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INTRODUÇÃO: Diferentes estudos demonstraram efetividade do HIIT sobre o sistema cardiovascular de adultos saudáveis^[1–3], todavia, os seus efeitos sobre a população idosa, bem como a sua segurança ainda precisa, ser investigados. **OBJETIVO:** identificar a influência do exercício intermitente de alta intensidade (HIIT) sobre a saúde física, composição corporal, performance física e qualidade de vida de idosos. **METODOLOGIA:** idosos (n=16) foram selecionados de maneira conveniente por meio de convite do pesquisador e, após assinarem o termo de consentimento livre e esclarecido, foram submetidos a um programa de treino de HIIT por 60 dias, 3x por semana, 40 minutos entre treinamento e recuperação com estímulos de 60 segundos e 60 segundos de recuperação. Coleta de sangue antes e após a intervenção foi realizada para as investigações hematológicas, bioquímica e perfil lipídico. O desempenho neuromuscular e capacidade respiratória foram determinadas por meio de testes neuromusculares; a composição corporal quantificada por meio da balança de bioimpedância octapolar In Body modelo 230 e a qualidade de vida foi acessada por meio do questionário WHOQOL antes e após o período de intervenção. **RESULTADOS:** o HIIT foi capaz de diminuir o triglicérideo, aumentar a lipoproteína de alta densidade como modificações, a hemoglobina, o volume corpuscular médio e a hemoglobina corpuscular média foram modificadas denotando melhora na saúde hematológicas, ao mesmo tempo que não houve evidência de aumento das enzimas bioquímicas relacionadas ao coração, fígado ou rins. O HIIT ainda foi capaz de modificar a massa corporal total, o índice de massa corporal, a concentração de gordura na região central do corpo como importantes para a saúde metabólica e, a capacidade respiratória máxima, esta, relacionada com a saúde cardiorrespiratória. A qualidade de vida também melhorou após 60 dias de treinamento e nenhuma intercorrência clínica ou cardiovascular negativa à saúde foi relatada. Os resultados do WHOQOL sugerem melhora nos índices de qualidade de vida. **CONCLUSÕES:** esses resultados suportam a ideia de que essa modalidade de exercícios é eficaz para a melhora da saúde de idosos, diminuir a quantidade de gordura corporal, índice de massa corporal, no aumento na capacidade cardiorrespiratória e performance neuromuscular sem intercorrências negativas à saúde durante o período de treinamento ou em outro momento que pudesse ser associada ao

estudo sugerindo eficácia e segurança adequadas nesta população o que permite inferir que o HIIT é uma ferramenta eficaz e segura para melhorar a saúde física e a qualidade de vida de idosos saudáveis.

Keywords: *Treinamento Intermitente de Alta Intensidade. Composição Corporal. Desempenho Físico. Saúde Humana. Bioquímica. Hematologia.*

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Effect of carrageenan on the lipid profile in humans

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BACKGROUND: Currently cardiovascular diseases (CVDs) are considered one of the major epidemiological problems, representing the main cause of death worldwide^[1]. Inadequate eating habits and sedentary lifestyles alter the lipid profile, favoring the elevation of total cholesterol (TC), triglycerides (TG), LDL cholesterol (LDL-C) and decreased of HDL cholesterol (HDL-C) major risk factors for the development of CVDs. Richness in minerals, vitamins, carbohydrates, dietary fibers and low lipid content are nutritional characteristics of all edible macroalgae^[2]. Carrageenans have several health benefits, such as: antioxidants, anticancer, antilipidemic, anticoagulants, immunomodulators, antifungal, antiviral and digestive health support^[3]. Carrageenans (E407) extracted from the red macroalgae (Rhodophyta, Gigartinales), are long chain carbohydrates with numerous applications in the food, biotech, cosmetic and pharmaceutical industries^[4]. Its ability to form gels enables its application in foods such as gelatins of vegetable origin and puddings. **OBJECTIVE:** The main objective of this study was to evaluate the effect of vegetable gelatin (E407) consumption on the lipid profile. As specific objectives: to estimate the degree of adherence to the Mediterranean diet in the sample and to calculate the association between adherence to the Mediterranean diet and the lipid profile. **METHODS:** The methodology will involve 40 volunteers (adults, with TC values ≥ 200 mg/dL and apparently healthy), divided into experimental group and control group. The experimental group will consume

100 mL of vegetable gelatin per day for 60 days. and the control group does not eat gelatin. To all participants, two venous blood samples will be taken before beginning the intake of vegetable gelatin (T0) and 60 days after consumption (T1). In the two samples per participant, the concentrations of TC, TG, LDL-C and HDL-C will be evaluated, using commercial kits and spectrophotometry methodology. Additionally, the MEDAS instrument (Mediterranean Diet Adherence Screener), which was developed within the framework of the PREDIMED study (Prevention with Mediterranean diet), was applied. This scale is a tool that assesses the degree of adherence to the Mediterranean diet^[5]. The statistic will be performed with the IBM SPSS 25.0 Software, considering statistically significant values of $p < 0.05$. **RESULTS:** The concentration of TC, TG, LDL-C and HDL-C in T1 is expected to decrease compared to T0. **CONCLUSIONS:** lower concentration of the parameters evaluated in the lipid profile, due to the ingestion of gelatin derived from macroalgae, may contribute to the prevention of CVDs.

Keywords: Carrageenan; Total cholesterol; Triglycerides; LDL cholesterol; HDL cholesterol.

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Sleep quality regarding work regime: an exploratory study in a sample of factory workers

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BACKGROUND: In nowadays society, shift work has been increasingly introduced in several organizational contexts, according to technological advances and populations needs^[1]. The emergency of this phenomenon has evoked several concerns about public health, relatively to workers sleep quality impact. Because of the scarcity of studies in this matter in the district of Visu, we propose to present the preliminary results of a quantitative and exploratory study that is ongoing with factory workers. **OBJECTIVE:** This study aims to understand if the work regime (fixed shift and rotating shift) influences the quality of sleep in factory workers, acting as a differentiating factor. **METHODS:** The sample included 8 participants, 4 (2M; 2W) working in a three-shift rotation system in a pharmaceutical company, and 4 (2M; 2W), working in a fixed shift system in a waste recycling factory for electrical and electronic equipment. The mean age of participants studied was 33.25 years. The data were collected through the Pittsburgh Sleep Quality Index (PSQI) authored by Buysse, et al., (1989), adapted and translated to Portuguese^[2], that measures retrospective sleep quality and

disturbances over a one-month period. The cutoff point is 5, scores below 5 indicate a good quality of sleep. When the sum of the points is equal or higher than 5 reveals a lower quality of sleep, being the maximum score of 21 points^[3]. The non-parametric Mann-Whitney test was used to analyze the differences between the groups, using SPSS 20. **RESULTS:** Workers with fixed shifts had an overall mean score of 6.25 points on the IQSP and rotating shift workers obtained an average IQSP score of 10.75 points. Statistically significant differences were observed between the two groups ($p = 0.029$). **CONCLUSIONS:** Results suggest that workers with rotating shifts have a lower quality of sleep, relatively to workers with fixed shifts, pointing agreement with the literature review. As an exploratory study, this one presents limitations regarding the size of the sample, considering it is necessary to carry out a larger study and with statistical analyzes of the IQSP relationship with sociodemographic variables. Practical implications will be discussed.

Keywords: sleep quality, work regime, factory workers

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BISCUITS HEALTHY: Innovation with Incorporation of a Sheep Whey Residue “Sorelho”- preliminary study
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Abstract

BACKGROUND: Biscuits are a ubiquitous snack food valued for being readily available, affordable, and for their long shelf-life^[1]. They cannot, however, be regarded as healthy because they usually contain high levels of easily digested carbohydrates and fats, low levels of fiber and modest levels of protein, being made from flour, butter and sugar^[2]. The development of new biscuit formulations is a worthwhile challenge if considering the nutritional needs of different sectors of the population. When addressing the development of new products, is important to reuse by-products, particularly those resulting from local productions. “Sorelho”, a residual deproteinized whey known as second cheese whey, is obtained from cheese manufacture. It contains approximately 60% of the original whey dry matter and is a common by-product of small/medium scale cheese plants. Although it has little commercial value, it is produced in relatively high volumes implying complex processing before disposal^[3]. **OBJECTIVES:** The aim of this work was to produce biscuits with incorporation of “sorelho” obtained from the production of Serra da Estrela Cheese. **METHODS:** Biscuits were prepared using wheat flour, baking powder, whole egg, salt and “sorelho”. Honey and olive oil were used as sweetener and fat. Lemon zest and cinnamon was used as aroma. Protein, fat,

ash and crude fiber and carbohydrates were determined according to the methods described in A.O.A.C.^[4]. Fatty acid profile was evaluated, following the standard methodologies. Salt content was quantified using Charpentier-Volhard method. Finally, the caloric value was calculated. **RESULTS:** The nutritional composition for 100g was as follows: Sugars (55.9g), of which added sugars (17.6g); Proteins (7.0g); Lipids (7.0g); Fiber (1.4g) and Salt (0.3g). The fatty acid profile showed the following fatty acids composition: Saturated (1.3g), monounsaturated (4.3g) and Polyunsaturated (0.6g). The energy value for 100g was 317.8Kcal (1330kJ). The application of the Nutriscore model to the portion size (35g=5biscuits) shows a hypocaloric (111Kcal) product with low values of fast-absorbing sugars, total fat, saturated fats and salt (green color). In addition, they have a profile of antiatherogenic fatty acids. **CONCLUSIONS:** This preliminary study demonstrated that the biscuits elaborated presented a balanced quantity of carbohydrate, protein, fat and crude fiber. Nevertheless, it is still necessary to improve the formulation, mainly at the sensorial level, as well as completing the analyses. So, it seems feasible and advantageous to use the “sorelho” resulting from the manufacture of Serra da Estrela Cheese to produce a nutritionally balanced pastry product.

Keywords: *biscuits, sorelho, sheep milk whey by-product, nutritional value*

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Falling in nursing homes: impact of fear on the life of the older people and the health care professional in Portugal
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BACKGROUND: Fear of falling is a predictor of decline in functionality, dependence, impairment of mental health and quality of life in the institutionalized older people^[1]. Regardless of whether or not injury occurs, the older people and health care

professionals of the nursing homes develop fear of a new episode^[2-3]. The results of studies with older people living in long-term care facilities add that the health care professionals themselves, after a first incident, for fear of a new fall, impose restrictions on activity and social participation which promotes dependency and isolation^[3]. **OBJECTIVE:** To understand how the fear of falling leads to the limitation of activity and the restriction of participation in the institutionalized older people in Portugal. **METHODS:** This study was embedded in the qualitative and interpretative paradigm. The method selected was the Grounded Theory, in the methodological perspective of Strauss^[4]. Different data collection techniques were combined: participant observation of professionals and older people, interviews with both, analysis of the documentation produced by professionals about the phenomenon under study. This study took place between October 2016 and January 2018 in two nurse homes. The study was approved by the Ethics Committee. **RESULTS:** The sample consisted of older people with a history of falls after institutionalization and professionals (nurses, physicians, caregivers, among others) of two nursing homes. The analysis of the results proves that the fear of falling is transversal to the older people and it guides the relation of these with the professionals. The option of not communicating fall events to the health care professionals is a conscious option on the part of the residents, to avoid the limitation of the activity and the restriction of participation. On the other hand, the caregivers don't communicate, the residents falls, to the rest of the team because they are afraid of recrimination by the colleagues. Overprotection of the older people who has fallen is accepted as a protective measure and rarely questioned by the negative impact it has on the functionality of the older people. This problem has a strong ethical component. **CONCLUSIONS:** This study reveals that not only is the person afraid to fall, but professionals also feel this fear and make decisions based on that feeling. The impact of fear of falling in nursing homes is a challenge to prevent falling, to training and to the existence of effective leadership programs for the control of this public health problem.

Keywords: *Accidental Fall, Aged, Homes for the aged, Fear, Physical restraint*

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Minoan Rum – Creation of an innovative product: Rum of olive aroma

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BACKGROUND: The Food Industry, namely the area of Food Innovation is growing day by day. Finding strategies to respond to consumers, who increasingly seek differentiated products, has become one of the biggest concerns of companies these days. Products can be innovated through significant changes in their potential, important improvements to existing products as well as in process innovations^[1]. **OBJECTIVE:** The aim of our innovation was to create a spirit drink, Rum, enriching it with a touch of the Mediterranean diet, namely introducing the olive flavor, thus combining the characteristics and benefits of olive with the trend of “classic spirits reinvented”, presenting novelty to the consumer that matches market behavior. **METHODS:** The method used in the production of Minoan Rum was the combination of various spices and green olives that underwent maceration, so that we were able to incorporate the flavor of the olive in the drink, followed by a filtration, which allowed us to obtain a clear drink. The maceration was carried out in a closed container, where spices and green olives were placed, remaining in rest for 7 days. During the 7 days the preparation was shaken occasionally. This operation was repeated 2 times. After reaching the desired flavor, the filtration was performed, which consisted of the passage of the mixture that underwent maceration through a paper filter, into a container. **RESULTS:** The final result of the maceration and filtration was a spirit drink, with a mild olive flavor, with the intense flavor of the spices, with a golden color and a specific clarity of a Rum and a delicate aroma, where the presence of the olive was perceived. This filtrate was subsequently submitted to a panel of evidence. The Panel of tasters after the beverage test answered an individual questionnaire, where you can evaluate the following aspects: color, taste, odor, liquid uniformity and general appearance. At the end of the inquiry they indicated to us whether they would have liked the product and whether it would be a product they would buy. **CONCLUSIONS:** The conclusion obtained after analyzing the responses obtained in the survey was extremely satisfactory where the tasters reported a mild and pleasant taste of the olive and the aroma described as being fantastic. Most liked it and would buy this product. In short this work has allowed us to develop a spirit drink from which one can derive some benefit from its nutritional characteristics present essentially in the ingredient that aromatizes this drink, the green olives.

Keywords: *Development, Innovation, Olives, New Product, Rum*

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Functional Capacity Exercise Program for Institutionalized Fragile Elderly

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BACKGROUND: The projections report an increase in the elderly population due to the increase of average life expectancy^[1]. With aging, there are multiple chronic pathologies that promote fragility, vulnerability and decrease in quality of

life^[2]. These are responsible for 80% of mortality in European countries. Physical exercise demonstrates the best cost-effective medicine in the prevention and reduction of these deficits, presenting functional, physiological and cognitive benefits^[3,4]. **OBJECTIVE:** Verify how an exercise program inserted in the community presents benefits in the functional health of individuals considered fragile. **METHODS:** The basic bibliographic review for this study was PubMed, Pedro, ACSM Guidelines and documents of health organizations such as DGS, NHS, WHO and WHO. The application of the study will be in a nursing home of Viseu. In this context, specific exercises will be introduced in a group, which will later be compared to a group in which these activities will not be introduced. To do so, an initial evaluation will be carried out using a sociodemographic questionnaire and the accomplishment of scales, such as clinical scale of fragility, Tinetti index, FES scale and Barthel scale. The study will last for two months, in which the application of the activities will take place in a period of 6 weeks. Subsequently, a re-evaluation will be carried out, collecting relevant data, which will be analyzed through the Statistical Package for Social Science (SPSS), in order to verify the statistical relevance and the results obtained during the study implementation. We will apply a descriptive analysis, the Kolmogorov-Smirnov test using a p value of $p \leq 0.05$ for the statistical analysis. **CONCLUSION:** The aim of this study is to verify the effectiveness of an exercise program in improving functional health, thus promoting the improvement of quality of life.

Keywords: *Elderly, Frailty Syndrome, Exercise Programs, Exercise Programs Elders*

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Food policy in school and health sector: an initial approach to the national framework

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BACKGROUND: In Portugal there is an increase concern about public health, especially regarding food consumption, and the need to promote healthy lifestyles that improves the well-being of the population^[1]. Influenced by the guidelines of the WHO (World Health Organization), and European Commission (EC) directives, emerges, in 2012, the first Portuguese National Program for Healthy Nutrition^[2,3]. This program introduces in their core axis the goal to modify the availability of certain food products, giving a specific focus about schools, health and work environments and public spaces^[4]. **OBJECTIVE:** We intend to describe and outline the principal regulations and modifications in the national legal frameworks concerning food policy,

specifically, in the school and health sector. **METHODS:** A documentary analysis of the legal documents was conducted followed by a content analysis that provided categories used for further understanding and discussion. **RESULTS:** The reviewed legislation highlighted the evolution and expansion of food regulations, seeking to diminish the availability and access to specific kinds of foods, in particular with high caloric density and energetic properties. **CONCLUSIONS:** We conclude that the steps already in place by the national food policy have a great potential for maximizing behavioral change towards an adoption of healthy lifestyles and conscious food consumption. We also consider that this is an opportunity to reflect about monitoring and assessment measures of the food policy, in order for them to have a more significant impact. Future lines of action will be discussed.

Keywords: *food policy, public health, school and health sector*

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Risk of Falling in Institutionalized Elderly: A Reality with Increasing Risk

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BACKGROUND: Institutionalized elderly present a higher risk of falling than those who are not. The issue of falls among elderly people should be considered as a serious public health problem because of its consequences and permanent costs. **OBJECTIVE:** This study will intend to assess the risks and the determinative factors of falls among institutionalized elderly. **METHODS:** A non-experimental, cross-sectional, descriptive- correlational and quantitative study. We used a non-probability convenience sampling composed of 136 elderly people who were institutionalized at the time. They were between 65 and 99 years old, with a 85.98 years old average age. To collect the data we used a protocol formed by questions about these people's socio-demographic, contextual and clinical characterization. We also used the Family Functionality Scale, the Self-care Dependency Evaluation Scale and the Tinetti Scale (POMA I). **RESULTS:** Most of the people from our sample show a high risk of suffering from falls: we have concluded that about 45.6% of elderly people present a high risk of falling, 16.5% a medium risk and 38.2% a low risk of suffering from this kind of accident. We also observed that the risk of falling was higher among elderly who showed the following characteristics: in females ($p=0,014$), in those who show a poor literacy ($p=0,000$), in those who exhibit any kind of cognitive impairment ($p=0,014$), in people who suffer from neurological and osteoarticular diseases ($p=0,000$) and in elderly who suffer from loss of visual and hearing acuity ($p=0,010$). By

contrast, the elderly who experience a better autonomy as far as their walking capacity, personal hygiene and medication are concerned are those who show a lower risk of fall accidents. **CONCLUSIONS:** Falls are becoming a serious problem in the elderly population, requiring health professionals to effectively intervene in their prevention.

Keywords: *elderly, risk of falls, functional ability, balance*

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Physical activity levels of Portuguese Medical Doctors and their promotion habits in clinical practice

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BACKGROUND: Regular physical activity (PA) constitutes an essential resource for disease prevention and the promotion of the population's quality of life^[1-3]. It contributes to global health benefits and it can be considered as a therapeutic method by itself, or even to effectively complete a drug treatment^[1]. Medical Doctors (MDs) are in a privileged position to promote PA within the population, reinforcing the importance of adopting healthy behaviors^[2,3]. **OBJECTIVE:** This study aimed to determine the relationship between the PA levels of Portuguese MDs and their habits of PA promotion in clinical practice. **METHODS:** The study's target population included MDs with activity in Portugal, with registration in the *Serviços Partilhados do Ministério da Saúde* and access to the software *Prescrição Médica Eletrónica (PEM)*, who responded to the form "Promotion of Physical Activity in the National Health System" available in the PEM during January 2018. **RESULTS:** 961 valid responses were registered. The average age of the participants was 44 ± 13 years, being 59% women. Regarding the variable "Promotion of PA in clinical practice" 93% of MDs reported promoting PA in their medical appointments. As for the "Regularity of PA promotion", it was found that among MDs promoting PA, 40% do it with high regularity and 21% with very high regularity. Regarding the level of PA (assessed by the IPAQ) reported by MDs, 26% reported a high level, 45% a moderate level, and 28% a low level. It was found that MDs who reported a high level of PA advise PA in their clinical practice more regularly than MDs who reported a

moderate and a low level, as well as MDs who reported a moderate level of PA promote more regularly than those who reported a low level ($p= 0.001$, $p< 0.001$, and $p= 0.047$, respectively; $r = 0.183$). MDs who reported high and moderate levels of PA attributed greater relevance to the promotion of PA in health services compared to MDs who reported low levels ($p< 0.001$, and $p= 0.033$, respectively; $r = 0.123$). **CONCLUSIONS:** The regularity with which Portuguese MDs promote PA in their clinical practice seems to be associated with the level of PA reported by them. Moreover, MDs who report higher levels of PA attribute greater relevance to its promotion in health services. So, increasing the level of PA of these professionals can be a good strategy to promote citizens' PA through the national health system.

Keywords: *physical activity, medical doctors, patients, promotion, health system*

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Relationship between perceived social support and dependence on online video games, in a sample of Portuguese adolescents

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BACKGROUND: Several studies have suggested the existence of a relationship between video games addiction and the low satisfaction with the social support network, namely with regard to the relationship with parents^[1,2]. **OBJECTIVES:** The aim of this study is to explore the relationship between perceived social support and dependence on online video games in a sample of Portuguese adolescents. **METHODS:** The convenience sample is composed of 135 adolescents (64 females, 71 males), aged between 12 and 18 years ($M = 15.28$, $SD = 1.37$). The subjects were evaluated by the Portuguese version of the Internet Gaming Disorder Scale - Short-Form (IGDS9-SF)^[3] and by the Social Support Satisfaction Scale (ESSS)^[4]. Spearman's correlation has been used to explore the relationship between ESSS (global measure and factors: satisfaction with friends, intimacy, family satisfaction and social activities) and IGDS9-SF. **RESULTS:** There were no statistically significant correlations for a significance level of .05 between IGDS9-SF and the overall ESSS measure, satisfaction with friends, intimacy and social activities. Regarding the family satisfaction dimension there was a weak but statistically significant negative correlation ($\rho = -.198$, $p = .022$). **CONCLUSIONS:** The results indicate, in a convergent way with the literature, the existence of a negative correlation, although weak, between family satisfaction and the intensity on videogames addiction. This study adds evidence to the importance of the quality of family relationships as a protective

and health promotor factor. Unlike of what was expected, no significant correlations were found between dependence on video games and perceived social support, considered globally and in its dimensions: satisfaction with friends, intimacy and social activities.

Keywords: *adolescents, social support, family, video games, internet*

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A influência da atividade física desportiva na percepção corporal numa população da região do Vale do Sousa Pedro Flores¹, Luís Ferreira², Carlos Moreira³, Emília Alves⁴ Carlos Soares⁵, António M Monteiro⁶, Pedro Forte⁷

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INTRODUÇÃO: O corpo é um loco inesgotável de transformações onde prolifera a criatividade e é transformado pelo indivíduo para representar e inserir-se na sua cultura. Várias são as estratégias que visam a alteração da condição corporal. Entre elas, demarca-se a prática desportiva e/ou de exercício físico. **OBJETIVO:** Assim, o objetivo principal deste estudo foi comparar os níveis de satisfação com a imagem corporal entre indivíduos sedentários, praticantes de atividade física, formal ou recreativa, e desportistas. **METODOLOGIA:** A amostra foi constituída por 899 indivíduos, dos quais 273 eram sedentários (sem qualquer tipo de atividade física desportiva), 494 sujeitos eram considerados ativos (com uma frequência de exercício físico de pelo menos duas vezes por semana) e 132 sujeitos eram considerados desportistas (praticantes de pelo menos uma atividade desportiva formal). A idade média do grupo dos sujeitos sedentários foi de 32,40 ($\pm 10,10$) anos, do grupo dos ativos foi de 28,7 ($\pm 9,9$) anos e dos desportistas foi de 28,9 ($\pm 9,8$) anos de idade. O instrumento utilizado para avaliar o grau de satisfação com a imagem corporal foi o questionário Body Image Satisfaction Questionnaire (BIS) de Lutter et al (1986), traduzido e adaptado para a população portuguesa por Abrantes (1998). Após análise da normalidade e homogeneidade das distribuições, foi utilizada a análise inferencial não paramétrica. O teste de Mann-Whitney permitiu realizar a comparação de médias entre os grupos. Foi considerado o nível de significância de 5%. **RESULTADOS:** Os principais resultados indicam que independentemente do tipo de prática desportiva a que as pessoas aderem, a satisfação com a imagem corporal é significativamente

superior à dos sedentários. Os sedentários apresentaram uma satisfação com a imagem corporal de 3,35 ($\pm 0,64$), os ativos de 3,62 ($\pm 0,56$) e os desportistas de 3,75 ($\pm 0,63$). Verificaram-se diferenças significativas entre os sedentários e os sujeitos ativos ($p < 0,001$), entre os sedentários e os desportistas ($p < 0,001$) e entre os ativos e os desportistas ($p = 0,016$). **CONCLUSÕES:** Este estudo permitiu verificar que os sujeitos sedentários apresentaram uma menor satisfação com a imagem corporal e uma menor prevalência de indivíduos com uma boa satisfação com a imagem corporal. Desta forma, pode-se concluir que os sujeitos mais ativos são os que apresentam maior satisfação com a imagem corporal.

Keywords: *Satisfação imagem Corporal, Atividade Física, Prática Desportiva.*

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Associative study between handgrip strength, body composition and functional fitness in healthy elderlies

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BACKGROUND: Poor handgrip strength is associated with elderly's disability [1,2]. As far as our understanding goes, independent elderlies trend to have high levels of quality of life [1]. Even more, body composition and functional fitness presents association with quality of life [2]. **OBJECTIVE:** Thus, the aim of this study was to assess the associations between body composition, functional fitness and handgrip strength. **METHODS:** It was hypothesized that handgrip strength is associated with elderly's body composition and functional fitness. Forty-eight elderly subjects (10 males and 38 females) with 69.61 (± 4.21) years old volunteered for this study. All the procedures were in accord to the Helsinki's declaration regarding human research. The handgrip strength was measured with a digital mechanical dynamometer (CAMRY, New York, USA). The functional fitness was assessed by the functional fitness test [3]. The body composition was evaluated by a bioimpedance balance (Tanita, BC-601, Illinois, USA). The spearmen's test allowed to assess the significant associations between the handgrip strength, functional fitness and body composition.

RESULTS: The handgrip strength only presented significant associations with height ($r_s = 0.588$; $p < 0.001$), basal metabolism ($r_s = 0.568$; $p < 0.001$), water percentage ($r_s = 0.504$; $p = 0.001$), visceral fat ($r_s = 0.336$; $p = 0.032$), bone mineral mass ($r_s = 0.630$; $p < 0.001$), muscular mass ($r_s = 0.607$; $p < 0.001$) and fat mass percentage ($r_s = -0.502$; $p = 0.001$). No significant associations were observed between handgrip strength and functional fitness.

CONCLUSIONS: It is possible to conclude that, handgrip strength present positive association with body mass. However, it is to note that, high levels of fat mass are negative associated with handgrip strength. The handgrip strength may not predict the elderly's functional fitness.

Keywords: *handgrip, strength, elderlies, fitness, Body composition.*

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Energy and protein intake of nursing home residents with malnutrition, sarcopenia and frailty

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BACKGROUND: Malnutrition, sarcopenia and frailty seem to have a common etiology, where energy and protein intake are usually diminished [1]. **OBJECTIVE:** The aim of this investigation was to assess energy and protein intake according to the diagnosis of these three clinical conditions. **METHODS:** Older adults (60 or more years old) were included. Nutritional status (Mini Nutritional Assessment[®]), sarcopenia (*European Working Group Sarcopenia in Older People* criteria) and frailty (Frailty Phenotype) were assessed. Food intake was estimated through a food frequency questionnaire validated in the Portuguese population. **RESULTS:** One hundred and forty-six older adults were included (63.3% female), with a mean age of 83 years old. Malnutrition was found in 26.2%, sarcopenia in 25.0% and frailty in 61.0%. Mean energy intake was 1938.7, 1976.4 and 2098.0 kcal in malnourished, at risk and normal individuals, respectively ($p = 0.048$). No statistically significant differences were found between caloric intake of individuals with and without sarcopenia, and with or without frailty. Mean protein intake was 71.8, 72.8 and 82.6 g n malnourished, at risk and normal individuals, respectively ($p = 0.025$); for individuals with and without frailty, 74.2 g e 82.8 g, respectively ($p = 0.040$). No statistically significant differences were found between caloric intake of individuals with and without sarcopenia. Protein intake below 1.5 g/kg body weight was found in 89.2% of the sample and below 1.0 g/kg body weight in 28.4%. **CONCLUSIONS:** In this sample, energy and protein intake was tendentially lower in the groups with a worse prognosis, although no statistically significant differences were found between all of them. Protein

intake was insufficient in a significant part of the sample, according to recent recommendations^[2,3]. Energy and protein intake were significantly lower in malnourished and frail older adults. Nutritional assessment of malnourished, sarcopenic and/or frail older adults is crucial for a timely intervention, in order to prevent or reverse these conditions.

Keywords: *malnutrition, frailty, sarcopenia, protein intake*

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Physical activity, functionality and health in public workers Francisco José Félix Saavedra¹, Josiane de Pádua Arantes², Daniel Almeida Marinho³

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BACKGROUND: The longevity is marked by biopsychosocial changes^[1], which in the course of time can lead to chronic degenerative diseases associated with inadequate life habits^[2], observing the decrease of health and increased inability to perform daily living activities^[3]. **OBJECTIVE:** The present study aims to describe habitual physical activity (HPA), disability and health in public employees. **METHODS:** Participated thirty-one individuals from a federal university of Brazil [17 (55%) women and 14 (45%) men, mean age 56.68 (\pm 4.91) years and 26.29 (\pm 3.21) kg/m² body mass index]. The Baecke questionnaire^[4,5], was used to measure habitual physical activity. We considered as sedentary individuals who reached a total score lower than 8 and as active those who reached a score equal or superior to 8. The International Classification of Functioning, Disability and Health (ICF), to measure functionality and health. Body mass, height, blood pressure (BP), and total cholesterol, LDL, HDL and glycaemia values were evaluated. Normality was verified through the Kolmogorov-Smirnov and Shapiro-Wilk tests with the Lilliefors correction. In the inferential analysis we used the t test, Mann Whitney and Wilcoxon. The level of significance was set at $p \leq 0.05$. **RESULTS:** Regarding HPA, 50% of men and 47% of women were classified as active, with men having better results in physical exercise in leisure time (PEL) ($p = 0,03$). The active group presented higher values for PEL ($p = 0,004$), activity in leisure and locomotion ($p = 0,006$) and cholesterol ($p = 0,06$). As for obesity 12% of women were classified as obese I, overweight 53% of women and 57% of men. Women showed better levels of LDL ($p = 0,03$) and HDL ($p = 0,02$), compared to men. In the ICF, there were no differences between HPA and sex, but when comparing all individuals, there was a statistically significant difference ($p = 0,05$), and a marginally significant result for the visual changes ($p = 0,06$), walking ($p = 0,07$), moving using some apparatus ($p = 0,07$) and recreation and leisure ($p = 0,07$). Concerning BP, 60% presented normal values and 84% reported pain. Regarding glycaemia, 6%

of the women presented alterations. **CONCLUSIONS:** These data support that the active group showed better results in all evaluated parameters. The presence of pain, visual impairments, joint mobility, and difficulty maintaining the ideal weight suggest the need to increase and adjust HPA in order to reduce the risk of falls and disabilities, especially among women and sedentary women.

Keywords: *Physical Exercise, Aging, Health and Disability*

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Carne vermelha e seus derivados: contribuições na gênese, agravamento e mortalidade das doenças crônicas não transmissíveis

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INTRODUÇÃO: A carne vermelha é um alimento rico em proteínas, minerais e vitaminas, com altos teores de colesterol e gordura saturada. O seu elevado consumo tem sido associado ao aumento do risco de todas as causas de mortalidade e várias doenças crônicas não transmissíveis. **OBJETIVOS:** O estudo teve como objetivo identificar os riscos que advêm do consumo de carnes vermelhas e carnes processadas para a mortalidade em geral e doenças cardiovasculares, renais, diabetes e cancro. **MÉTODOS:** Optou-se por um estudo de desenho qualitativo e descritivo de revisão de literatura em bancos de dados eletrônicos como por exemplo, o SciELO, Medline e Periódicos CAPES, bem como livros didáticos, correlacionando-se os riscos do consumo de carne vermelha com condições de morbimortalidade definidas nos objetivos do trabalho. Não houve submissão a conselho de ética, visto que apenas dados secundários foram utilizados. **RESULTADOS** A ingestão de carne vermelha e de carne processada aumenta o risco para a mortalidade em geral e várias doenças crônicas. As taxas sofrem redução com o consumo de vegetais, frutas, nozes e peixes. A ingestão de carne vermelha mostrou estar associada à ocorrência de diabetes mellitus tipo 2. A qualidade dos ácidos gordos (saturados) e o alto teor de sódio contido na carne têm um papel importante na prevenção primária e no prognóstico das doenças cardiovasculares. Pesquisou-se o

efeito do consumo de todas as carnes e dos seus subtipos separadamente (vermelha, branca e processada) sobre a mortalidade em doença cardiovascular e verificou-se uma associação dose-resposta. Observou-se um aumento de 25% do risco de mortalidade aquando da ingestão de 50g/dia de carne processada e de 15% com a ingestão de 100g/dia de carne vermelha. Os produtos da pirólise de materiais orgânicos e conservantes adicionados à carne são potenciais compostos cancerígenos. A carne vermelha está implicada no desenvolvimento dos tumores de cólon, reto e colorretal, entre outros, sendo a nutrição um importante fator modificável na prevenção destas doenças. A ingestão de carne vermelha demonstrou uma associação com o risco de falência renal de forma dose-dependente, ao passo que a ingestão de aves, peixes, ovos ou laticínios não foi associada a esse risco. **CONCLUSÕES:** O alto consumo de carne vermelha está associado ao aumento da mortalidade em geral e de doenças como as cardiovasculares, renais, diabetes e cancro. A análise do risco de mortalidade elevada nessas condições desencoraja dietas com carne vermelha, com propostas de se lançar mão de alternativas. A sua substituição por outras fontes de proteínas pode reduzir a incidência das doenças.

Keywords: *carne vermelha, carne processada, mortalidade em geral, doenças cardiovasculares, doenças crónicas.*

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Physical fitness and physical activity level in public service workers

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BACKGROUND: In order to reduce sedentary lifestyle and increase the levels of physical activity, portuguese government have been focusing on promoting the practice of physical activity toward his population. Public Health reported that 59.3% of men and 69.8% of women do not practice any physical activity during a normal week, so it is important to implement strategies against the physical inactivity of the population^[2]. The level of physical activity represents a determinant factor of the physical and cardiorespiratory fitness condition, inactivity influence worker's physical competence to accomplish a certain task^[1]. Most of task performed in public services are in sitting position with repetitive

movements in incorrect postures, this are important reasons for development of Muscle Skeletal Disorders (MSDs) development in occupational context^[3]. **OBJECTIVE:** So, the aim of this study was verifying the physical fitness and physical activity of workers belonging to the public service of city hall and analyse correlation between. **METHODS:** Descriptive and correlational research study. A total of 58 participants were selected based on the inclusion and exclusion criteria. For the evaluation of these participants, the following instruments were used; Sociodemographic Questionnaire and International Questionnaire of Physical Activity^[4], Hand Held Dynamometer^[5], squat test and sit and reach test. **RESULTS:** The population is predominantly female (53.4%) with an average age of 47.2 years, whose 19.0% are purely sedentary; 58.6% present a risk of developing cardiovascular diseases, however, with low (32.8%) and high (27.6%) levels of physical activity. The totality and more than 45% of the population are respectively below the reference values in terms of maximum muscle strength and muscular endurance; 68.4% do not reach levels of flexibility within normal standards. **CONCLUSIONS:** The practical use of the International Physical Activity Questionnaire is questioned because it presents incoherent results with the sociodemographic and anthropometric characteristics of the population. Thus, it was evidenced the implementation of intervention plans in the areas of physiotherapy and nutrition in order to raise awareness and promote workers' health.

Keywords: *physical fitness; muscular endurance; physical activity level; occupational context; physical therapy.*

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Evaluation of indoor air quality - Case study: Day-care Center

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BACKGROUND: The good quality of the air we breathe is considered a basic requirement for health and human welfare^[1]. The study of indoor air quality (IAQ) is essential in places where there are elderly, as they are a vulnerable risk group^[2]. And is on average 19 to 20 hours in closed environments^[3]. Thus, this age group is exposed to the concentration of pollutants in the interior which sometimes is higher than the one of the outdoor^[4]. In the last decade, the emergence of respiratory infections has often been associated with the pollution of air in indoor environments, and the World Health Organization (WHO) highlighted asthma, an obstructive pulmonary disease, and lung cancer as some health problems that result from poor IAQ^[5]. **OBJECTIVE:** The objective of this study was to evaluate indoor air quality in a day center. **METHODS:** Assessment of indoor air quality in a day-care center, measurements were made to carbon dioxide (CO₂), carbon monoxide (CO), particulate matter (PM_{2.5}, PM₁₀), nanoparticles, formaldehyde (CH₂O), temperature (T°) and relative humidity (Rh). To make the statistical treatment of the data collected, we used the IBM SPSS Statistic's software, version 25.0. The measurements were performed in two spaces of the day-care center, the living room and the cafeteria, and it was found that the average concentrations of PM_{2.5}, PM₁₀ and CO₂ exceeded the protection threshold. **RESULTS:** The symptoms / pathologies with the highest prevalence in the elderly in the study were headaches, itching, burning or irritation of the eyes and dizziness. The most obvious problem detected at the site under study was the lack of aeration because, despite being winter at the time of measurement, the spaces should be ventilated frequently. **CONCLUSIONS:** The good air quality in day-care centers is essential for the elderly welfare. Measures should be promoted to improve the IAQ in order to minimize the concentration of pollutants. It is essential to ventilate the rooms and remove the decorative objects that accumulate dust or regularly clean them.

Keywords: *indoor air quality, health, day-care center*

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Parental education in child health

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BACKGROUND: Parental education is an aid that parents or other family members can obtain to acquire strategies and tools to better deal with their children / family members, who are

children and / or adolescents^[1,2] With structural changes in the family and the changes that modern societies have suffered, some parents feel they have insufficient knowledge or skills to cope with their children's education or to maintain effective communication with their children / relatives^[3,4] Parental education, taught by professionals, aims to help these educators of children / adolescents to find the best way to lead them in their socialization. Parental education is thus based on pillars such as: communication; reward system and its importance; outline rules and limits on behaviors. **OBJECTIVE:** To reflect on the importance of parental education in child health. **METHODS:** Based on a non-systematic literature review, the authors jointly reflect on the importance of parental education in child health, reasons for doing the education, and under what circumstances. **RESULTS:** With family structural changes, current lifestyles, and the inability of some parents / families to manage conflicts and maintain family cohesion and internal and external homeostasis, there is a need for parental education to avoid irreversible harm in children, or in situations such as maltreatment due to negligence and / or illiteracy in children's health, The need to avoid dangerous situations for the child health requires from the health professionals and educators an integrated intervention, more effective. The need to involve a multidisciplinary and transdisciplinary team is evident, especially in the most complex situations. Parental education is not limited to provide health care to the family, but try to understand the family dynamics and its difficulties in caring for the child. The situations are very diverse, using heterogeneity of educational strategies. So, the objectives for the implementation of programs of parental education are very different, however they must be based on: presentation of information related to the situation; teaching of specific educational strategies; teaching a problem-solving model, applicable to a wide range of problem situations; promotion of reflection and awareness of the reasons underlying parental behavior. **CONCLUSIONS:** Parental education is a process that provides parents and family with specific knowledge and strategies that help promote healthy child/ adolescent development. It should be delivered by a multidisciplinary team that accompanies the family dynamics from various perspectives.

Keywords: *Parental education; Child health*

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Humanization of health and wellness services

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BACKGROUND: With the sciences and technology advances in health, as well as changes in society, the patient that uses health services is often attended in a little personalized way, without

attending to their needs as a human being, and without deepening the main reasons, behind his (her) complains, why he (her) seek health services^[1,2]. Thinking that any human being should not be disconnected from the surrounding context, there is a need to evaluate in each service the factors that are facilitating or constraining the well-being of the patient and his family^[3,4]. **OBJECTIVE:** To reflect on the humanization of services and how to improve care in health services. **METHODS:** Based on a non-systematic review of the literature and the authors' experience, a joint reflection was made on barriers and constraints in the well-being of the patient that uses the health services in Angola and Portugal and what strategies to develop to humanize the services. **RESULTS:** The health services with the technological advance and the economic vision of health often have difficulty attending to the patient and his family as a whole, causing them some discomfort. With the humanization of services as a goal to develop a service culture that is centralized in the human being and its noble values (sympathy, solidarity, respect, kindness, etc.), relegating other things to the background, should always be present to any care provider. In the development of strategies that lead to a greater humanization of services, one must study the whole circuit of the patient in the institution, as well as study their needs while simultaneously being a human and a user, not forgetting also their culture. Thus physical space, comfort of the user, communication in the professional-user relationship, relief of symptoms whenever possible, flexibility are some of the areas in which one should act. Another area is the satisfaction of professionals and their training. **CONCLUSIONS:** The authors conclude that only by developing a set of strategies that meet the above, can services be made more humanized to allow the well-being of the patient and his / her family. These strategies will necessarily involve not only the health services but also other sectors of the community where the services are inserted, as well as the community itself and be accompanied by health education.

Keywords: *Humanization of health services; Wellbeing; Health Professionals*

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Gratitude perception and life quality in institutionalized seniors: a pre-test analysis

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BACKGROUND: Due to the increase of the life span, there is a need to promote health, positive and quality aging^[1]. The study of concepts, such as gratitude and other positive emotions, become important regarding the contribution to the development of strategies that promote the life quality in the elderly population^[2]. **OBJECTIVES:** This preliminary analysis, is an

integral part of an exploratory and comprehensive study that includes the understanding of the relationship between gratitude and life quality in institutionalized seniors, in three residential homes in the municipality of Viseu. **METHODS:** A test was conducted in three of the residential homes with the intent to apply the following instruments: a sociodemographic questionnaire, the Portuguese version of the Gratitude Scale GQ-6^[3,4], the Brief Life Quality Scale EUROHIS-QOL-8^[5]. The participants were selected randomly, to assess the adequacy of the procedure and do the necessary readjustments. The study was carried out on 60 seniors, age between 65 and 100 years old. We used non-parametric test, *Pearson* correlation coefficient, adopting a level of significance of $p \leq .05$, to analyze the relationship between the perception of gratitude and life quality. **RESULTS:** The sample of 60 seniors (33,3 % is male and 66,7% is female), with ages between 65 and 97 years old ($M = 80.84 \pm 8.031$). 61,7% completed the primary education (N=37), 8,3% the secondary cycle (N=5), 3,3% the third cycle (N=2) and 26,7% didn't attend school (N=16). The mean gratitude result was 5.50 ± 0.749 (with 1 very poor gratitude and 7 very good gratitude). In relation of quality of life, the mean result was 58,85%. According *Pearson test* we verified a weak correlation ($r_s = -.588$), between the score obtained in the gratitude scale and life quality scale. **CONCLUSIONS:** The study suggested that these scales are suitable and easily to be applied to the participants belonging to our sample. For those, that weren't able to field the scales independently, the first authors proceed to complete the scale, marking the options pointed by the participants.

Keywords: *gratitude, life quality, institutionalized elderly people*

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Complementary and alternative medicine in Higher Education: Knowledge, attitudes and practices of university students

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BACKGROUND: The World Health Organization^[1] defined complementary and alternative medicine (CAM) as the sum total of knowledge, skills and practices based on indigenous theories, beliefs and experiences in different cultures, explainable or not, used for health maintenance, as well as in prevention, diagnosis, amelioration or treatment of physical and mental illnesses. The popularity and use of CAM has increased exponentially around

the world. For example, in Italy, Germany, Canada and France, the percentage of the population that uses CAM varies between 70% and 90%^[1]. However, the international studies about the use of unconventional therapies by the university students are reduced, as well as their knowledge and attitudes towards the benefits of CAM. **OBJECTIVE:** This study comprises a systematic review of the literature in five databases (PubMed, ERIC, CINAHL, SciELO and ScienceDirect) in order to identify CAM students' knowledge, attitudes and practices. **METHODS:** In order to guarantee the transparency and the integrity of the research, we proceeded according to the PRISMA guidelines^[2,3], defining criteria for inclusion of scientific articles. In total, we analysed 21 articles published between 2003 and 2018, conducted in several countries, mainly in the USA ($n = 9$) and with sample sizes between 64 and 2553 university students. **RESULTS:** The results revealed that between 50.4% and 82% of university students have turned to CAM at least once in the last 12 months, with about 98% reporting their use at least once in their lifetime. The unconventional therapies most used by university students were relaxation and meditation ($n = 8$), massage therapies ($n = 8$), yoga ($n = 6$) and aromatherapy ($n = 4$). Concerning knowledge about CAM, therapies and their health benefits, most studies have identified a slightly lower level of general knowledge but a rather positive predisposition for learning. Similarly, despite the high level of interest in CAM and the positive attitudes towards its use and benefits, in some of the studies analysed, university students showed ambiguous attitudes. **CONCLUSIONS:** In short, despite the use of unconventional therapies and the belief in their benefits, these results reveal the importance of integrating content about CAM into curricula so that college students can to make informed decisions about their practices.

Keywords: *complementary and alternative medicine, non-conventional therapies, higher education, university students*

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Unconventional therapies as medicalization prevention in school

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BACKGROUND: The medicating, which appeared in the end 60 is considered a management device, driving and control bodies produced based on knowledge in medicine^[1]. Medicine becomes a knowledge-power that affects the body and population, and over the organism and biological processes, having disciplinary effects and regulatory effects^[2], spreading to multiple contexts, in particular, in recent years, to the school. The use of methylphenidate medication (Retalina, Rubifen and Concerta) to promote learning or achieve a better school performance is a new centrality in everyday school life. This view corroborates with data released by the National Authority for Medicinal Products and Health Products, I. P.^[3], which has seen an exponential increase in methylphenidate consumption over the last few years.

According to data from the National Health System (SNS), for 2015, 26% of the tablets were used by children up to 9 years old and 63% by boys between 10 and 19 years old. This rapid solution to combat anxiety and promote the concentration of children and youth, in a kind of additive consumption or *school doping*, should not be seen in isolation, given the growing concern with the (inter) national goals and targets, such as school rankings. **OBJECTIVE and METHODS:** Based on the results of international research, it is proposed that the use of non-conventional therapies should be an adjustment / alternative to the medicalization of children and youth, in order to offer a comprehensive care, providing the development of skills, such as management of emotions or the ability to (re) act consciously. **RESULTS and CONCLUSIONS:** The intervention project developed, using non-conventional therapies, focused on a model of training of children and youth, based on the development of emotions and affections, allowing a balanced and responsible positioning in the face of destabilizing factors that generate fears, blockages or anxiety. And, demonstrating that the use of non-conventional therapies will improve the teaching-learning process centred on children and youth, reducing situations of anxiety and attention deficit and, consequently, preventing the use of psychotropic drugs.

Keywords: *Unconventional therapies, emotions, school doping, medicalization of education, school*

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Domestic and Leisure Accidents in the Elderly Population

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BACKGROUND: There has been an increase in the aging of the world population, due to the decrease in birth and death rates and the consequent increase in the average life expectancy. According to the United Nations Organization in the year 2050, 20% of the world population will be constituted by elderly individuals. In Portugal, the National Institute of Statistics predicts that between 2012 and 2060 a population decrease will occur (about 22%)^[1]. Aging is a victory for socio-economic development and for public health, which at the same time creates the challenge of adapting society^[2]. The elderly are exposed to the greater risk of accidents at home^[3]. An example of environmental modifications is the modification of the dwellings^[4]. The built environment reflects an urban planning system based on compartmentalization, which differs from the natural environment^[5]. **OBJECTIVE:** The objective of this study was to evaluate the risk situations existing in the dwellings and in the surrounding spaces and that may cause accidents in the population over 65 years of age in a municipality in the central zone of the country. **METHODS:** The study methodology consisted in the application of a housing safety checklist of the National Accident Prevention Program of the

General Directorate of Health and was applied to 27 elderly people. **RESULTS:** It was found that 67% of respondents live in rural areas and in streets with little movement of vehicles. As for roofing, 96% of the roofs are watertight, without infiltration, which avoids wet floors and reduces falls. There are steps between the street and the entrance of the house, in 92% this obstacle makes access difficult for disabled people. In toilet facilities, the bathtub is used by 85% of the respondents and they use a non-slip mat. However, outside the bathtub they do not use non-slip mat. As for the most frequent accidents in the last 2 years, the burns (85%). At the origin of the accidents, the most pointed were the kitchen equipment (71%). **CONCLUSIONS:** It's concluded that domestic accidents are a serious problem of Public Health, with a great impact on the health and social protection systems, having consequences in the personal and familiar life of the victims. An urgent need for architectural change or adaptation of buildings is essential, but also an awareness of this population for good safety practices in their dwelling with a view to an active and safe aging.

Keywords: *Elderly, Housing, Security*

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Food safety in institutions frequented by elderly

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BACKGROUND: Food safety is a basic requirement in all places where food is provided^[1,2]. This is a major concern in terms of public health, especially as it can affect the health of a particularly vulnerable population group, such as the elderly^[3,4]. **OBJECTIVE:** This study aimed to evaluate the structural and operating conditions of canteens of private social solidarity institutions. **METHODS:** The sample included eight institutional buildings, with four kitchens (three senior homes / five day centers / two home support services), food handlers, managers and professionals responsible for the preparation of menus. For the evaluation of the structural and operating conditions a checklist was drawn up by the Regional Health Administration of the Center. The temperature of the food at the beginning and at the end of its distribution was evaluated using a HI9060-Hanna Instruments, HI76692W thermometer. To evaluate the nutritional quality of the meals served, a check list was used. **RESULTS:** In 62% of the inspections and in the laboratory analyzes, there were several structural and operational problems, such as warehouses with low capacity, inadequate sanitation plans, severe disinfection / washing of utensils, pots and containers for transporting meals. The presence of meat and fish dishes

preserved at temperatures located in the danger zone was also observed. As for the evaluation of the meals served, the monotony of the meals, excess lipids and the inadequacy of the menus for this age group were verified. **CONCLUSIONS:** Promoting and ensuring hygiene and food safety is nowadays a requirement in any service involving the provision of food as a means of ensuring the promotion of a high level of protection and consumer confidence. To this end, it is necessary to monitor the functioning of the institutions and to promote the knowledge and the development of competences of the professionals involved in the confection and food distribution activities.

Keywords: *Health, Elderly, Canteens, Food Safety*

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Translation and cross-cultural adaptation of the instrument WHODAS 2.0 Child and Youth

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BACKGROUND: This Special education, that aims educational and social inclusion, seeks to promote equal opportunities to access and participate in contexts^[1]. Participation is a term defined by the International Classification of Functionality (ICF) being only measurable by a scale intimately connected with this terminology. The ICF, of the World Health Organization (WHO), provide a universal language to define and classify disability, emphasizing the dynamic and bidirectional relationships between a health condition and contextual factors (individual and environment)^[2] presenting a version for children and teens named CIF-CJ^[3]. The World Health Organization Disability Assessment Schedule 2.0 Child and Youth (WHODAS 2.0 CY) was created from the adult version, WHODAS 2.0 in order to be able to correspond to the specific needs of children and teens. It was developed by a working group of the Diagnostic and Statistical Manual of Mental Disorders, version Five (DSM-5), in 2013, and was subsequently translated and validated in Rwanda^[4]. It presents 36 response items through a Likert scale with a Cronbach's alpha of 0.84^[4,5]. **OBJECTIVE:** This Methodological study aimed the translation and cultural adaptation of the WHODAS 2.0 CY instrument to the Portuguese Language. **METHODS:** We did two translations and a reconciliation; a back-translation that was compared with the original version; an evaluation by the Committee of Juries; Pre-Test conducted by 43 participants; Content Validity index (IVC); Return to the Committee of Judges and reports on the choices of translation. Similarly, a questionnaire was conducted evaluating

the participation in activities. **RESULTS:** We performed an analysis of the internal consistency of the instrument using Cronbach's Alpha $\alpha=0.87$ with the use of the Statistical Package for Social Sciences (SPSS), version 24.0, and the content validity ensured by the jury committee. It was linguistically translated and culturally adapted to the context, maintaining congruence with the original version. Is fragility to consider such a small size of the sample. In this study, we infer about the change of interest in children's activities as they became teens, from more physical activities to more social. **CONCLUSIONS:** The instrument assists the diagnosis and allows to identify limitations resulting from a health situation perceiving better the perception of children/adolescents regarding these, demonstrated linguistic equivalence in relation to the original and internal consistency Proper.

Keywords: WHODAS 2.0 Child and Youth; ICF; Participation; Special Education; Special Needs.

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Aging, oxidative stress and hydrotherapy

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BACKGROUND: Aging is a complex biological process that induces the progressive loss of physiological functions. The most consensual theory is that of free radicals, whose production during aerobic metabolism can contribute to the occurrence of lesions in DNA, lipids and proteins^[1]. The overload of antioxidant defense mechanisms, due to high rates of reactive oxygen species (ROS), also contributes to cellular functional loss. In the enzymatic antioxidant system, we find the enzymes superoxide dismutase, glutathione peroxidase and reductase. The non-enzymatic antioxidant induces direct protection of the organism

against oxidative damage and enhances enzyme function^[2]. Also, uric acid is a potent antioxidant and interacts with ROS, and in plasma accounts for approximately 60% of its antioxidant capacity^[3]. Hydrotherapy is recommended in the elderly, due to the low load and mechanical stress in the joints and supporting muscles. It is indicated in rehabilitation and therapeutics, and included in exercise programs to improve muscular fitness in the elderly with movement limitations^[4]. The exercises performed in the water involve less muscle strength and endurance, making it easier and favoring muscle oxygenation with less energy. They are viable, beneficial, safe and provide improvements in exercise and quality of life in the traditional way^[5]. **OBJECTIVE:** The objective of this work is to evaluate whether hydrotherapy induces changes in the markers of oxidative stress, leading to its reduction. **METHODS:** The study will involve 50 individuals of both sexes, aged ≥ 60 years, who will perform 20 hydrotherapy classes constituting 2 groups (experimental-subject to exercise and control-without-exercise). All participants will be evaluated 2 times: before starting the classes (T0) and at the end of the 20 classes (T1). The levels of superoxide dismutase, glutathione peroxidase, glutathione reductase, uric acid and nitric oxide will be determined. The hydrotherapy classes will be 30 min. in a therapeutic pool with three moments: heating, aerobic exercise and relaxation. The therapeutic exercise in aquatic environment consists of using the resources of a pool prepared with dimensions, depth, temperature of the water and the external environment and a specialized professional, physiotherapist. From each participant will be collected two venous blood samples at the beginning of the study (T0) and after the 20 classes (T1). **RESULTS:** After exercise we expect to find an increase in the concentration of different antioxidants in T1. **CONCLUSIONS:** Elevated levels of antioxidants are indicators of reduction of oxidative stress and essential in improving the quality of life of the elderly.

Keywords: Aging; Exercise; Antioxidant mechanisms.

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The association between physical activity, maturity, body fat percentage and academic performance, in students from the 1st to 3rd Cycle of Basic Education

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BACKGROUND: The Academic performance has been extensively studied over the last decades. Some studies have shown that the more active students achieve better academic results^[1]. Others concluded that those who are more mature perform better in school than their peers^[2]. Others also point to the negative influence exerted by overweight on school results^[3].

OBJECTIVE: This research intends to verify if physical activity, maturity and body fat percentage are associated with academic performance, in students of the 1st to 3rd cycle of basic education.

METHODS: The sample included 408 students, 208 boys and 200 girls, aged 8 to 16 years. The physical activity was evaluated through accelerometry (ActiGraph LLC, Fort Walton Beach, Florida, USA), maturity was obtained using the TW3^[4] method, the body fat percentage was calculated based on the equations of Lohman^[5] and Slaughter^[6] and the academic performance was obtained through the final school evaluations in a percentage scale. The results in the different disciplines of the curriculum were grouped into three areas of knowledge (Humanities, Experimental Sciences, and Expressions). Statistical treatment was made with the SPSS 25.0 program ($p \leq .05$). We used the paired t-test to analyze differences between two sets of results. The results obtained by the participants, in each variable, were gathered into three groups (1- $\leq 33^{\text{rd}}$ percentile; 2- $33^{\text{th}} >$ percentile $< 66^{\text{th}}$; 3-percentile $\geq 66^{\text{th}}$) and the ANOVA One way was used to compare the results obtained in the different variables by each group. We also used the Analysis of Covariance (ANCOVA), controlling for maturity, to see if academic performance is influenced by maturity. **RESULTS:** The results showed that boys spent more energy ($p \leq 0.03$) and more time in moderate to vigorous physical activity ($p \leq 0.01$) than girls, that girls had a higher percentage of fat mass than boys ($p \leq 0.01$), that the most active participants obtained better results in the "Experimental Sciences" knowledge area ($p \leq 0.05$) while the less active ones obtained better results in the "Humanities" area (0.001) and that when we controlled for maturity these differences increase. **CONCLUSIONS:** We conclude that boys are more active and have less fat mass than girls, that more active students have better results in the "Experimental Sciences" disciplinary area, while the less active have better results in the "Humanities" area, and that maturity exerts a favorable influence in both groups.

Keywords: Physical Activity; Maturity, percentage of fat mass, Academic Performance.

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The Effect of Smoking Habits on Cholinesterase Activity

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BACKGROUND: In Portugal, smoking affects about 16.8% of the population between 15 and 24 years of age^[1]. Acetylcholine acts on the muscarinic and nicotinic receptors during the transmission of the nerve impulse. Its action is modulated by cholinesterases, hydrolytic enzymes that catalyse its conversion to acetate and choline and, therefore, the end of its activity^[2]. Nicotine has, like acetylcholine, the ability to bind to nicotinic receptors, activating nerve transmission^[3]. The usual consumption and consequent accumulation of nicotine in the synapse leads to desensitization of nicotinic receptors and blockage of nerve transmission by other neurotransmitters, which results in the impairment of the cholinergic system and associated physiological processes^[4]. **OBJECTIVE:** The aim of this investigation was to evaluate the effect of smoking habits on cholinesterase activity. **METHODS:** This study covered a population of 80 university students between the ages of 18 and 24, among which 40 smokers (individuals who have smoked ≥ 100 cigarettes throughout their lives and who currently smoke daily) and 40 non-smokers (individuals who have smoked < 100 cigarettes throughout their lives). Samples of peripheral blood were collected by venepuncture along with the completion of a written survey for the assessment of consumption habits. Plasma activity of cholinesterases was determined by Ellman's method. **RESULTS:** Acetylcholinesterase activity was lower in the smoking population (45.80 ± 10.58 U/L) than in the control population (51.25 ± 7.52 U/L), ($p=0.010$). On the other hand, there were no significant differences in the activity of butyrylcholinesterase between the two populations, respectively, (3.90 ± 0.51 kU/L) and (3.88 ± 0.42 kU/L), ($p=0.847$). **CONCLUSIONS:** Significant differences were found demonstrating the effect of smoking habits on acetylcholinesterase activity. However, a reduced sample size, an iniquity between groups of smokers and reduced consumption years made it impossible to obtain more significant results.

Keywords: Smoking; Acetylcholine; Acetylcholinesterase; Butyrylcholinesterase; Nicotin;

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Occupational noise in gyms and their effects on workers' health

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BACKGROUND: Noise is the most common physical agent found in the workplace and may cause changes in the health and well-being of individuals. **OBJECTIVES:** Thus, it is urgent to evaluate the exposure to noise of professionals working in gyms and the respective effects on their body, this being the purpose of this study^[1,2]. **METHODS:** The sample consisted of 22 workers distributed in the 4 gyms under study, 63.6% male and 36.4% female. To evaluate the noise was used Brüel & Kjær, model 2260 sound level meter and software BZ7210 and BZ7815. Noise measurements were taken, with reference to the methodology included in Decree-Law no. 182/2006, of September 6, during all the group classes given and outside that period, in those same spaces, to determine the continuous sound level (L_{Aeq}) and the peak sound pressure level (L_{Cpico}) that allowed the subsequent determination of workers' exposure to noise ($L_{EX,sh}$). Two measurements were made per class, lasting between 5 and 10 minutes, and the sound level calibration was performed before each series of measurements. All professionals answered a questionnaire, to determine personal data and information related to the profession and their health condition, including feelings of discomfort felt, when applicable, and developed a weekly schedule with all the activities they performed in gyms and associated exposure times. The Noise Explorer Type 7815 software and the IBM SPSS statistical software version 25.0 were used for data processing. The interpretation of the statistical tests was performed based on a significance level $\alpha=0.05$ with a 95% confidence interval. **RESULTS:** It was found that more than 50% of subjects were exposed to noise levels above the lower action value, reaching, in some cases, 84.2 dB (A). This exposure was superior in the male group compared to the female. It was also observed that 13.6% of the professionals reported a feeling of malaise, indicating symptoms such as: stress, fatigue, attention/concentration difficulties, sleep disorders and others^[1,2]. **CONCLUSIONS:** It was concluded that there were unfavorable working conditions for the health of exposed individuals, and it was necessary to implement measures to eliminate this risk. However, the peak sound pressure level was never exceeded, and auditory acuity loss was not easily recognizable, which is in line with the perception of workers who, despite assuming that they did not have auditory problems, reported symptoms of malaise, being, usually associated with exposure to noise^[3,4,5].

Keywords: Occupational noise, discomforts, loss of hearing, extra-auditory effects.

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Self-care: a proactive process in personal and occupational health and well-being

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BACKGROUND: Some professions can trigger high levels of dysfunctional stress, facilitating emotional imbalance, impacting personal and work health. The evidence points to workers who perform roles in helping professions as those most vulnerable to states of emotional exhaustion by continually dealing with situations of suffering and frailty. Self-care can be a protection, since it is associated with an increase in general well-being and a lower level of perceived stress^[1]. **OBJECTIVES:** Measure indicators related to health and well-being perception, within the scope of a larger study which considers the validation of a Self-Care Scale^[2], with a sample of 200 workers with intervention in social context. **METHODS:** Descriptive analysis of questions, design from the dimensions of the SF-36V2^[3], that allowed to measure indicators regarding the perception of health, well-being and reasons for self-care. **RESULTS:** the sample revealed positive data: most characterized their health as good, very good and excellent (79.5%); 59% of the sample report, as always and sometimes, the regular practice of physical activity; and that their physical health or emotional problems interfere little and absolutely nothing with their work (70.5%), daily activities (70.5%) or relationships (73%). The reasons associated with self-care, in the sense of improving health and well-being, relate to the desire to feel good ($n = 126$) and to want a healthy life ($n = 129$). These results are in agreement with the literature, where perceptions about health status tend to be generalized positively in the active population, as a result of a previous process of exclusion of the less healthy people from the labour market^[4]; which means, the active population, on which data is collected on occupational health, is (objective health) and feels (health perceived) healthy (also by processes of social desirability). However, they contradict the data that are being published regarding the high psychosocial risks to which Portuguese

workers claim to be exposed, with a negative impact, even in the way in which they view their professional future. **CONCLUSIONS:** Its importante to increase awareness regarding responsibility that each professional has for his or her self-care - a capacity that needs to be stimulated through educational practices and actions that contemplate its development and awareness of the importance of its operationalization^[5], creating a reasonable relationship with the contexts in which it works, so as not to harm and compromise their individual well-being, as well as the quality of their practices.

Keywords: Health promotion; Self-care; Well-being; Professionals in the social context

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Predictors of functionality in older adults with osteoarthritis: the roles of self-efficacy and physical activity

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BACKGROUND: Several factors have been identified to influence functionality in people with osteoarthritis. Physical activity is an important non-pharmacological intervention for people with osteoarthritis which helps to maintain or improve their functionality. Psychological factors, such as self-efficacy, depression and fear of movement have been associated with functional improvement and have been shown to be influential in the adoption of physical activity. **OBJECTIVE:** The purpose of this study was to analyze the association of functionality with fear of movement, depression symptoms, self-efficacy and physical activity. **METHODS:** The sample comprises 41 older adults (50+ years old) with osteoarthritis (mean age 66.9, SD=8.1; 73.2% women) residing in the community. Patients were referred by GPs from their electronic medical records. Functionality was assessed by the activities of daily living subscale from Knee injury and Osteoarthritis Outcome Score (KOOS, ^[1,2]) and amount of moderate and/or vigorous physical activity per week was evaluated using the International Physical Activity Questionnaire - Short form (IPAQ-S, ^[3]). Fear of movement was assessed by the Tampa Scale for Kinesiophobia 6 Item Brief of Fear of Movement Scale (score 6 to 24, higher score more fear) (BFOM, ^[4]), and the

Self-efficacy to Manage Chronic Diseases 6-item scale was used to assess the confidence to perform daily activities (score 1 to 10, higher score more confidence)^[5]. Pearson correlation of coefficients was used first to examine relationships between the variables. A stepwise linear regression model was performed to identify variables that predicted functionality in older adults with osteoarthritis. **RESULTS:** This sample had a mean of functionality score of 70.18 (SD=23.1) out of 100, and a median of 360 minutes/week of moderate and/or vigorous physical activity (IQR=1151). The mean score for fear of movement was 13.20 (SD=4.5) and the mean self-efficacy score was 6.80 (SD=2.0). The correlation analysis suggested an association between functionality and fear of movement ($r=-0.607, p<0.05$), depression ($r=-0.643, p<0.001$), self-efficacy ($r=0.631, p<0.001$) and physical activity ($r=0.519, p<0.05$). In the linear regression model, only self-efficacy and physical activity significantly predicted functionality ($R^2=0.614, p<0.05$). **CONCLUSIONS:** This finding suggests that older adults with osteoarthritis reporting higher self-efficacy for managing chronic diseases and greater engagement in physical activity have higher levels of function. This result suggests that both variables act as mechanisms of action for optimal osteoarthritis management.

Keywords: Physical activity, self-efficacy, psychological factors, functionality, osteoarthritis

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Indoor Air Quality assessment in school spaces

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BACKGROUND: Air pollution is a problem of public health and being children the most vulnerable, special attention is needed to air quality (QA), both inside the buildings where they spend most

of their time (schools), and outdoors^[1,2]. **OBJECTIVE:** So, for the protection of children's health it is imperative to appraise the impact that the quality of indoor and outdoor air has on children attending 1st cycle of education, regarding law regulations specifically for pollutants, such as carbon monoxide (CO), carbon dioxide (CO₂), volatile organic compounds (VOCs) and particulate matter (PM₁₀), as well as levels of temperature (T°) and humidity (Hr). **METHODS:** The sample consisted of twelve classrooms in different schools located in the Center Region of Portugal with a total of 88 children belonging to the 1st and 69 children belonging to the 4th year of scholarship. The data collected was then processed using the statistical software SPSS version 25.0. The interpretation of statistical tests was performed using a significance level of $p=0,05$, confidence interval 95%. **RESULTS:** The results demonstrated that the average concentrations of the pollutant CO₂ recorded in the sampled schools exceeded the threshold of protection stipulated in the legislation (1250 ppm). Although we noticed that the concentration of air pollutants was not influenced by the location, it has been found that the school located in the industrial area had a higher average analytical concentration of CO₂ and VOC pollutants. The results show the importance of continuous monitoring in order to monitor the concentrations of CO₂ inside the classrooms, as well as the implementation of measures aimed at reducing observed values. **CONCLUSIONS:** It is increasingly important to have an adequate ventilation of the interior spaces, since the absence of this can lead to the increase of the concentration of the pollutants, as stated by Ribéron et al, negatively affecting the health and well-being of exposed individuals^[3,4,5]. The QAI should be a priority concern for the government and for professional workers in the area of Environment and Health, who should undertake various actions aimed at preserving and improving QA, in order to avoid atmospheric pollutants reaching concentrations that may endanger the health of populations.

Keywords: *Indoor Air Quality; air pollutants; children; schools; health*

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Effects of Indoor Air Quality on the health of workers in homes for the elderly

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BACKGROUND: Indoor Air Quality (IAQ) in homes for the elderly affects the health and comfort of all users and professionals. In these places, a great concern with the quality of the air is necessary because, besides the problems related to occupational health, there is a need for great care with the elderly since they belong to a vulnerable age group^[1]. This is the ideal environment for the occurrence of Sick Building Syndrome (SBS) that manifests itself through the appearance of symptoms such as allergies, breathing difficulties, headaches, dizziness, difficulty concentrating, apathy, tiredness, irritation of the eyes, nose and throat and dry cough. **OBJECTIVE:** The aim of this study was to evaluate occupational exposure of workers to indoor air pollutants in nursing homes and to check what is the prevalence of symptoms and/or diseases. **METHODS:** The sample consisted of 4 interior spaces (living room, bedroom, laundry and kitchen) of 8 nursing homes located in the Center Region of Portugal and 155 workers. Questionnaires were administered to the workers and the IAQ was evaluated, as well as temperature and relative humidity levels were assessed. The questionnaire was divided in two parts: sociobiographic characterization and health condition analysis. **RESULTS:** We notice that in some nursing homes the recorded average concentrations of carbon dioxide, volatile organic compounds and particulate matter with diameter <10, exceeded the threshold of protection, being that concentrations, on average, higher in homes located in urban areas. The symptoms and/or diseases with the highest prevalence were headaches, crisis of sneezing, dizziness and allergies. The buildings had SBS. **CONCLUSIONS:** The results show, as described in some studies, the need to improve air renewal systems, opting whenever possible for natural ventilation, especially in the most sensitive areas, such as rooms and living rooms, and to analyze the composition of personal hygiene and cleaning products used in order to ascertain whether there are compounds capable of causing risks to the quality of the air and to the health of employees and users^[2,3]. As for the symptoms, the results can be compared to those found in other studies, which report that sneezing, headaches and allergies are the most frequent when exposed to indoor environments with moisture^[4,5]. The monitoring of IAQ is therefore essential for defining indoor control strategies to eliminate or mitigate problems in the interior environment of buildings.

Keywords: *Indoor Air Quality; homes for the elderly; workers; air pollutants; Occupational Health*

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Inflammatory Bowel Disease: quality of life and influence of supplementation

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BACKGROUND: Intestinal Inflammatory Disease includes *Crohn's* Disease and Ulcerative Colitis, which are chronic evolution diseases^[1]. The main symptoms of these diseases are diarrhea, abdominal pain, fever, and nausea which affect patients' quality of life^[2]. However, there is evidence that supplementation can help patients with the symptoms and improve quality of life^[3,4]. **OBJECTIVE:** This study aimed to evaluate patients' quality of life and the consumption of supplements with inflammatory bowel disease, in order to correlate the impact that inflammatory bowel disease has on patients' daily life and whether the consumption of supplements affects their quality of life. **METHODS:** This was a descriptive observational study that made use of a convenience sample. Two questionnaires were used: one to evaluate the consumption of supplements and another to evaluate the quality of life, called "Inflammatory Bowel Disease Questionnaire". Both questionnaires were applied at Braga's Hospital Gastroenterology service. A total of 144 questionnaires were completed, of which 120 were randomly selected. To determine whether or not patients with Inflammatory Bowel Disease have quality of life, the "t" test was applied to the sample, comparing it with the value of the theoretical averages. **RESULTS:** The mean age of the 120 individuals was 40 ± 14 years. The minimum age observed was 19 years and the maximum age was 73. As far as gender is concerned, 61 of the interviewed (50,8%) were male and 59 (49,2%) were female. In the application of the "t" test, a value 0,001 < p < 0,05 was obtained in all analysed domains, which leads to the conclusion that the average quality of life index in all domains is higher than the theoretical average value for an $\alpha = 0,05$. Applying the "t" test for independent samples, we observed that 0.001 < p < 0.05, so there is statistically significant evidence to affirm that the general quality of life in the population is higher in males than in females for an $\alpha = 0,05$. The same statistical result was obtained for the remaining domains, with the exception of the social domain (p = 0,612). In relation to the consumption of supplements, 25,8% of patients with Inflammatory Bowel Disease consume supplements, with the most commonly consumed supplement being iron (oral only), followed by calcium and multivitamins. Most respondents took supplements under medical advice. Finally, in all domains, the mean quality of life was higher in the group that did not consume supplements (n = 89). However, this result is not statistically significant for the population (p = 0,054) with an $\alpha = 0,05$. **CONCLUSIONS:** Patients with Inflammatory Bowel Disease have good quality of life, which is higher in males in all domains, except in the social domain. The consumption of supplements does not affect the quality of life. However, other studies are needed to confirm the real impact that supplements have on patients' quality of life.

Keywords: *Inflammatory Bowel Disease; Crohn's disease; Ulcerative Colitis; Quality of life; Supplementation*

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Health promotion in higher education: bioethical contributions to professors' quality of life

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BACKGROUND: Universities are essential institutions for health promotion (HP)^[1]. As they have their own ethos and distinct cultures, they may act as potential enhancers of the conceptual frameworks of HP and interdisciplinary values such as equity, social justice and sustainable growth^[5]. Bioethics, as a transversal discipline, seeks to ethically analyze and systematize such values, strengthening the synergy between health and sustainability^[2]. **OBJECTIVE:** Bioethics is a reflexive, mutually shared and interdisciplinary tool whose goal is to promote health and sustainability in an integrated and coherent way, adapting life actions, in their equitable and inclusive character. **METHODS:** Cross-sectional and exploratory-descriptive nature and using a quantitative-qualitative approach^[3]. The population composed of university teachers in the Rio Grande do Sul / Brazil, random sampling, non-probabilistic for convenience (*openepi* = CI 95%, n = 1400 persons). **RESULTS:** For beyond the principalistic formulation - charity, non-maleficence, justice and respect for autonomy^[2], subjacent referentials such as solidarity, shared commitment, and health environment/sustainability were evoked, causing a positive impact on HP, individual and collective well-being, quality of life, inclusion and social justice in the University environment. **CONCLUSION:** Higher education upholds a fundamental role in HP for their faculty teachers. Universities act as places for the investigation and learning in a way that it invigorates HP activities^[4]. Bioethics, as a transdisciplinary activity, seeks to aid in building qualified actions in health, which uphold and promote well-being, cohesion, inclusion, sustainability and social justice, with the due conceptual clarity that resides therein^[4,5].

Keywords: *Bioethics, Health Promotion, Higher Education, Professors, Quality of life*

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Phytochemical Screening of aqueous and hydroalcoholic extractive solutions of *Taraxacum hispanicum* leaves

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BACKGROUND: Plants of the genus *Taraxacum* (dandelion) are a source of diverse phytochemicals, and its biological activities can be exploited in different areas of human health. Phytochemical composition of dandelion, in particular *T. officinale*, has been extensively studied over the years^[1]. However, to date no studies have been performed regarding *T. hispanicum* phytochemical characterization, which is a common South European specie of *Taraxacum*^[2]. **OBJECTIVE:** For that reason, this work aims to determine the phytochemical profile of different extractive solutions of *T. hispanicum*. **METHODS:** Experimental study in which two extractive solutions of dandelion leaves were tested [aqueous and hydroalcoholic (80% V/V)]. Phytochemical screening was performed, according to the literature, for determination of phenolic compounds, polyphenols, flavonoids, tannins, terpenes, diterpenes, triterpenes, alkaloids and saponins. **RESULTS:** Phytochemical screening showed positive results for polyphenols, flavonoids, tannins and diterpenes, in both solutions studied. In contrast, a negative result for triterpenes in both extracts were expected. In the case of phenolic compounds, saponins and alkaloids results were different in both extracts. **CONCLUSIONS:** Ethanol and water were the solvents used in dandelion extraction. The results observed can be explained by the suitability of the aqueous solvents to an extraction of some bioactive compounds with strong polarity; on the other hand, ethanol and mixtures of water/ethanol are suitable to the extraction of compounds with a higher polarity range^[3]. Regarding the positive results for polyphenols, flavonoids, tannins and diterpenes, some authors referred the presence of polyphenols (namely flavonoids) in the aerial part of dandelion species^[2]. According to literature, phytochemicals present in leaves of *Taraxacum* sp. include terpenes (particularly, sesquiterpene lactones), phenolic compounds and coumarins^[4]. For the positive results found to tannins and diterpenes, there are no information related to the existence of these compounds in dandelion. However, because *T. hispanicum* is a specie poorly studied, these may be compounds not characterized to date in the plant. In conclusion, further assays are required (e.g. chromatographic techniques) in order to complement the obtained results.

Keywords: *Dandelion; Taraxacum hispanicum; Phytochemicals; Solvents; Extract*

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Learning organization

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BACKGROUND: The professional and scientific development of the HealthCare professionals in Portugal lacks a supportive framework^[1]. The State and organizations address professional motivation and knowledge update as a need for career progression. However, that is insufficient when moving through processes of change – which implies adjustments and requires planning, integration and investment, in a continuous improvement basis^[2,3]. **OBJECTIVES:** The aim of this work was to list the mostly needed factors to be developed in order to improve the learning on a HealthCare unit, identified by its professionals. **METHODS:** "Organizational learning" was the defined dependent variable, and approach strategy, participatory politics, information, recordable data, internal transactions, rewards, structure and environment, learning between units, support environment and self-developed opportunities were independent variables. 35 questionnaires were applied to a group of physicians from the same health unit. Each independent variable score was evaluated using the Likert scale model. **RESULTS:** 75% of physicians scored 7 to learning an approach strategy; 85% assigned 7 to participatory policy development; 80% assigned 7 on the information question; 40% scored 6 to control and form of recordable data; 60% scored 8 on internal transactions; 45% assigned 5 on rewards flexibility; 45% scored 9 on structures promotion; 50% assigned 7 on workers barriers as an analyzed environment. Discussion: The results show that physicians have access to information, have initiative and take an active role planning the organization and respecting the authority framework. Other pertinent results show that, despite the participatory capacity, there is organizational lack of support for projects development, as well as lack of investment in physicians learning and in formal procedures development for sharing data and protocols with providing care interest. **CONCLUSIONS:** Organizational learning is essential for the continuous adaptation of the organization to changes. Managers should not understand organization strategy and structure as something rigid and immutable, since it would compromise learning and lead the organization to inertia.

Keywords: *Learning organization, development, HealthCare Professionals, Health unit.*

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Vaccination of patients subjected to Hematopoietic Stem Cell Transplant - 7 years after the implementation of the project

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BACKGROUND: The patients subjected to Hematopoietic Stem Cell Transplant (HSC) show dysfunction of the immune system that continues through time, being that, after the first year after the HSC (autologous/allogenic) a decrease of the antibodies is confirmed for diseases prevented by vaccinations^[1]. In 2012, as an Intervention Project, we tried to identify the patients subjected to the bone marrow transplant in the HSC unit, with medical conditions to start the vaccination. We arranged a protocol of vaccination nursing visits which aimed to inform and direct the patient to the Local Health Unit, to start the National Vaccination Plan (NVP). In the end, we validated the fulfilment of the NVP and the existing inter competition during the same.

OBJECTIVE: This study has the aim of showing the results of the quality indicators of the project of vaccination of the patients subjected to HSC. **METHODS:** As a method we resorted to the quantitative analysis retrospectively of the application of the methodology of the Project, through the indicator of the quality of the defined result – vaccination rate of patients subjected to HSC with the National Vaccination Plan. As a sample of this study, we used the technique of convenience sampling. We included all patients subjected to HSC in medical condition to start the vaccination. The period between 2017 and 2018, the indicator of quality of the procedure was defined by the number of telephone contacts gathered in the scope of the vaccination and the analysis of its contents was done. **RESULTS:** Were part of a study 358 patients, of which 229 were subjected to HSC allogenic and 129 autologous. We obtained vaccination rates of 100% in the last years. The project started in 2012, with a rate of 87%, mainly due to the improvement of the articulation with the Local Health Units. Of the 290 telephone contacts registered, 38% corresponds to the contacts carried out by the Hospital Nursing Team to the local Health Unit and 62% from the Local Health Unit to the hospital. The topics approached were mainly the following issues: (i) if patients over 40 years of age need vaccination against HPV (27%), (ii) the authorized date to start the NVP (13%), (iii) the reason for updating the NVP (19%), (iv) the number of the vaccines to be administered by contact (39%); (v) the adequate date for the administration of the vaccine VASPR (2%). **CONCLUSIONS:** The applicability of the quality indicators permitted the improvement of the project intervention strategies and the efficacy of the same. The contacts proved to be fundamental in sharing, explanation of doubts and discussion about the vaccination of these patients, warning them for fundamental issues which should be explained in the first contact. Through the implementation of the project we were able to increase the rate of vaccination decreasing the vulnerability of

infection of these patients. This project is innovative by approaching the vaccination area of these patients seeing that this was not being re-established in a systematic way. It is reinforced by the articulation of the care by the Local Health Unit promoting its contact with the patient, achieving his loyalty thus guaranteeing the continuation of health care.

Keywords: *Vaccination; National Vaccination Program; Vaccines; Hematopoietic Stem Cell Transplant; Bone Marrow Transplant*

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Particularities of the doctor-patient relationship, in elderly patients

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BACKGROUND: In current days, the outstanding role of the physician-patient relationship and the effective communication that it allows has gained importance, as well as the concept of patient autonomy, the making of shared decisions, the patient-centered care and the doctors' empathy^[1]. The process of communication is generally complex and can get even more intricate when age becomes an issue. One of the greatest challenges faced by the physicians when dealing with the elderly is their heterogeneity due to their throbbing life experience, to their diverse cultural roots and to the physiologic ageing process itself. **OBJECTIVE:** To understand and highlight the importance of the doctor-patient relationship in elderly patients, as a fundamental intervenient in promoting the quality of medical care and the quality of life of the individual, taking into account the specifications inherent to the ageing process. **METHODS:** Research was made through medical platforms such as Pubmed, Medline and Emedicine, from 2005 to 2015, giving emphasis to recent literature. The key-words to this purpose were: "Aged", "Physician-Patient Relations", "Geriatrics", "Empathy", "Aging", "Communication". A total of 45 articles were studied and 2 books were consulted. **RESULTS:** As communication stands as the core of the clinical ability, a low level of literacy in health casts important changes in the paradigm of physician-patient relationship, beaming its relevance in discussing elderly patients^[2]. The informed consent contains several ethical and legal challenges and doctors are intended to act to achieve their successful resolution, through a clear and simplified communication route^[3]. As to upgrade physician-patient relationship and the quality of medical care, it is necessary to promote the presence of the patient's care-giver during clinical consultation. **CONCLUSIONS:** Ageing is associated with the development of a growing number of chronic diseases which, consequently, requires significant medical attention and, therefore justifying the crucial role of physician-patient relationship in maintaining the health and well-being of the elderly person. In the majority of cases, an accurate diagnosis as well as an effective treatment are greatly supported by the quality of the relationship between the intervenients. The development of communication tools and the strengthening of physician-patient bonds are of unmeasurable importance when approaching this particularly vulnerable slice of the population and its practical implementation stands as substantial challenge to the physician.

Keywords: *Aged, Physician-Patient Relations, Geriatrics, Empathy, Aging, Communication.*

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Pharmacy professionals as providers of rapid testing for HIV infection screening

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BACKGROUND: Portugal continues to have one of the highest HIV rates in the European Union^[1]. More than 20% of the infected population is unaware of the state of their infection and may unknowingly contribute to the spread of the disease. In addition, those who are not aware that they are infected, lose the opportunity to receive treatment that prolongs life at the onset of infection, and helps to reduce HIV / AIDS-related racial / ethnic health disparities^[2-5]. The inclusion of rapid HIV screening tests in community pharmacies may improve the detection of undiagnosed infections^[3]. Pharmacies are valuable partners in health promotion efforts. They can be an accessible health resource for the inclusion of HIV testing, increasing the availability, convenience, and accessibility of these testing services^[4]. However, concerns have been raised, by the public and health professionals, regarding the readiness of community pharmacies to provide such tests and the willingness and preparation of pharmacy professionals to act as providers of rapid testing for HIV infection screening. **OBJECTIVE:** This paper aims to assess the benefits and barriers associated with the introduction of HIV testing in pharmacies and ascertain the readiness and availability of pharmacy professionals to provide this service. **METHODS:** A questionnaire was applied to pharmacists and registered pharmacy technicians who worked in community pharmacies of the county of Braga, selected by a convenience sample. Data from 64 pharmacy professionals was retrieved. **RESULTS:** Ninety five per cent of the pharmacies were physically ready to provide this type of service, but only about 50% would be available at this point to start providing the screenings. Pharmacy professionals were well aware of the different types of tests available and were willing to act (58%) as providers of the HIV- screening. Most of the respondents consider that these screenings provide "greater control of the disease" (27.3%), "quick results" (25.6%), and accessibility" (25%). Nevertheless, 95% of respondents considered that mandatory previous training should be required, namely on "how to deal with positive results", but also on the fundamentals of HIV infection, transmission and treatment options. **CONCLUSIONS:** This exploratory study shows that pharmacies are physically ready to provide these screenings and that most professionals are willing to participate. Nevertheless, a focus on mandatory training and general rule of conduct must be set, in order to provide a quality service.

Keywords: *Pharmacies/organization & administration; Mass Screening/methods; HIV Infections/diagnosis*

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Tablet Splitting: Counselling the Patients Regarding Techniques and Tablet Format

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BACKGROUND: Tablet splitting consists in subdividing a tablet in order to facilitate its intake or to provide smaller doses, although its efficacy depends on many factors, such as tablet shape, size, splitting technique/device and patient ability^[1,2]. This technique is commonly used in households. Problems associated with this technique are mainly due to the lack of ability to obtain equal parts after breaking the tablet, either due to physical characteristics or the patient's ability to do so^[3], and the loss of mass due to crumbles^[4]. **OBJECTIVE:** The objectives of this study are to assess if there are any significant differences when untrained volunteers split previously selected scored tablets, by analysing the results regarding tablet format, splitting method, loss of mass and the probability of obtaining accurate halves. **METHODS:** Formulations identified by a team of pharmacy technicians as being often split in hospital practice were gathered. A total of sixty tablets were randomly chosen from each formulation and were weighted using a Kern Abs 220-4 analytical scale. The records for each formulation were then inserted in a Microsoft® Excel 2010 spreadsheet, totalling 90 results per formulation/method combination. The software was then used to verify which tablets complied with the specifications from the European Pharmacopoeia for splitting tablets and which did not have a loss of mass greater than 3%. As for splitting accuracy, the European Pharmacopoeia calls for only one half of each tablet to be weighted. For the loss of mass test, a sum of the weights of both halves was used. **RESULTS:** Regarding splitting accuracy only 40% passed the European Pharmacopoeia criteria. Regarding loss of mass, 60% presented at least one tablet with a loss of mass greater than 3%. Only 30% of the oral drug formulations complied with all the criteria established. No difference was found regarding the splitting method. **CONCLUSIONS:** Having a scoring line does not assure that it is advisable to split the tablet, since it may lead to unequal halves and/or significant loss of mass. The Pharmacy Professional should take these informations into account when counselling the patient so that he or she will obtain accurate halves and the loss of mass is not significant.

Keywords: *Tablets/administration & dosage;*

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Adesão ao tratamento em pacientes portadores de esquizofrenia

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INTRODUÇÃO: A esquizofrenia é um distúrbio psicótico grave de ocorrência em todas as populações e culturas e, quando aparece, traz consigo, não raro, efeitos devastadores. Citam-se entre os sintomas mais característicos os transtornos na forma e no conteúdo do pensamento, as alucinações e o afastamento social. A prevalência é cerca de 1% durante toda a vida e acomete preferencialmente adultos jovens, na idade educacional ou início da vida profissional. **OBJETIVO:** Conhecer a percepção dos pacientes portadores de esquizofrenia a respeito de fatores que influenciam na adesão ao tratamento proposto. **MÉTODOS:** Estudo exploratório, transversal, quali-quantitativo. Foram escolhidos de modo aleatório 30 pacientes portadores de transtorno esquizofrênico internados há pelo menos 15 dias em hospital psiquiátrico de referência onde a pesquisa se realizou. Foi utilizado um questionário para conhecer o perfil socioeconômico e um outro composto por quatro questões discursivas, cujas respostas foram gravadas e transcritas, sendo os dados transferidos para o software do Discurso do Sujeito Coletivo (DSC). Houve pré-teste dos instrumentos. O projeto foi aprovado pelo Comitê de Ética em Pesquisas do Centro Universitário Christus (UNICHRISTUS), sob o número 49562915.3.0000.5049. **RESULTADOS:** A amostra foi composta por 63% de homens, 75% solteiros, 53% tinham escolaridade fundamental incompleta, 59% eram católicos, média de idade de 41,6 anos, 13,8 anos em média de doença, 7 recaídas e 5,9 internações ao longo do tempo, renda familiar de 1,3 salários mínimos. A maioria reconhecia que a internação se dera por alteração grave no estado de saúde mental, acreditava estar seguindo o tratamento na internação de modo adequado embora desejasse que os medicamentos fossem diminuídos. Quanto às causas para possível interrupção do tratamento no futuro são apontados a presença de sintomas colaterais, uma possível cura, a falta de suporte familiar ou de eficácia do tratamento e o longo tempo do tratamento. Na maioria das falas, contudo, registra que o tratamento não será interrompido no futuro sob qualquer condição. **CONCLUSÃO:** Os discursos coletados na pesquisa

revelam o conhecimento dos fatores que motivam a não adesão do portador de esquizofrenia ao tratamento, o que se constitui matéria importante a ser incorporada às estratégias terapêuticas e que podem auxiliar na prevenção das recaídas e reinternações.

Keywords: *esquizofrenia, adesão, tratamento, discurso do sujeito coletivo, DSC*

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Leisure: formative and well-being space in young people of Viseu

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BACKGROUND: Health and well-being are associated in an ineluctable way. Predictor of well-being and, consequently, quality of life, leisure is an important part of healthy life's equation. In this understanding, the concept of health, as well as its experience, can be controlled predominantly by behavioral changes in leisure contexts^[3,8]. The current research paradigms are found in the inherent processes in subjective well-being and within the scope of positive psychology^[2,4,7], using different terminologies, as well as theoretical and conceptual definitions (happiness, affections, emotions, resilience/coping, satisfaction with life), and are determined by social, cultural, psychological and biochemical factors^[6,5,2]. **OBJECTIVES:** We focus on young's development, centering our work on the knowledge of the offered possibilities so they can live their leisure time in order to obtain healthy life habits. It follows from this objective the analysis of their choices, inferring that individuals who interact effectively with their involvement in various practices, such as sports, music, studies, have positive feelings, feelings of satisfaction. **METHODS:** This research was qualitative in nature, using semi-structured interviews applied to a study group composed of young people who attend secondary school in the municipality of Viseu. The content analysis was developed in three phases: pre-analysis (analysis of the obtained information); material's exploitation (in-depth analysis of the obtained information); data processing, interference and interpretation (comparison and analysis of the obtained data)^[1,9]. **RESULTS:** It was inferred that young people show positive levels of well-being when involved in physical and sports practices. The boys, when in competitive sport practices and the girls, when in sports and leisure recreational practices. **Discussion:** Physical activities can be understood as means to satisfy new individual needs, to achieve an active and dynamic lifestyle that enhances values and attitudes. **CONCLUSIONS:** Sport practice is considered an added value that binds for the pleasure associated to its practices,

which are conducive to subjective well-being. Its implementation, for young people, has proved to be a very important factor in their development process, as well as the nature of their experiences and interactions with their peers, through the acquisition of positive values and attitudes towards life. Leisure, as space and time of individual experience, can be an alternative in responsibility choices and in the construction of a fitting lifestyle as a self-formation skill.

Keywords: *Recreation; Sport; Well-being; Young.*

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Customer satisfaction with the service and counseling of non-prescription medicines sale places

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BACKGROUND: The market liberalization of non-prescription medicines (NPM), has led to an increase in the number of professionals and sale places. Customer satisfaction is a key indicator in assessing the quality of care and counseling at different NPM sites. **OBJECTIVE:** To evaluate the user's satisfaction degree in 3 NPM sites: pharmacies, parapharmacies and supermarkets, and related factors. **METHODS:** This descriptive, cross-sectional and correlational study was based on a questionnaire, adapted from the Pharmacy Services Questionnaire, validated for Portuguese [1], applied to 397 customers of NPM sale places of Bragança. The satisfaction

degree scale varies between 1 (not satisfied) and 5 (totally satisfied). It was used descriptive statistics and qui-square test, with a significance level of 5%. **RESULTS:** Pharmacy is the most frequent place of purchase of NPM (88.2%). The satisfaction degree for pharmacy and parapharmacy is very good (3.77±0.60 and 3.34±0.74, respectively) and good for supermarkets (2.59±0.68). The “professional’s knowledge and attention” was the most influential factor (52.6%). No statistically significant factors related to satisfaction with NPM were found. **CONCLUSIONS:** The pharmacy is the preferred place to purchase NPM. Customers are more satisfied with care and counseling in pharmacy and parapharmacy than in supermarket.

Keywords: *Customer satisfaction; Non-prescription medicines; Non-prescription medicines counseling; Non-prescription medicines sale places; Pharmacy; Parapharmacy*

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Air quality along the avenue with heavy traffic - Case Study, Coimbra

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BACKGROUND: The WHO has studied how these factors influence health and the results are not positive: about 4.2 million people die every year worldwide due to continued exposure to environmental pollutants^[1]. The concept of Air Quality reflects the degree of pollution in the environment and results from the mixture of chemicals that are released into the atmosphere by anthropogenic and natural factors^[2]. Motor traffic is one of the causes that most affect air quality, but the effect of gas concentration and particulate matter depends on a number of factors, such as time, weather conditions, wind, precipitation or even type of urban activity carried out in the geographic space under study^[3]. **OBJECTIVE:** Three points selected along the route and measurements taken in two periods with traffic variation: with and without car traffic. **METHODS:** This study was observational, case-control, and analytical. **RESULTS:** In general, it was possible to verify that the limit values legislated were exceeded for the exposure to particles, CO and CO₂, the population that uses the avenue daily, it's worrying. **CONCLUSIONS:** Mobility constructions, contributed in some

way to better conditions in the avenue, namely traffic flow, which would lead to less congestion, less vehicles stopped to pollute more time in the same place, if on one hand the traffic fluidity is noticed in some moments, promoting the burning of fossil fuels of several automobiles in a short fraction^[5] In Portugal, the scarce existence of legislation on ambient air quality does not allow for a great deal of control, hence the need to intervene in tighter supervision, starting with each one of us in homes.

Keywords: *Health, Ambient Air Quality; Automobile traffic; Ultrafine particles.*

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A Traditional Chinese Medicine Master Programme in a Medical faculty of a public university: education and research

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BACKGROUND: Over more 2000 years Traditional Chinese Medicine (TCM) has been systematized, theorized and developed different methodologies to preserve and restore health^[1]. Many countries developed regulations and accreditation for Complementary Medicine^[2,3]. Porto University has established the first TCM Master degree in a state University. The program is open to medical doctors, health-care and life-sciences graduates. During 2017, this master program proceeded to a self-evaluation, required by National Agency for Assessment and Accreditation of Higher Education - A3ES. This paper reflects the results of this self-evaluation^[4,5]. **OBJECTIVES:** To share the experience from a national university master degree in TCM; to identify intervention areas, generating a stimulus to review the processes that ensure the improvement of the course. **METHODS:** retrospective study based on official data of academic services at the University of Porto and on data from the institute for employment and professional education of the ministry of social security of the Portuguese republic. After this a Global “SWOT” analysis of the master program was performed,

that includes: General data; Characterization of the students (socio-economic, professional background, dropout, average of classifications and employability rate); Formative efficiency; School success; Level of internationalization; Academic and Scientific activity, among others parameters. **RESULTS:** Over the past 9 years, 133 students, aged between 23 and 67 years old, enrolled this master course. From the point of view of 96.43% of the students, the biomedical approach to TCM, is the main reason to the acceptance of health and life sciences professionals. SWOT analysis identified: main strength - the only master program, in a public medical school, in Portugal; Emerging area of studies in the medical and health sciences; multidisciplinary of the syllabus; level of internationalization of the program and a predominantly practical approach to content. –Main weakness - the space for practical components of the subjects. The biggest opportunity - recent changes in national legislation for non-conventional therapies. The biggest threat- non-direct access to professional licenses^[3,4]. **Conclusion:** This is the first TCM course approved by a public University, in the history of Portuguese university education, and to our knowledge, it was the first TCM master program in a public university, in the Europe. This Master program demonstrates that a scientific model of TCM is needed and accepted by health professionals and scientists. For the future we aim to improve to educate High Quality TCM professionals and to integrate them in different Health Units.

Keywords: *Traditional Chinese Medicine, Master program, Education, Research, University*

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Assessment of nutritional status and energy intake in university students

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BACKGROUND: Quality of life is closely related to the nutritional aspects. Data from the World Health Organization^[1] indicate that in recent years there has been an increase in the overweight and obesity prevalence. The situation is even worst between the youngest members of populations who are strongly influenced by the consumption of poor quality foodstuffs^[2]. Many of them eat high-calorie food with little nutritional value, which increases their risk of health problems^[3]. University students begin to select and develop food consumption and purchasing patterns in an independent way, so a correct nutritional assessment is essential to determine the best intervention and follow-up. **OBJECTIVE:** The aim of this study was to evaluate body composition, characterize the nutritional intake of

Portuguese university students and to compare with the international recommendations of nutritional intake. **METHODS:** 124 subjects were enrolled in this study (66.3% male and 33.7% female), with an average age of 20.5±1.7 years. Food intake was assessed using the Food Frequency Questionnaire^[4,5] and body composition was evaluated with a TANITA bio-impedance Analysis (BIA). **RESULTS:** All the subjects consumed carbohydrates below and protein intake above the recommended percentage. Considering fats, 35.5% of the cases remained in the recommended percentages and 56.5% consumed it in excess. The cholesterol intake largely exceeded the recommendations (445.23 ± 35.65 mg, more 45%). The prevalence of overweight was 20.5% and there was no case of obesity. **CONCLUSIONS:** These results demonstrated the need to include strategies to promote healthy eating habits in this population in order to increase carbohydrates and decrease protein intake. Moreover, attention should be paid to the high fats consumption, possibly related with the overweight prevalence. Recommendations for an active lifestyle should also be considered.

Keywords: *Nutritional status, energy intake, University students*

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Communication in health: elderly nurse relation

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BACKGROUND: Communicating is a key factor in interacting with each other. In health care, it should be a competence of professionals that concerns all strategies to make known something or influence the decisions of an individual or audience for which it is intended. Generally, in this scope it has the purpose of promoting or maintaining health^[1]. In Nursing, all caring implies a relationship of caring that requires communication, being therefore a basic instrument, but of paramount importance for nurses. With regard to the elderly population, communication plays an even more relevant role in the specificity of care that this population requires. Communication will only be beneficial when the receiver has an understanding of what the transmitter wants to say^[2,3]. When it comes to the elderly, communication is not exempt from barriers requiring the professional strategies in order to make it effective. **OBJECTIVE:** Communicating with the other is not always easy, and there are numerous barriers to this process, so it became necessary to know the difficulties that the

nurse feels when communicating with an elderly patient and identify strategies to better communicate with them. **METHODS:** We conducted an exploratory-descriptive study, with a qualitative approach. Six nurses, intentionally reunited, participated in a ACeS of Northern Portugal who were willing to provide the information. The semi-structured interview was used, with an average duration of 30 minutes, and for the data analysis and treatment it was used the content analysis technique. All ethical requirements have been assured. **RESULTS:** The interviewees were all women who had been in that service for more than 5 years, only one had a specialization. From the analysis to the interviews emerged five categories, to list: Benefits of communication between nurse and elderly; Ways of communication used by the nurse with the elderly; Difficulties in communication; Strategies of action in face of difficulties of communication with the elderly and Family Nurse Competencies. In the difficulties of communication were mentioned architectural barriers of the service, noise and interruption of the consultations, as well as difficulties of the elderly in listening and interpreting (low literacy), the fears in clarifying doubts were also mentioned. The strategies used by the nurses were to make more consultations with the elderly, advising them to have someone they trust, talking quietly and making sure that the information provided was well interpreted were other strategies used. **CONCLUSIONS:** Nurses recognize the existence of difficulties in communicating with the elderly, in particular, related to their health status, the context in which the communication process takes place, the beliefs and values they present, their fears and low literacy. They also demonstrate the need to adopt strategies to establish effective communication in order to provide quality nursing care.

Keywords: *Nursing; Health, Communication; Elderly.*

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Estilos de vida e habilidades sociais dos adolescentes: uma análise de clusters

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INTRODUÇÃO: A adolescência é um período de transição, com oportunidades, potencialidades, vulnerabilidades e riscos. As

Habilidades Sociais (HS) têm um papel importante no desenvolvimento dos adolescentes e a aprendizagem e elaboração das HS constituem indicadores de saúde. O conhecimento dos comportamentos e habilidades sociais dos adolescentes pode contribuir para a construção de uma intervenção escolar eficaz para promover estilos de vida (EV) saudáveis e o seu bem-estar psicológico e social. **OBJETIVOS:** Caracterizar o EV e as HS dos jovens da região de Tâmega e Sousa (TS) e identificar clusters que permitam analisar o perfil de comportamentos ao nível do EV e das HS. **MÉTODOS:** Estudo exploratório e quantitativo com 1008 estudantes do 3º ciclo da região do TS. Utilizado questionário sociodemográfico, “O Meu Estilo de Vida” (OMEV)^[1] para avaliar o EV e o “Inventário das Habilidades Sociais para Adolescentes” (IHSA)^[2], para avaliar as HS. Efetuada estatística descritiva, correlacional e classificatória. **RESULTADOS:** Dos participantes, 50% são rapazes, com média de idades de 13,43 anos (DP=1,1). Score médio total de 72,26%, indicador de um bom EV. A subescala Segurança Monitorizada apresentou score médio de 65,69% e a subescala Nutrição apresentou o menor score médio, 59,97%. Relativamente às HS, verificou-se um percentil médio de 67,33. Dos participantes, 50,7% apresentam repertório altamente elaborado de HS, 11% um repertório elaborado e 20,1% um bom repertório de HS. Verificaram-se relações positivas e significativas entre as subescalas do OMEV e o score global do IHSA, indicando que quanto melhor o EV melhor as HS e vice-versa. O *cluster* 1, corresponde a jovens com repertório de HS pouco elaborado, com bons indicadores de EV. No *cluster* 2, apresentam um bom repertório de HS, com bons indicadores de EV nas subescalas Exercício Físico, Autocuidado e Uso de Drogas e similares, mas com maus indicadores de EV nas subescalas Nutrição e Segurança Monitorizada. No *cluster* 3, apresentam repertório de HS altamente elaborado e os melhores EV. **Discussão:** A análise de *clusters* identificou três grupos. No *cluster* 2 estão jovens que necessitam ser integrados em intervenções de ES, por EV mais comprometidos, mas com um bom repertório de HS. **CONCLUSÕES:** Existem áreas prioritárias para intervenção de ES, no grupo caracterizado por HS com pontuações baixas na nutrição e na segurança monitorizada. Os resultados enfatizam a necessidade de ações de ES e a promoção de competências sociais como determinantes para um EV saudável^[3].

Keywords: *Adolescentes, Estilo de Vida, Habilidades Sociais*

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Efficiency of insulated thermal bags intended for the transport of refrigerated food

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BACKGROUND: Refrigeration is one of the methods of preserving the quality and safety of the most practiced foods. Temperature is one of the key parameters that affects the growth and survival of microorganisms in food, so maintaining the cold chain becomes essential to ensure food safety^[1,2]. However, temperature control in the last three stages of the cold chain has proven critical, including in direct selling situations^[3]. The consumer often uses thermal insulation bags, especially when he needs more time to get home^[3,4]. If these bags are not as efficient as the consumer would expect, regardless of the outside temperature and degree of bagging, the risk of food infection/deterioration increases^[3,4]. **OBJECTIVE:** Thus, the objective of this study was to evaluate the efficiency of insulated thermal bags in domestic transportation of frozen and/or refrigerated foods, from the place of purchase to the consumers' home. **METHODS:** The efficiency of three thermal insulation bags and a typical PVC bag as a control was evaluated. Different conditions, internal - related to the bag load - and external - related to the external temperature were considered, and the possible relationship of the results with the price of the bags was evaluated. Measurements of the internal temperature of the three artificial test objects were carried out using a probe thermometer connected to a temperature data recording device (Testo 177-T4) with a measuring range of -200°C to +400°C, resolution of 0.1°C and accuracy of ±0,3°C. To control the experimental conditions an air temperature incubator (Kambič I-45 CK) and a refrigerator (Zanussi ŽRG309W) were used. Evaluations were performed at five-minute intervals. **RESULTS:** The measurements revealed variations of the internal temperature of the test objects depending on the air temperature and the degree of charge of the bag. **CONCLUSIONS:** It was concluded that the insulated thermal bags evaluated are not efficient enough to preserve a suitable ambient temperature for the refrigerated and / or frozen foods used in the defined experimental conditions, which indicates the need to improve their effectiveness and stresses the importance of between the places of purchase and the home of the consumer. There were no statistically significant differences between the efficiency of the thermal bags compared to the price, nor compared to the PVC bag. For exact food safety assurances, microbiological predictive models and / or microbiological analyzes should be performed, establishing an integrated approach to the safety evaluation of the refrigerated product^[5].

Keywords: *Food safety, food transport, cold chain, thermal bags.*

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Project plus UTAD: Body image and physical activity in university students

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BACKGROUND: The project "PLUS UTAD – Plano Universidade Saudável (University Health Plan)" aims to promote university students' health, creating conditions for an easier and more positive adaptation to higher education. The beginning of higher education is a significant and difficult change in the life cycle, implying new challenges, readjustments and responses. This change may be a risk factor in the adoption and maintenance of healthy lifestyles. Sedentary lifestyle and overeating patterns are the main causes of overweight and obesity which may be in conflict with the society demands from the young people to be a lean body model, which has led to a high image dissatisfaction. **OBJECTIVE:** The aim of this study is to compare the perception of body image, obesity, physical activity and health status between Psychology and Sport Sciences undergraduate students. **METHODS:** The sample consisted of 106 university students (age 21.30 ± 4.51 years) from Psychology and Sport Sciences (62 boys, 44 girls). BMI was assessed using cut-off values to define obesity. The questionnaire Health Indicators and Quality of Life of Academics^[1] and the Silhouettes Scale of Kakeshita and Almeida^[2] were applied. **RESULTS:** Overall, 17.7% of the sample were overweight and obese, and 61.9% were dissatisfied with their image. 67% practice physical activity ($\geq 2x/week$) and 82.1% consider their health to be good or very good. Results of the t-test showed that students of sport sciences present a higher BMI than those of psychology (23.33 vs 21.21 ; $p=0.01$). Through the chi-square test it was possible to pointed out that 85% of students in sport sciences report practicing physical activity, while in psychology students the percentage was lower ($p=0.000$). Significant differences in the ideal body image were found between courses ($p=0.018$), with the students of sports sciences choosing a leaner silhouette. Regarding health status, the students of sport sciences presented a better perception compared to those of psychology ($p=0.031$). There was a significant association between general health status and dissatisfaction with body image ($p=0.012$), revealing that students with a good or very good health status are more satisfied with their image. **CONCLUSIONS:** In conclusion, the prevalence of overweight and obesity is high between the university students, as well as the percentage of dissatisfaction with body image. According to our expectations, students of sports science practice more physical activity, are more demanding with body image and perceive their health as better than those of psychology. We emphasize the need to promote health in this population, through intervention strategies aimed at developing a healthy lifestyle.

Keywords: *Body Image Perception, Obesity, Physical Activity, Quality of Life and University Students*

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Emotional Health of Teachers: The Importance of Emotional Intelligence Training

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BACKGROUND: The professional activity of teachers has associated a high level of attrition in emotional stability, generating negative emotions that appear associated with stress, depression, professional malaise and burnout. The work stress and lack of emotional self-regulation appear as the main reasons for the dissatisfaction of teachers and highly associated with burnout. The nature of the current education system challenges teachers that increasingly require the use of emotional capacities.

OBJECTIVE: In this context, this research aimed to carry out a review of publications on health and emotional well-being of teachers and identify lines of interest for future research, performing a systematic review in the publications indexed in the SciELO. **METHODS:** A systematic search resulted in the selection of 10 articles, with the main criteria the selection of research carried out in Portugal. **RESULTS:** Through the literature review, the indicators of emotional intelligence are registered and the importance of this theme is highlighted in the initial and continuous formation of teachers, with the purpose of enhancing their health and emotional well-being and, consequently, to foster positive responses to the challenges posed by the Teaching System. The studies indicated the presence of stress and negative emotions, both in relation to the pedagogical work and in relation to unruly behavior of students^[1]. Faced with continuing exposure to work stress, teachers experience negative consequences on their health and well-being. It is confirmed that the Portuguese teachers experience symptoms of physical fatigue, cognitive fatigue and emotional exhaustion report problems^[2]. In the same sense^[3], they demonstrate that the dimension with the greatest potential predictor of burnout is emotional exhaustion. Deficits in emotional abilities are directly related to high levels of burnout and stress^[4]. **CONCLUSIONS:** The data report a reality of emotional fragility of Portuguese teachers, highlighting the importance and benefits of training in emotional intelligence. It is concluded on the need for more research that meet widely to health and well-being of teachers, including emotional and physical health as well as the need for more research on the topic that lists the benefits of emotional intelligence on the health and well-being of teachers. In this sense, it is necessary to incorporate in teachers' training spaces times of reflection that provide the awareness and strengthening mechanisms promoters of emotional well-being and emotionally appropriate responses.

Keywords: *emotional intelligence, teachers, health, stress, burnout.*

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Scientific publications in Portuguese nursing magazines: The valorization of the phenomenon of comfort

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BACKGROUND: In the field of nursing, much of the published research comes from higher education institutions (or associated research centers), deriving the remaining contexts from clinical practice^[1]. For the growth and visibility of the nursing profession it is quite relevant to know its scientific production in quantitative and qualitative terms^[2]. **OBJECTIVE:** To typify the production and dissemination of knowledge in nursing from scientific papers published in free access Nursing Journals, available from a web page, and published between January 2016 and December 2018. **METHODS:** Documentary research using a descriptive study of qualitative approach. Retrospective study using secondary data^[3]. The inclusion criteria were publications between 2016 and 2018, in Portuguese Scientific Nursing Journals with open access: *Revista Referência*; *Revista Pensar Enfermagem*; *Revista Sinais Vitais* e *Revista Investigação em Enfermagem* in full text and nursing articles. **RESULTS:** The corpus of analysis consisted of 284 articles, of which 169 were from the *Revista de Enfermagem Referência*, 50 from *Revista Investigação em Enfermagem*, 20 from the *Pensar Enfermagem* and 45 from the *Sinais Vitais*. In terms of number of publications, there was a decrease in all journals except for *Referência* magazine. The most published types of studies were: the exploratory and descriptive ones followed by the validations of data collection instruments. Regarding the number of authors per article, the average is 4. With a slight difference, nurses publish more than teachers. The scientific production is mainly performed in the hospital context and in the care delivery. As far as the areas of specialty in nursing are concerned, there are more studies published in the area of surgical specialty. Most comfort articles consider that this concept is related to the experience of the person benefiting from some form of help (something or someone helping to strengthen) and thereby having acquired or face something. **CONCLUSIONS:** the analysis of investigative action trends may reflect concerns about the way nurses have been focusing and responding to the problems inherent in caregiving. In the articles consulted, comfort appears timidly as one of the (sub) results sensitive to nursing care, associated to the management and control of symptoms (from the perspective of relief of discomfort), satisfaction with care and its results.

Keywords: *Nursing, Research, Publications*

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Gratitude - healthy dimension of human expression

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BACKGROUND: Positive Psychology recognizes the gratitude in the space of the healthy dimensions of human expression, defining it as an emotion that reveals itself in the act of recognizing a benefit when one becomes aware that another person, an extraordinary entity or force, compete intentionally for your well-being. Empirical evidence associates the gratitude with positive physical and psychological outcomes, such as increased positive affect and prosocial behavior, and consequently decreased risk of negative physical or mental affectation^[1]. For Robert Emmons^[2] gratitude has a peculiar characteristic, reciprocity, which helps to build the indispensable foundations for the relationship and unity of people, allowing to intertwine with each other healthily. **OBJECTIVE AND METHODS:** Aiming to review the results achieved by the investigation of this theme, used the exploratory and descriptive methodology from several bibliographical references. Gratitude is confirmed as an important emotional resource to promote social stability, to stimulate reciprocity in human interaction, and to inhibit destructive interpersonal behaviors. Affirmed as an effective condition in the promotion of well-being and in the construction of psychological, spiritual and social resources. It has the added benefit of protecting us from the effects of negative emotions such as conflict, jealousy and resentment, and together it seems to contribute to improving feelings of friendship and kindness, as one wants the best and is He gives, through gratitude, what is right to those who have done us good^[3]. Gratitude journals make it possible for people to become closer, making them feel closer and more connected, showing greater willingness to help, and being appreciated within their social network as the most helpful people. **RESULTS:** The people they deal with daily seem happier and appreciate their company. A brief introspection exercise or brief intervention focused on recognizing situations that are worthy of gratitude, even if only for a few minutes, can be a very useful way to raise your mood, restore confidence, and empower a person to cope with it less favorable periods^[4]. **CONCLUSIONS:** Great benefits can come from “gratitude visit” to someone or a worthy institution or writing a letter to a benefactor thanking him or her for the benefit received^[5].

Keywords: *gratitude, health, positive psychology, reciprocity*

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Food consumption in children and influence of family farming in Bragança district: application of Multiple Correspondence Analysis

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BACKGROUND: The practice of healthy eating habits is associated with a reduced risk of some chronic noncommunicable diseases, and includes limited consumption of red and processed meats, as well as preferential consumption of minimally processed foods, including fruit and vegetables. The consumption of these foods is associated, for example, with the increase of energy and the protection of cells and tissues that help to prevent cell aging^[1-3], however the daily amount recommended by the World Health Organization for fruits and vegetables is not reached in Portugal^[4]. Family farming contributes to the preservation of traditional foods, to the practice of a balanced diet and food security^[5]. There are few studies that attempt to understand the possible relation between the production of food, such as fruit and vegetables, and its consumption, with the majority of the population being economically disadvantaged, in which the quantity and variety of food is limited. **OBJECTIVE:** To investigate associations between food consumption in children, and a set of variables related to children, parents and their family environment, in the district of Bragança. **METHODS:** This is a cross-sectional study with children of both sexes, aged 8 to 12 years old, attending public education. A questionnaire was applied to analyze the existence of own production in the family environment and the consumption of fruit and vegetables, meat and derivatives. The data were analyzed with the statistical program R, by descriptive statistics and multivariate analysis, with the technique of Multiple Correspondence Analysis. **RESULTS:** A total of 224 children, with a mean age of 9.9 ± 1.2 years, of which 76.3% consumed fruit daily, 39.3% were vegetables and 53.1% were soup. The existence of family farming in the majority of the children surveyed was verified. The results of the Multiple Correspondence Analysis suggest a positive association between the daily consumption of soup, vegetables, fruit and the existence of family farming. **CONCLUSIONS:** This study suggests associations between the different variables studied. However, given the limited number of studies on the subject, more research is needed to investigate the relationship between food consumption and family farming, since current agricultural policies point to promoting the development of this type of agriculture, promoting a more balanced and secure diet, and promoting rural development. It is therefore appropriate to consider ways of increasing the variety of these foods and to promote their cultivation in the family environment.

Keywords: *consumption of fruit and vegetables, family farming, own production*

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Intervenção de doutores palhaços em cuidados paliativos pediátricos: expectativas de pais e profissionais

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INTRODUÇÃO: A literatura tem vindo a evidenciar os benefícios do humor na saúde, em geral, e no internamento hospitalar, em particular. Não existe, no entanto, consenso relativamente à definição de humor, nem tão pouco sobre os tipos de intervenções, ou sobre o melhor método para avaliar os seus efeitos. Existem também poucos estudos sobre o efeito deste tipo de intervenção com pacientes em final de vida, embora os seus resultados sejam promissores, nomeadamente no que respeita à melhoria do bem-estar, qualidade de vida, comunicação e ligação entre profissionais de saúde e familiares, podendo mesmo levar a uma diminuição da perceção da dor^[1]. Em Portugal, estima-se que cerca de 6.000 crianças vivam com doenças limitantes ou ameaçadoras da vida e com necessidades paliativas. Estas crianças têm diagnósticos muito heterogêneos, alguns deles raros, vivem dispersas por todo o país e as respostas às suas necessidades nem sempre são as mais ajustadas. Neste contexto, a intervenção dos palhaços de hospital - artistas profissionais que recebem treino específico para intervir em contextos de saúde e que trazem para o seio dos mesmos alegria, humor e riso, - poderá ser uma resposta relevante^[2,3,4,5]. A Operação Nariz Vermelho (ONV) iniciou, recentemente, uma colaboração com uma Unidade de Cuidados Continuados e Paliativos para crianças com patologia crónicas, um projeto pioneiro em Portugal. **OBJETIVO:** Numa tentativa de averiguar os benefícios da intervenção dos Doutores Palhaços (DP), desenhou-se um estudo que tem acompanhado, desde o início, esta parceria. **MÉTODOS:** Numa fase preliminar, prévia ao início do programa, auscultaram-se as expectativas dos vários intervenientes - familiares, profissionais da unidade e artistas - relativamente aos efeitos desta intervenção junto da criança, familiares e dos profissionais que, em breve, iriam passar a receber a visita dos DP. A recolha das expectativas fez-se através de entrevistas semiestruturadas, em formato individual e em grupo. **CONCLUSÕES:** Por intermédio dos resultados deste primeiro estudo, ainda em fase de análise, pretende-se contribuir para a produção de conhecimento, praticamente inexistente, sobre os efeitos do humor em cuidados paliativos de fim de vida, dando voz aos diferentes intervenientes, avaliando o impacto na saúde e bem-estar de cada um deles, e integrando o saber de várias áreas disciplinares.

Keywords: *cuidados paliativos pediátricos, palhaços de hospital, humanização de cuidados.*

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Geographical analysis of the exposure to infrasound and low frequency noise, originated by wind turbines

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BACKGROUND: Despite technological advances to make wind turbines quieter, they still produce sounds resulting from their mechanics and aerodynamics^[1,2], namely infrasound and low-frequency noise that can affect the quality of life of human populations^[3]. This type of noise can develop acoustic processes that are not processed by the ear and cause irreversible injuries to the human body. **OBJECTIVES:** This study aimed to analyze the wind turbines noise behavior based on distance to source, air velocity and wind direction. It also aimed to measure the sound pressure level produced by wind turbines and to analyze the difference between Infrasound and Low Frequency Noise and Environmental Noise. **METHODS:** Three wind farms in the district of Leiria were selected, where a total of 416 measurements were performed. The type of study was transversal, cohort observational and sampling was probabilistic in type and convenience in technique. Measurements were performed with the CESVA SC420 sound level meter. The measurements were taken taking into consideration the cardinal and collateral points around three wind farms in the municipalities of Alcobaca, Batalha and Porto de Mós (Portugal). The measurement points were defined at distances: 0; 0.5; 1; 2; 3; 4; 5; 10; 15 km. Four types of noise were evaluated, classified as: Infrasound (2-20 Hz/dB), Low Frequency Noise (20-500 Hz/dB), Infrasound and Low Frequency Noise (2-500 Hz/dB) and Environmental Noise (dB(A)). **RESULTS:** It was found that the distance to the source is not a relevant factor in the reduction of noise levels and to higher the air velocity, higher sound pressure levels. It was also found that the points “South” and “Southwest” were where there were higher noise levels. Other factors were relevant in the propagation of noise, namely the terrain profile, the existence of caves, the proximity to the coast and forests. There is a very significant difference when comparing measurements in dB or dB(A), especially in infrasound, which reinforces the need for noise to be assessed as an agent that may have other biological impacts than deafness^[4]. **CONCLUSIONS:** It is concluded that it is important to adopt

territorial management measures taking into account the protection of public health, particularly in the installation of wind farms at safe distances and to include infrasound and low frequency noise in environmental impact studies.

Keywords: *Wind turbines, Noise, Infrasound and Low Frequency Noise, Quality of Life, Geography*

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Is bullying an issue for primary care physicians? A Case Report

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BACKGROUND: Bullying is defined as the systematic abuse of power, considered as psychological or physical aggression with intention of causing distress to another person^[1]. It has been considered a major risk factor for mental disease and abnormal psychosocial development^[2,3,4]. **OBJECTIVE:** The purpose of this case report is to raise awareness of bullying as an emerging problem among youth with severe long-term consequences for mental health and also to demonstrate the role of the primary care physician in the assessment of this issue. **METHODS:** A 15-year-old female teenager was brought by her mother because she “wasn’t well”. Her mother described that she would isolate herself, had low self-esteem and would cry easily. Although she was considered a good student, she had lost interest in academic activities and her grades were decreasing. The psychosocial interview HEADS^[4] was applied and the patient revealed she was a victim of bullying. According to the patient, her peers would make fun of her, exclude her and physically abuse her. Her mental exam showed depressive humor, disinterest and suicidal ideation. Other symptoms such as weight loss, insomnia, headaches and anxiety were also present. **RESULTS:** Due to high risk of suicide the patient was referred to the pediatric urgent care service and was admitted under the child and adolescent psychiatry team. During admission treatment with 50mg of sertraline and 1mg of risperidone was introduced with successful outcome in symptom relief. The patient now has maintained follow up with physiologist, child psychiatrist and the school has also been advised to adapt measures to protect the adolescent from retaliation. **CONCLUSIONS:** Children and adolescent victims of bullying are more likely to present with somatic symptoms such as headaches, abdominal pain and sleep distress, they also have higher risk for mental disease such as depression. The negative impact of bullying may persist into adulthood with psychosocial consequences. The family doctor in this case had an important role in detecting and providing long-term follow up to these patients as well as intervening in the school and community to apply corrective and preventive procedures against bullying^[5].

Keywords: bullying, suicidal ideation, mental health, adolescence, family medicine,

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Burial or cremation, what's the best option for the environment?

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BACKGROUND: The impact of funerals on the environment is increasingly cause for concern from the population. More and more attention is paid to ceremonies than to the cremation or burial, there are a number of factors that must be taken into account to reduce the environmental impact, for example, the preparation of the body, how the urn is made, lighting, heating or cooling the place of the wake, not forgetting the transport of relatives and friends who attend the ceremony. There are also theories that confirm that traditional burial is the one that has the greatest environmental impact, this is mainly due to soil area occupied in cemeteries, while the cremation, weighs energy consumption and pollutant emissions. **OBJECTIVE:** The main objective is to see whether the cremation or burial that environmental impacts are greater. **RESULTS:** Through this article it was possible to identify some environmental impacts that are caused by funerals, concluding that seeing the process as a whole, the ceremony is what causes more environmental impact due to the surrounding aspects. It was also identified that it is the burial that causes the most impact compared to cremation, especially in the area of soil occupied by cemeteries, while cremation weighs the energy consumption and emission of pollutants. **CONCLUSIONS:** One of the reasons for this study was to arouse interest in this area that has not yet been explored in Portugal in order to contribute to the discussion about the environmental impacts caused by the funeral processes that are part of the Portuguese daily life, as well as the openness to the discussion of new methods of more sustainable funeral processes that are beginning to be used in other European countries, which may be the new trend of choice in the future.

Keywords: Environment, Public Health, Cremation, Burial

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Influence of solvent type, extraction techniques, particle size, extraction times and temperatures on antioxidant activity of *T. hispanicum*

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BACKGROUND: Plants of the genus *Taraxacum* have been used for years in medicine and food. This genus, with a complex taxonomy, includes some species of difficult distinction, where *T. hispanicum* is included. The leaves of these plants, known as dandelion, continue to be used as infusions, ethanolic extracts, or as juice^[1,2]. Since the plant represents an important source of pharmacologically active molecules, namely antioxidant activity, it is important to develop extractive procedures to maximize its potential health benefits. **OBJECTIVE:** Thus, the main objective of this work is to evaluate the effect of solvents, extraction techniques, particle size, extraction times and temperatures on the antioxidant activity of *T. hispanicum*. **METHODS:** Experimental study with analysis of the following factors, solvent type (distilled water and tap water), particle size (large particles and powder), extractive technique (infusion, maceration and decoction), temperature (60 °C and 100 °C) and extraction time (3, 10 and 20 minutes). The antioxidant activity of *T. hispanicum* was analyzed using different methods, namely DPPH radical assay, superoxide and iron chelation assay. For all assays the IC₅₀ value was calculated. **RESULTS:** The lowest value of IC₅₀ was obtained for the extraction process carried out with the temperature of 60 °C (powder), followed by the maceration process (powder) with the superoxide assay (4.6 ± 4.6 µg / mL and 17.20 ± 0.6 µg / mL, respectively). In both cases, the value was lower than the IC₅₀ value for positive control (ascorbic acid - 77.5 ± 10.9 µg / mL). These extracts were made with distilled water that presented better value of IC₅₀ than tap water. In this case, polyphenols can combine with Ca²⁺ and Mg²⁺ and be partially retained in the solvent residue, which may explain the best results for distilled water^[3]. Regarding the temperatures analyzed, the best IC₅₀ value was obtained at 60 °C. Certain phenolic compounds may undergo denaturation at high temperatures. Also, the reduced particles increase the contact surface between samples and extraction solvents which can increase the extractive yield and, consequently, its antioxidant capacity^[4]. **CONCLUSION:** The use of distilled water, reduced particle sizes, lower temperatures and longer extraction times (20 minutes) appear to be good factors for the extractive processes of dandelion, affecting its antioxidant activity. It would be important to carry out other antioxidant assays and the determination of total content of phenolic compounds in order to relate it to antioxidant activity.

Keywords: Antioxidant activity; Dandelion; Extraction Time; Particle Size; Phenolic Compounds; Solvent; *T. hispanicum*; Temperature

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Matrix Metalloproteinases-2 and -9 and its Tissue Inhibitors-1 and -2 in Diabetic Patients with Periodontal Disease

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BACKGROUND: Diabetes Mellitus (DM) is a metabolic deficiency, characterized by chronic hyperglycemia that induces several systemic and oral complications. Epidemiological data confirm that diabetes is a risk factor for the development of periodontitis, and is considered the sixth chronic complication of DM^[1]. The base of the relationship between periodontal disease (PD) and DM is the presence of an exacerbated chronic inflammation state. PD is a chronic infection, characterized by the degradation of the structures of the tooth support, the periodontal

ligament and alveolar bone^[2]. Due to the increasing incidence of DM and its complications, such as PD, it is of interest to detect biomarkers of the PD stage, which may lead to the possibility of discovering a therapeutic intervention. Matrix metalloproteinase (MMP) -2 and MMP-9 play a crucial role in the inflammatory processes of DM and DP and are inhibited by the metalloproteinase tissue inhibitor (TIMP) -1 and TIMP-2, respectively^[3]. **OBJECTIVE:** The aim of this study is to evaluate the impact of type 1 DM and PD on the salivary levels of MMP-2, MMP-9, TIMP-1 and TIMP-2 and respective correlations in type 1 DM subjects in comparison to a healthy control group. And, evaluate the levels of MMP-2, MMP-9, TIMP-1 and TIMP-2 according to the index of periodontal disease introduced by Ramfjord 1959 (IDP Ramfjord). **RESULTS:** The study sample consisted of 12 diabetic patients and 9 healthy controls followed at the District Center Hospital. The saliva samples were collected and the described parameters were evaluated through the slot blot technique. Salivary levels of MMP-2 and MMP-9 were tendentially higher in the diabetics, TIMP-1 levels were tendentially lower, and TIMP-2 levels did not differ significantly between groups. The ratio of MMP-9 / TIMP-1 levels was higher in the diabetic group (0,23±0,01) in comparison with control group (0,2±0,01) ($p<0,05$). **CONCLUSIONS:** Levels of MMP-9 and TIMP-1 tended to be higher in the group of diabetics with poor oral health. The levels of MMP-2 and MMP-9 in diabetic patients, as well as levels of MMP-9 and TIMP-1 in patients with poor oral health (periodontal disease), tended to be higher, possibly due to the exacerbated inflammation present in DM and PD. Thus, the possibility of a significant relationship between increased MMPs and the progression of DM and PD can't be ruled out, being some differences not statistically significant, probably due to the reduced number of patients with DM type 1 and PD studied.

Keywords: MMP-9, TIMP-1, Diabetes Mellitus, Oral Health, Periodontal Disease

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Radionic Crystals in water alkalization and in the decrease of Organic Clusters

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BACKGROUND: The Radionic energy, described by Albert Abrahams in the 20s of the 19th century^[1,2], which through electrical machines, today electronic, we managed to interfere mentally in the atoms. Nanotechnology demonstrated that we could reduce any element, where Richard Feynman^[3], considered the father of nanotechnology, described in 1959 that it would be possible to write all the words written in the mankind history, in

a cube of 0.2 millimeters, As long as they were written in the atoms. Through these concepts, Raul Breves^[4] has integrated into small glass spheres in whose atomic structure there are recorded feelings generated by Taoist meditations, by Radionics, which generated in 2008 the Radionic Crystals (CRs)^[4,5]. The mechanism of action of CRs is to act directly on body water molecules, where water is influenced by the environment^[2]. In terms of homeostasis, studies demonstrate the need for biological clusters (three water molecules grouped together) in the blood^[3]. Under stress the clusters become very large, preventing the blood cells from excreting harmful by-products originating from cellular activities, such as the pollutants we ingest with food^[3,4]. **OBJECTIVE:** To verify whether the use of CRs can make the pH of water more alkaline. **METHODS:** Water pH analysis using two 50ml glass containers duly sterilized and sealed, the same deionized water was added, the initial pH of which was 5.8. In a glass container was placed a sachet containing about 800 spheres of CRs, properly washed (deionized water) and, in the other container without CRs, keeping them side by side in the same environmental conditions. Standing side by side, properly sealed, with initial analysis and after 72 hours through the AK50 apparatus of pH analysis. **RESULTS:** Water analysis showed that the pH of the water containing the sac with CRs obtained an increase for 5.92, with the alkalization of the water pH. The container without CRs recorded a slight acidification of the pH of the water at 5.79. **CONCLUSIONS:** The use of CRs allowed the alkalization of deionized water, allowing to reduce the size of the clusters gives water. This study allows to indicate that the use of the Radionic Crystals when placed in the body can improve homeostasis, acting through the alkalization of water, facilitating the regenerative process.

Keywords: *Radionic crystals, homeostase, Radionicenergy, water pH*

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Effect of smoking habits on glutathione levels

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BACKGROUND: Currently, smoking is defined as the main avoidable cause of illnesses, with a gradual increase in consumption worldwide, especially among young people. Oxidative stress arises when there is an increase in the formation of reactive oxygen species, exceeding the antioxidant capacity. Smoking habits contribute to its increase because cigarette smoke contains high concentrations of various reactive oxidizing agents. During oxidative stress, the body's antioxidant defense mechanisms try to restore rebalancing. Namely, through the levels of glutathione and the enzymes involved in its oxidation / reduction cycle. Glutathione is an essential tripeptide that exists in the reduced form (GSH) and oxidized (GSSG) and is involved in the elimination and conjugation of reactive oxygen species that alter its homeostasis, its action being catalyzed by glutathione peroxidase and glutathione reductase. **OBJECTIVE:** The main objective of this investigation was to evaluate the effect of daily smoking habits on glutathione levels. **METHODS:** The sample of this study consisted of 86 university students in the age group between 18 and 25 years to whom blood was collected. The determination of GSH and GSSG was carried out by fluorimetry. Questionnaires were also given to participants in order to relate daily smoking behaviors to laboratory results. **RESULTS:** GSH levels were not different in smokers compared to non-smokers. When GSSG levels were analyzed, there were no differences in smoking individuals when compared to non-smokers. The GSH / GSSG ratio showed no differences in the smokers group compared to the control group. **CONCLUSIONS:** The results obtained do not present statistically significant differences, being a limiting factor the low smoking history of the participants, as well as the reduced number of individuals that include the groups of the present study sample. Therefore, as future prospects, it would be important to continue this study with a larger number of samples and also to determine the activity of the enzymes involved in the cycle of glutathione use.

Keywords: *oxidative stress, glutathione, smoking*

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The experience of caring for people with advanced disease Carlos Laranjeira¹

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BACKGROUND: Caring for a person with advanced disease at home is a threat to family stability. The family that faces this reality is faced with a complex situation in which it has to mobilize strategies to provide physical, emotional and spiritual care to the loved one. What determines that providing care at home is a difficult option, since it implies availability/ full capacity on the part of the caregiver depriving themselves of their social or even professional activities^[1,2]. **OBJECTIVE:** To describe the lived experience of the family caregivers of people with advanced disease. **METHODS:** This is a qualitative,

descriptive and exploratory study, approaching the biographical method, insofar as it uses segments of life histories. This study was carried out in the natural setting (home) of the family caregivers of people with advanced illness who had the support of a household team from a Portuguese hospital in the center of the country, from January to June 2017, for a total of 22 caregivers. Two semi-structured interviews were applied by each caregiver, with three themes to be explored: care at home, perception of the health status of the caregiver, and positive and negative aspects associated with care. **RESULTS:** The caregivers interviewed had ages ranging from 45 to 67 years, with a mean of 55.8 years. The time of experience as a caregiver ranged from 6 months to 22 months, with an average of 14 months. Data analysis reveals that caregivers provide multiple and multi-dimensional care ranging from instrumental care to emotional care, not often feeling prepared to identify and intervene in the symptoms associated with disease progression. Caregivers express difficulties in managing communication with the patient and expressing their emotions, namely crying. **CONCLUSIONS:** The findings seem to indicate that the difficulties experienced by the participants are directly related to the type of needs that the patient presents, so it is pertinent to carry out a broad study involving patients with different levels of complexity in order to assess the difficulties / needs felt by their primary caregivers. It may also be helpful to develop educational programs for caregivers in areas such as symptom identification and management of the therapeutic regimen.

Keywords: *caring, lived experience; advanced disease*

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“Ler e escrever com todos os sentidos”: programa e método multissensorial

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INTRODUÇÃO: No 1.º Ciclo de Educação Básica, a aprendizagem da leitura e da escrita é uma ferramenta fundamental para potencializar o sucesso académico de todas as crianças e melhorar a sua qualidade de vida. Contudo, nem todas reúnem as condições para que estas aprendizagens ocorram, como é o caso dos alunos com Perturbação Intelectual (PI) e Perturbações Fonológicas (PF). **OBJETIVO:** O objetivo deste estudo foi compreender e documentar as alterações que ocorreram, na aprendizagem da leitura e na escrita, decorrentes do desenvolvimento e implementação de um programa de ensino da leitura e escrita baseado na metodologia multissensorial. Esta abordagem consiste em aumentar as ajudas sensoriais dadas à criança durante o ensino formal da leitura e escrita e segundo Capovilla e Capovilla^[1] esta é a metodologia mais adequada para ensinar crianças com enorme insucesso escolar. **MÉTODOS:** A construção do programa e método multissensorial «Ler e escrever com todos os sentidos» foi baseada na nossa experiência profissional recorrendo a múltiplas ajudas sensoriais: visuais, auditivas, táteis, quinesísticas e fono-articulatórias. Deste método, fazem parte 21 pranchas, que representam a

correspondência fonema/grafema pura, ou seja, cada grafema apresenta uma única representação fonémica e vice-versa. Cada prancha apresenta um grafema, com a respetiva descrição do gesto e a pista visual utilizada. O método foi aplicado ao longo de quatro meses, em sessões individuais semanais, de 45 minutos, em contexto hospitalar. Foram selecionados, por conveniência, cinco participantes com PI e PF, com três ou mais anos de escolaridade sem aprendizagens de leitura e escrita. Os cinco participantes foram avaliados inicialmente com a ACLLE^[2] (Bateria de Avaliação das Competências de Leitura e Escrita) que avalia a criança em idade escolar, nas áreas da fonologia, leitura e escrita, e com a Bateria Infant/Toddler Sensory Profile^[3], que possibilita traçar o perfil sensorial de cada participante. No final da aplicação deste método, todos os participantes foram reavaliados com a aplicação da ACLLE. Pudemos constatar melhorias na leitura e escrita. **RESULTADOS:** Na leitura, pudemos verificar melhorias em quatro dos cinco participantes, já nos processos de escrita estas evoluções verificaram-se em todos. **CONCLUSÕES:** Segundo Moats^[4], a aprendizagem da leitura e o soletrar implicam processos de aprendizagem semelhantes. Pugh et al.^[5] referem que é essencial que a criança compreenda a natureza segmental da linguagem, de modo a compreender os processos de leitura e escrita. Por isso, parece-nos importante referenciar, apesar de não fazer parte dos objetivos deste estudo, que foram verificados progressos na consciência fonológica, em todos os participantes. A leitura e a escrita são ferramentas de procura de conhecimento indispensável na sociedade atual, são também fundamentais para a melhoria da qualidade de vida do indivíduo, por tal, pesquisar sobre novos métodos de ensino que poderão ser eficazes no potenciamento desta aprendizagem revela-se fundamental.

Keywords: *leitura, escrita, multisensorial*

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Evaluation of sound pressure levels in a place exposed to a wind farm: Case study of Coentral Grande

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BACKGROUND: Concerns about the environment and the search for new solutions for the supply of electricity have motivated the development of renewable energy, namely wind energy^[1]. This energy source, although presenting benefits directly related to the reduction of CO₂ emissions, mainly by reducing the dependence on the use of fossil fuels^[2] there is a problem regarding the noise generated by wind turbines and consequent adverse effects on public health^[3]. **OBJECTIVES:** The objectives of the present study were: to analyze and characterize infrasons and low frequency noise (RBF) and environmental noise (RA) in the Coentral Grande population, due to exposure to the Coentral-Safra wind farm; perceive the behavior of the types of noise analyzed in relation to the period of the day (daytime or night) and the climatic conditions. **METHODS:** The study was observational, level II, descriptive-correlational and cross-sectional, and the measurements performed in the village of Coentral Grande (Castanheira da Pêra County). The sample design was non-probabilistic for convenience. The choice of measurement points was based on the whole area of the target population, and a matrix was composed of 81 measurement points. A total of 137 measurements were performed (from May to July 2018) using the CESVA SC420 Sound Level Meter. The sound level meter was placed 1.5m from the ground and 2m from dwellings and / or infrastructures. The one-minute measurements included frequencies from 2Hz to 20000Hz (2Hz / line), in dB and dB (A). Subsequently, the following types of noise were calculated: Infrasons (2 to 20Hz); RBF (20 to 500 Hz); IRBF (2 to 500 Hz); RA. A point 15 meters from the northwest wind turbine was set to perform measurements (with TSI 8554 multiparameter meters) of temperature, relative humidity and air velocity. **RESULTS:** The results showed that the production of Infrasons and IRBF is influenced by the air velocity, since the rotor of the aerogenerator rotates more and consequently more times it passes the blade through the tower producing more low frequency noise. **CONCLUSIONS:** It was also verified that in the night period there is an increase of infrasound and IRBF levels, as a result of the variation of the air velocity and the relative humidity. Continuous exposure over a given period of time may cause some side effects such as those associated with Vibroacoustic Disease^[4] and Wind Turbine Syndrome^[5].

Keywords: *Wind Turbines, Noise, Infrasons, Low Frequency Noise*

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Analysis of behaviors of organizational citizenship and presenteeism in Portuguese health institutions

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BACKGROUND: The scarcity of studies about the reality of the socio-labor phenomenon of presenteeism in Portugal leads us to develop an exploratory study with the aim of describing the reality found in everyday work. Associated with the study of this phenomenon, it is the objective of this work to describe the existing relations between the presentism and the behaviors of organizational citizenship, as well as to define the profile of the nurses in the public health organizations. **OBJECTIVE:** It is the objective of this study to obtain quality indicators about performance, productivity and commitment / organizational commitment. **METHODS:** In order to achieve the proposed objectives, a national survey will be carried out on all nurses who work in Portuguese health institutions. The data will be collected by filling out a form in digital format. Target Population: The population will be made up of all Portuguese nurses enrolled in the Nurses' Order (OE). The questionnaires will be provided through the OE, via a computer platform. The sample will coincide with the answers obtained within the defined period of time for the study. Type of sample: Random and consecutive. Sampling process: The sample will be derived from the nurses who work in health care services. Or those who accept to answer the questionnaires it will be sent by e-mail and filled out. 424 nurses participated in this study. **RESULTS:** The trend of results obtained is in line with higher levels of presentism in the age groups from 40 years of age. **CONCLUSIONS:** There is a tendency to be higher in nurses with previously diagnosed health problems.

Keywords: *Presenteeism, organizational commitment, organizational citizenship, productivity, performance*

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Falls in older persons living alone: development of an application solution to evaluate the risk profile

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BACKGROUND: Falls are internationally known as a critical event and usually reported and responsible for the mortality and morbidity, which implies significant economic and social costs^[1-3]. Falls may occur in multiple contexts, frequently at home^[5]. Living alone comprises a high risk of fall^[4]. **OBJECTIVES:** The main objective of this project, funding by the Fundação para Ciência e Tecnologia (FCT), is to develop an App to collect data and to calculate the risk of falling in older adults living alone. **METHODS:** To achieve this objective, five sequential and interdependent activities will be carried out by the Nursing College of University of Minho (ESE-UM), and two co-promoters (CCG and ESEP), in partnership with the City Council of Braga (Northern Portugal). The added value of this consortium and partnership comes from the complementarity of the multiple fields of knowledge, skills and responsibilities between the Academia, a research entity, and the applied development in the area of computer technologies and communication and a local official entity with social and politic responsibility regarding the implementation of preventive measures which promote its citizens health and well-being. The ESE-UM and the co-promoters researchers in collaboration with the experts panel will explore the state-of-the-art for the conception of the instrument measurement which will be the basis for the development of the App to be used to collect data and to calculate the risk of falling of older adults living alone (Activities 1 & 2). The co-promotor CCG will develop the App (Act. 3). The ESE-UM and ESEP researchers will participate in the pilot study, identifying the older adults who live alone in community-dwelling (Braga geographic area); they will also do the test and retest (n=300) of the App with the collaboration of four beneficiaries of grants and of a statistician. After they fulfil their goals at this phase, the CCG researchers will intervene by improving the App (Act. 4). **CONCLUSIONS:** Finally, will be write of the report and results dissemination.^[1-3] According to the projected demographic tendencies and the aging index for the Northern Portugal (146,1% in 2016 and 178,6% in 2020), the development of a new approach through an App based on information technologies to prevent falls in older adults living alone, will promote social and clinic benefits, and will have a positive impact in preventive health, by diminishing the number of falls, the morbidity and the early mortality.

Keywords: *older adults living alone; falls; prevention; application*

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Perception of Functionality Scale based on ICF and related with the DASH

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BACKGROUND: Chronic patients usually appear at the pool with a prescription for long term practice of aquatic therapy (AT). For this reason, initial assessment of these patients is crucial to meet expectations and reach functional goals specifically in the case of upper limb disability^[1,2]. Functional information can improve the interprofessional collaboration and may facilitate interdisciplinary disease treatment outcomes, which are very important to report to the patient's doctor and for patient own understanding of functioning state^[3]. **OBJECTIVES:** The aim of this study was to develop a functional measure to identify the patient's main health problems, and expectations. It should allow prediction of success of the AT programs in older adults. **METHODS:** A cohort study for validation of the Perception Functionality Scale (PFS) related with ICF was developed. The 96 AT participants completed a self-report concerning general problems, expectations, satisfaction with AT, the arm, shoulder and hand disability (DASH scale) and the functional perception scale in land and water based on the ICF. Ethical procedures were followed. **RESULTS:** The factor analysis was analyzed (KMO = 0.859; Bartlett's sphericity $p < 0.001$). Two factors were extracted, explaining 72.4% of variance, the FPS_1 (basic motor control) and the FPS_2 (advanced motor control). Cronbach's alpha was 0.94. Convergent validity of FPS was confirmed through correlation analysis values between item and each factor. Interclass correlation coefficient between land and water FPS return high values (ICC > 0.43 and <0.89). **CONCLUSIONS:** Several studies confirmed the importance of AT programs for improvement of self-efficacy in daily life and in functional outcomes of older adults with osteoarthritis^[4]. Often researchers studied and developed tools to predict important factors to help clinicians to prevent the risks for healthy aging^[5]. The current study developed a tool for health professionals to use as patients self-report. The Perception Functionality Scale (PFS) developed based on ICF can report the motor control level and related with predictive factors: High Blood Pressure, more than four medications, fear of falls, years of AT and expectations. In conclusion, this information suggests being helpful for the physiotherapist to make the decision on planning special needs and adjustments to the aquatic therapy program adapt to patients and get a well-succeeded intervention.

Keywords: *Aquatic therapy, functionality, expectations, predictive.*

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Health and Prevention in General and Family Medicine Consultation

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BACKGROUND: General and Family Medicine (FGM) is an academic and scientific discipline, with its own educational content, research, evidence base and clinical activity. The FGM specialist is in a unique position to provide Preventive Medicine care at different levels, ranging from primary prevention to quaternary prevention. **OBJECTIVE:** Characterize the principles of preventive medicine and some aspects related to the consultation of FGM: screening at the level of individual and family life cycles and at an oncological level. **METHODS:** Systematic review of the literature in the MEDLINE and PubMed databases. Keywords: "Health Promotion", "Health Education", "Preventive medicine", "Prevention", "Evidence Based Medicine". **RESULTS:** The analysis of the articles included in the study allowed to identify several relevant themes, considering recommendations from scientifically valid organizations and with scientific evidence categorized into 5 levels of evidence and the degrees staggered into 5 types^[1]. In the pre-conception consultation, folic acid in the prevention of neural tube defects (level I grade A); alcohol and / or drug use (level III grade B) and rubella and toxoplasmosis (grade B) serologies. In the Child and Youth Health consultation, global health examinations must be carried out in life stages coinciding with school changes. They serve for tracking and troubleshooting. In primary prevention, vaccination is an important task at all stages of life, with a national vaccination plan specifically for children and adults. In individuals with 18 years of age or older, the risk for depression should be assessed routinely, investigating the family and / or social conditions of the users, and initiating effective treatment and follow-up (grade B)^[2]. With regard to quaternary prevention, the treatment of arterial hypertension requires, especially in the elderly, the surveillance for risks of falls due to hypotension, renal dysfunction and hydroelectrolytic alterations^[3]. The scientific evidence is consensual about the usefulness of cancer screening programs in three areas: the cervix, breast, and colon and its institution leads to a decrease in mortality rates^[4]. **CONCLUSIONS:** In the programmed and non-programmed daily consultations, the different types of preventive care (nutrition education, vaccination, use of different life-long screening, relapse prevention) should be implemented according to the clinical situation of each individual.

Keywords: *Health Promotion, Health Education, Preventive medicine, Prevention, Evidence Based Medicine*

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Family doctors in the prevention of sports injuries

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Abstract

BACKGROUND: General and Family Physicians (FGM) play a key role in advising good sports practice. Their training in Sports Medicine is an asset, given that currently many people engage in physical activities, indoor or outdoor, without guidance. **OBJECTIVE:** Characterize the principles of sports medicine and some aspects related to the consultation of FGM: exercise prescription and sports medical examination. **METHODS:** Systematic review of the literature in the MEDLINE and PubMed databases. Keywords: Health Education; Injury prevention; Sports Medicine. **RESULTS:** It was conducted a selection of 28 articles with guidelines and consensus that emphasize the benefits of regular physical exercise as unquestionable. Patients with diabetes, hypertension, hypercholesterolemia or obesity may benefit of great health improvement if practicing sports, as long as that is adjusted to their physical condition and illness^[1]. In order to ensure that an activity brings the greatest possible benefit to applicants for their practice, a medical evaluation must be carried out as rigorously as possible so that the inherent risks in performing physical exercise can be minimized^[2]. The medical examination should cover several points: personal and family history is relevant for detection of situations that contraindicate the practice of sports. Biometrics allow to verify the evolution of weight, body mass index and, eventually, to approach the problem of obesity. The objective examination shall include: the semiological examination gives us an overall idea of morphology. The ophthalmological and otorhinolaryngological examination allows the detection of situations that are potentially correctable. In the stomatological examination, the systematic investigation of dental caries is mandatory in order to prevent repetitive musculo-tendinous lesions. In the abdomen, highlight for organomegaly (hepato and / or splenomegaly that always require investigation). In the genito-urinary examination, the composition of the urine and the search for varicoceles (and hernias). Finally, the cardio-respiratory examination has the highest importance (palpation, cardiac and pulmonary auscultation and blood pressure measurement)^[3]. Nonetheless, there is some consensus on follow-up: ordering an electrocardiogram every year, a urinalysis, and a chest X-ray every three years^[4]. **CONCLUSIONS:** The major difficulty in providing this healthcare is related to a general population ignorance that the sports medical evaluation is

essential in preventing injuries and not exclusively intended for professional or high-performance athletes.

Keywords: *Health Education; Injury prevention; Sports Medicine; Preventive medicine*

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Evidence for the efficacy of “natural” or “alternative” hair loss shampoos in androgenetic alopecia: a review

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BACKGROUND: Androgenetic alopecia (AGA) is the most common form of hair loss. Its frequency increases with age and affects both sexes. Hair loss impacts on social interactions and psycho-emotional well-being. AGA is a common problem in primary health care and patients often request over-the-counter treatment. Current recommendations are limited and moderately effective and include the use of topical minoxidil and oral finasteride^[1]. **OBJECTIVE:** The aim of this review is to assess efficacy of alternative hair loss shampoos (HLS) for AGA. **METHODS:** After compiling a list of commercial HLS and listing its active substances (AS), we did a systematic research for their evidence. We excluded shampoos containing minoxidil, dutasteride or finasteride. We completed the research using Cochrane Central Register of Controlled Trials, Medline and EMBASE using the MeSH terms: “androgenetic alopecia” AND “AS name”, to assess the efficacy of each AS. We selected all study designs in English and Portuguese. **RESULTS:** We listed 28 commercial HLS, with a total of 69 AS. We excluded 17 AS due to no scientific nomenclature correspondence or overlapping designations. We found no studies regarding 27 AS, 22 AS showed promising results in animal testing or laboratory research and only 5 substances showed positive results in human trials. Zinc and Iron were proven to be effective but only as oral supplementation and melatonin, caffeine and laminaria japonica had positive results in topical use. **CONCLUSIONS:** Although natural remedies seem promising in treating androgenetic alopecia^[2-5], more research is necessary. Additionally, better models for drug testing have to be developed in human trials. There is not enough scientific evidence to recommend treatment with alternative AS.

Keywords: *hair loss, alopecia, alternative treatments*

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Postural Education - Musculoskeletal Back Pain Prevention Project in Adolescents

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BACKGROUND: Posture is defined as the position adopted by the human being. Muscle pain, weakness, poor coordination, joint pain can be caused by improper posture^[1-3]. **OBJECTIVE:** The aim of the present study is to promote cognitive motor knowledge through postural education and prevention of musculoskeletal back pain in adolescents in the secondary school of public school in Viana Municipality, Luanda Province, Angola. **METHODS:** This work aims to prevent pain and functional changes in the spine of adolescents with the participation and support of teachers, carers and parents. The methodology developed in the study will be descriptive of intervention action with adolescents, with a sample of 100 students in a random selection for convenience, from the 7th, 8th, 9th grade of general education (secondary and 1st cycle), We will have about 40 male and 60 female students, through the application of an evaluation questionnaire and after their analysis, will be given a lecture on postural education in the school context. **RESULTS:** Let's split our sample into three groups of both genders, relative to our goals. Our forecast is to identify 80% of the most frequent causes of postural changes, 40% of adolescents with spinal pain and 90% of reach with preventive measures to prevent inappropriate postures during the 2 months of study. **CONCLUSION:** Our action will be to evaluate Physical Therapy performance through cognitive motor learning of new postural patterns in the school context, changing inappropriate postures, we are thus promoting appropriate postures. Preventing, treating and offering quality of life to adolescents, making sure that with this work we will contribute with the academic communities, professionals, associations, Non Governmental Organizations (NGOs), organized civil society, in the elaboration of projects and programs to improve this community.

Keywords: *Postural Education, Pain Prevention, Back pain*

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The place of Environmental Health in the World - from learning to practice

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BACKGROUND: Human health and well-being are closely linked to environmental quality. The protection of public health is the primary obligation of any state, and the construction of an Environmental Health strategy is part of this concept. Environmental Health professionals must demonstrate leadership towards a sustainable way of life, skills in occupational health and public health, environmental education, disease prevention, among others. Consequently, the focus on teaching Environmental Health and the training of professionals in this area is extremely important. **OBJECTIVES:** The aim of this study is to understand the different areas that constitute Environmental Health and also the main differences that exist in the teaching of this science, from country to country^[1,2]. It is also the objective of this research to provide an organized data collection for all students and professionals of Environmental Health, in order to consult in which countries it is possible to find this area of intervention. **METHODS:** The type of study is Observational, Descriptive and Exploratory (Level I). The target population under study corresponds to 79 academic entities that provide studies in the field of Environmental Health and 43 organizations of Environmental Health professionals. The type of sampling is non-probabilistic - geometric propagation. Direct contacts were established with professional and academic members in the area of Environmental Health. **RESULTS:** In total, data were collected from 62 countries with relevance to the research. Thus, 79 academic entities and 46 associations of professionals related to Environmental Health or areas analogous to this science were gathered. **CONCLUSIONS:** The present study will contribute to the professionals and students of Environmental Health throughout the world to communicate among themselves and to know in which countries they can practice their profession or in which faculties it is possible to prolong the study in this area. It is also possible, through the database created, to provide Environmental Health students with the main characteristics of the courses in the different countries, what are the requirements for studying in a particular university and the professional advantages they may have in the future. It will be equally important for all professionals who wish to work in other countries, to establish new contacts and to share information about the area through the organizations found. This essay confirms that Environmental Health encompasses several fields of action and study and is increasingly globalized, so it is possible to find several differences from country to country, in terms of the profession itself and also in education^[3]. The partnership between UNEP and WHO at the beginning of 2018, mentioned above, is a milestone with great impact in the history of Environmental Health, showing the strength that this area has been gaining and the importance of its field of action^[4]. More studies are needed in this area in order to promote information exchange, create new contacts and allow more efficient mobility between countries, for professionals and students of Environmental Health.

Keywords: *Environmental health; teaching; learning; world*

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Assessment of the quality of life of the young/adult population with intellectual disability: Proposal of intervention in a Centre for Occupational Activities

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BACKGROUND: the intellectual disability, according to DSM-5, is a disorder that begins during the developmental period and includes deficits of intellectual and adaptive functioning in the conceptual, social and practical domains^[1]. Thanks to advances in health, new technologies of diagnosis and medication, the average of life expectancy has increased, and in this population, it is no exception, which means that there is a need for an individualized intervention, guaranteeing whenever possible their quality of life. **OBJECTIVES:** To evaluate the quality of life of youngster/adults with intellectual disability in a centre of occupational activities. **METHODS:** To evaluate the quality of life, it was used the Personal Results Scale (EPR)^[2], which measures the quality of life based on specific indicators associated to eight central domains, divided by three factors, independence, social participation and the well-being factor. The issues are addressed to the person with the intellectual disability and the family/caregiver and/or professionals. **RESULTS:** More positive results have been found in people with intellectual disability in relation to their family members and professionals. **CONCLUSIONS:** The results are in agreement with those found in some studies^[3]. Individualized intervention programs are needed in order to contribute to their quality of life.

Keywords: *disturbance of intellectual development, quality of life, independence, social participation, well-being.*

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Osteoporosis: the reality in a Family Health Unit

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BACKGROUND: Osteoporosis (OP) is characterized by a decrease in bone mass and deterioration of its microarchitecture, leading to bone fragility and greater risk of fracture. It is an increasingly frequent pathology due to the aging of the population^[1]. It is estimated that its prevalence in Portugal is 10,2%^[2]. Oral bisphosphonates, first line treatment, accumulate in the bone during several years, reason why its antiresorptive effect persists after discontinuation. Prolonged use of bisphosphonates has been associated with an increased risk of mandibular osteonecrosis and atypical fractures^[3]. The most recent national recommendations consider a temporary interruption of bisphosphonates when there is simultaneous adherence to treatment for a prolonged period, absence of fragility fractures and femoral bone mineral density T score > -2,5 [1]. **OBJECTIVE:** To study the prevalence of OP in a Family Health Unit (FHU) and to characterize the population with OP; verify the adequacy of the duration of treatment with bisphosphonates. **METHODS:** Observational, descriptive and cross-sectional study. Population: registered patients in a FHU. Inclusion criteria: patients diagnosed with OP (pathology coded in the list of active problems). Variables: sex, age, type and duration of anti-osteoporotic medication. Data collected by the authors from the computerized clinical process and treated with descriptive statistics. **RESULTS:** It was found that 2,7% of the patients (n=406) present OP coded in the list of active problems, of which 393 (96,8%) were female. The average age is 71,9 years. Antiresorptive medication is prescribed in 110 (27,1%) of these patients. Most are under oral bisphosphonates: 85 (77,3%) with alendronic acid and 18 (16,4%) with ibandronic acid. Of the remaining patients, 5 (4,5%) are taking zoledronic acid and 2 (1,8%) teriparatide. Among patients under bisphosphonates (n=108), 36 (33,3%) are using oral therapy for more than 5 years and 3 (2,8%) using intravenous therapy for more than 3 years, without a reevaluation of the need to continue treatment or the possibility of its interruption. **CONCLUSIONS:** There was a lower prevalence of OP compared to the national reality. This difference may be related to an underdiagnosis or lack of registration in the clinical process. Most patients are under first-line treatment. A significant proportion may have criteria for temporary discontinuation of bisphosphonate treatment. It is fundamental to promote the acquisition of technical and scientific skills on this problem, to act effectively in the prevention of its morbidity and mortality and reduction of adverse effects of treatment.

Keywords: *Osteoporosis, bisphosphonates, temporary interruption of treatment*

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Polypharmacy in Elderly Population with Type 2 Diabetes mellitus: Clinical Profile

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BACKGROUND: With life expectancy increase, the diagnosis of a chronic disease is a reality^[1,2]. Diabetes mellitus is a prevalent disease among the older people, and is listed as one of the leading of admissions and readmissions^[3]. Older people with Diabetes represent a challenge to the nurses, in terms of effective coordination and management in multiple areas. After the diagnosis, they are confronted with a medication regimen, often complex^[3,4]. Polypharmacy is a reality and leads to unnecessary disease progression and complications, reduce functional abilities, increase hospitalizations, reduce the quality of life, increase health costs and even death^[4]. **OBJECTIVE:** to determine the medication regimen complexity of aged person with Type 2 Diabetes *mellitus*. **METHODS:** Observational, cross-sectional and descriptive study was performed, with people aged 65 years or above, living in the community and registered at one Health Center in Algarve. Three hundred and ninety five patients were interview in terms of their medication. For the data collection it was used a socio-demographic questionnaire, a clinical questionnaire and the Medication Regimen Complexity Questionnaire (MRCI). **RESULTS:** The average age of the sample was 75 years, with a standard deviation of 6.75, a minimum of 65 and a maximum of 93 years, 52.91% were female and 47.09% were male. It was possible to verify that the sample presents an MRCI with an average of 15.63 and a total of prescribed drugs with an average of 5.4, which represents a high value. It was still possible to verify that 20.76% of the sample, have a high degree of medication complexity, posing a problem for the health of the older people with chronic disease. With regard to glycosylated hemoglobin (HbA1C), 19.75% of the sample presents a value higher than 8%, and 5.32% higher than 9.5%. The medium value of the HbA1C was 7.09%, higher than the desired, with a minimum of 5.3% and a maximum of 12.4%. **CONCLUSIONS:** The polypharmacy (use of 5 to 9 drugs per day) and excessive polypharmacy (use of 10 or more drugs per day) is a real problem with negative impact, and is potentially fatal. High numbers of medications prescribed are nowadays more common. The literature shows that the errors associated with the medication are related with the number of drugs taken per day.

Keywords: *Nursing, Aged, Medication Adherence, Diabetes Mellitus, Medication Errors*

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Influência De Um Programa De Exercício Físico na Sexualidade de mulheres com cancro da mama

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INTRODUÇÃO: O cancro da mama é o tipo de cancro mais frequente na mulher em todo o mundo. É considerado como uma das doenças com maior impacto na sociedade atual, não só por ser um dos cancros mais frequentes como também porque atinge e agride um órgão tão feminino, cheio de simbolismos, na feminilidade e na maternidade. A qualidade de vida destas mulheres diminuiu significativamente, durante e após os tratamentos. A doença oncológica e os tratamentos a ela associados podem provocar alterações ao nível da aparência física e da imagem corporal do doente tem de si. Existem doentes que logo após o relato oficial do diagnóstico começam a olhar o seu corpo de uma forma diferente, por vezes, dominados pela sensação de falta de controlo sobre o diagnóstico e curso da doença, deixando de reconhecer o corpo como seu, o que implica consequências significativas na expressão da sua sexualidade. Perante o sentimento de perda da feminilidade, a doente pode sentir-se menos atraente, menos competente e mais incompleta, ou até mesmo antecipar a rejeição por parte do parceiro, o que pode conduzir ao afastamento e, ou rejeição da intimidade levando assim à alteração do normal funcionamento sexual e do relacionamento com o seu companheiro de vida^[1,2].

OBJETIVOS: Avaliar a influência de um programa de exercício físico na sexualidade de mulheres com cancro de mama.

MÉTODOS: Programa de exercício físico prescrito e direcionado para mulher que sofrerem de cancro da mama. Com a duração de 12 semanas e frequência semanal de 2 vezes. A amostra é composta por 12 mulheres diagnosticadas com cancro da mama. Todas elas seguidas e encaminhadas pelo Centro de Oncologia do Centro Hospitalar de Trás-os-Montes e Alto Douro e consideradas clinicamente estáveis e aptas para a realização de exercício físico. Para avaliar a sexualidade será utilizado o *Supplementary Questionnaire Breast Cancer Module –QLQ-BR23*^[3]. **RESULTADOS:** O presente estudo encontra-se a decorrer actualmente. **CONCLUSÕES:** São expectáveis efeitos positivos do exercício físico na variável em análise. No entanto, pelo fato do presente estudo estar a decorrer, os resultados ainda estão a ser analisados.

Keywords: *Exercício físico, Cancro da mama, Sexualidade, Qualidade de vida;*

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A sedação paliativa como resposta ativa no controlo de sintomas refratários e no alívio do sofrimento do doente com cancro: RSL

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INTRODUÇÃO: A mortalidade, devida ao cancro, em Portugal tem aumentado, evoluindo, na grande maioria das vezes, para uma situação de doença terminal e morte. A maioria dos doentes com cancro apresentam vários sintomas causadores de sofrimento intenso^[1]. O controlo de sintomas constitui uma prioridade para o bem-estar no final de vida. Quando os sintomas não são tratados adequadamente, geram mais angústia tanto ao doente como à sua família, pelo que a medicina tem implementado, nalguns destes casos, a sedação paliativa (SP)^[1]. A SP pode definir-se como a redução intencional da consciência de um doente terminal, através da administração intencional de fármacos, com o objetivo de aliviar um ou mais sintomas refratários^[1,2,3]. **OBJETIVO:** Analisar de que forma a sedação paliativa constitui um meio terapêutico eficaz na assistência ao doente em estágio avançado de doença oncológica e em fase final de vida. **MÉTODOS:** A pesquisa foi realizada em cinco bases de dados científicas, de acordo com os critérios de seleção: publicados entre 2005 e 2015; nos idiomas português, inglês e espanhol; acesso gratuito; texto integral; doentes oncológicos com mais de 18 anos de idade. Utilizaram-se os descritores “doente terminal”, “cuidados paliativos”, “sedação profunda”, “sintomas” de acordo com os descritores em ciências da saúde DeCS e MeSH. De um total de 742 artigos iniciais e após aplicação dos critérios de resultaram 4 artigos finais que foram submetidos a um processo de avaliação de qualidade tendo sido todos incluídos e que constituem a base da presente RIL. **RESULTADOS:** Os 4 estudos incluídos nesta revisão seguem a ideologia de que a sedação paliativa constitui um meio terapêutico eficaz na assistência ao doente em fase terminal. Contudo, é importante definir critérios explícitos, bem como as condições do uso da sedação no doente terminal, de forma a contribuir para uma boa prática clínica. Por enquanto, é essencial que haja debates sobre o assunto e que os profissionais de saúde estejam conscientes das normas e dos pontos de partida para poderem oferecer ao doente, frente ao momento do fim da vida, condutas adequadas que possam aliviar a sua dor e sofrimento. **CONCLUSÕES:** Os estudos selecionados indicam que existe benefício em implementar a SP no controlo de sintomas refratários e no alívio do sofrimento. Porém, esta é ainda vista, de forma controversa, por diversos autores e profissionais de saúde, devido ao facto de a considerarem um recurso terapêutico de uso extremo.

Keywords: *sedação paliativa, cancro*

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Eficácia das intervenções de enfermagem na recuperação pós-operatória de mulheres com cancro da mama: revisão integrativa da literatura

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INTRODUÇÃO: A cirurgia apresenta um papel benéfico no controlo do cancro da mama, com efeitos benéficos efetivos na sobrevida da doente. Este tratamento pode ser implementado como cirurgia conservadora, ou como mastectomia total/simples ou radical^[1]. No entanto e durante o período pós-operatório, podem surgir complicações que afetam a qualidade de vida da mulher, o seu bem-estar e a sua funcionalidade². A mulher deverá, portanto, receber informação a respeito de cuidados após cirurgia, para evitar complicações, nomeadamente cuidados com o braço homolateral e exercícios que recuperem a capacidade funcional^[2,3]. **OBJETIVO:** Analisar programas de intervenção de enfermagem e a sua eficácia na melhoria da qualidade de vida e na diminuição das complicações pós-operatórias em mulheres com cancro da mama, submetidas a tratamento cirúrgico. **METODOLOGIA:** Trata-se de uma revisão integrativa da literatura (RIL), tendo sido realizada pesquisa nas bases de dados RCAAP, ERIC, BVS, *Pubmed* e B-On, de acordo com os critérios de inclusão: estudos escritos em português e inglês; publicados entre 2012 e 2016; cuja versão integral estivesse disponível e gratuitos. Foram utilizadas as seguintes palavras-chave, com base nos descritores DeCS e MeSH, “cancro da mama”, “cirurgia”, “cuidados de enfermagem”, “educação em saúde”, “qualidade de vida” e “complicações pós-operatórias”. Dum total de 361 estudos iniciais, após a aplicação dos critérios definidos resultaram 4 artigos finais. Estes foram submetidos a um processo de avaliação de qualidade tendo sido todos incluídos constituindo a amostra final desta revisão. **RESULTADOS:** Os quatro estudos incluídos nesta RIL confirmam a eficácia das intervenções/programas de intervenção de enfermagem na recuperação pós-operatória de mulheres com cancro da mama submetidas a cirurgia. Os resultados de 3 estudos^[1,3,5] revelaram serem eficazes na promoção de competências de autogestão e na melhoria da qualidade de vida com a implementação de um plano terapêutico holístico e individualizado de enfermagem ao longo de todo o processo, sendo que os enfermeiros desempenham um papel fundamental no suporte psicossocial a estas mulheres, uma vez que são fonte de informação sobre a sua patologia, tratamento e cuidados que vão ser prestados, mas também são elementos que as acompanham desde o diagnóstico até a alta clínica. O quarto estudo⁴ revelou ser eficaz na diminuição das complicações pós-operatórias, sendo que a implementação dos exercícios terapêuticos no período pós-operatório, de forma organizada e

sistematizada, reduz a intensidade da dor e melhora o movimento do ombro. **CONCLUSÕES:** Um programa de reabilitação juntamente com um plano terapêutico promove uma melhor prestação de cuidados de enfermagem e reduz ansiedade sentida pela mulher. Favorece, também, a continuidade de cuidados após a alta clínica. A dor e a redução do movimento da articulação do ombro são duas das complicações mais comuns no período pós-operatório, como tal seria benéfico implementar exercícios terapêuticos no período pós-operatório para minimizar a dor e melhorar a funcionalidade do ombro.

Keywords: *enfermagem, cancro de mama*

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Disfunções Músculo-Esqueléticas e Reflexos Viscerais: Que Relação?

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BACKGROUND: Musculoskeletal disorders present a high impact worldwide and they are expected to grow in the twenty-first century, being the most common cause of long-term severe pain, physical disability and long-term absenteeism^[1]. Although its etiology is not yet properly clarified, viscerosomatic convergence seems to have an important part in its development. **OBJECTIVE:** Analyze the evidence about visceral reflexes on the musculoskeletal system. **METHODS:** an integrative review was performed in the PubMed and EBSCO databases, with the Boolean phrase: “convergence” AND “somato visceral” OR “viscerosomatic”, with the time interval between 2008 and 2018. We used as inclusion criteria: in Portuguese, English or Spanish, full texts and describing the physiology of the visceral convergence on the musculoskeletal system. We excluded articles which addressed neoplasias and degenerative diseases. For material organization, quotes and bibliography, we used the Mendley software. **RESULTS:** We obtained 103 articles, having selected 20 articles after removing repeated articles and applying the inclusion and exclusion criteria: experimental studies (on

humans and animals), observational studies, case studies and review articles. The multiple symptoms in patients with musculoskeletal disorders point to the involvement of more than one corporal system in its etiology. One of the factors seems to be related with the convergence of visceral stimuli at the medullary level promoting muscular reflexes, triggering referred pain or neurogenic inflammation^[2]. Another actor is the autonomous nervous system, through which the harmful visceral stimuli converge, inducing the central sensibilization when they are kept for long periods, originating referred pain (of parasympathetic origin). These impulses also converge reflexively at a cutaneous and visceral level^[5]. These neurological courses present a bidirectional trend between the viscera and the convergence areas^[3,4]. **CONCLUSIONS:** Part of the multiple symptoms reported by patients with musculoskeletal disorders seem to be related with the central sensibilization processes, reflex pain and neurogenic inflammation, arising from the visceral convergence at the somatic, muscular, cutaneous and other viscera levels. The development of future studies in the better understanding of this phenomenon may contribute for the better understanding of the musculoskeletal disorders and the development of future clinical interventions.

Keywords: “*musculoskeletal disorders*”, *pain*, “*visceral reflexes*”, *viscerosomatic reflexes*

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Metástases cutâneas exuberantes de cancro do Pulmão no fumador – A propósito de um Caso Clínico
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INTRODUÇÃO: A neoplasia do pulmão é uma das neoplasias mais frequentes e com mortalidade mais elevada. O fumo do tabaco é a causa mais comum de neoplasia do pulmão, sendo responsável por cerca de 90% dos casos. O risco de neoplasia do pulmão aumenta com a carga tabágica e duração da adição. **CASO CLÍNICO:** Homem de 51 anos, autónomo, fumador de 70UMA. Recorre ao serviço de urgência por toracalgia direita com cerca de 3 meses de evolução, de agravamento progressivo, sem alívio com paracetamol e tapentadol. Perda ponderal (5kg em 3meses) e astenia, sem outros sintomas constitucionais ou respiratórios. Sem antecedentes pessoais ou familiares relevantes.

MÉTODOS: Realizou RX-tórax que evidenciou massa pulmonar de 4cm de limites bem definidos nodulares no ápex do pulmão direito, pelo que foi internado para estudo. Realizou TC-Toracoabdominal com volumosa massa no segmento apical do lobo superior direito de 8,7cm, apresentando agressividade local e extensa infiltração da parede posterior adjacente, destruindo arcos costais posteriores da 3ª e 4ª costelas e com extensão para a musculatura parietal, adenopatia hilar direita; análises com elevação do NSE. VBF sem lesões endobrônquicas; biópsia transtorácica; EFR com obstrução das pequenas vias aéreas com resposta a broncodilatação e DLCO68%. Iniciou morfina e programa de desabitação tabágica com terapêutica de substituição nicotínica transdérmica. Com auxílio da histologia, conclui tratar-se de um carcinoma pulmonar não pequenas células IIB T4N1Mx com diferenciação pavimentosa e neuroendócrina focal, proposto para QT e RT, que iniciou. Passados 5 meses, o doente retorna ao serviço de urgência por apresentar dor não controlada e volumosa lesão dorsal esquerda compatível com metástase cutânea. Acabou por falecer 10 dias depois. **CONCLUSÕES:** Cerca de 1-12% dos doentes com neoplasia do pulmão desenvolvem metástases cutâneas, sendo esta neoplasia responsável pela maioria das metástases cutâneas no homem (cerca de 24%). Normalmente tratam-se de nódulos firmes e eritematosos de aparecimento súbito, com localização frequente nas paredes anterior e posterior do tórax, abdómen e escalpe. As metástases cutâneas normalmente desenvolvem-se após o diagnóstico do tumor primário mas podem ser a primeira manifestação da doença. Deve manter-se um elevado grau de suspeição, especialmente se houver hábitos tabágicos presentes.

Keywords: *metástases, pele, cancro, pulmão, tabaco*

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Thermal establishments and Legionella

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BACKGROUND: The natural mineral water can undergo, from the origin to the point of use, several accidental modifications, detrimental of their physical-chemical or microbiological qualities. The *Legionella* finds in thermal establishments ideal conditions for its propagation and development of disease^[1]. **OBJECTIVES:** Identify the main risk factors for the development of *Legionella* in thermal establishments. What are the main measures to minimize risks? **METHODS:** Review of literature using PubMed and website of the Directorate-General for Health, with selection of publications after 2010, in Portuguese and English languages. **RESULTS:** *Legionella* is an environmental bacterium that can colonize artificial water supply systems, building networks of hot and cold water, ventilation systems, heating and air conditioning of buildings whenever exist

conditions favorable to its multiplication. *Legionella* can be harmful to health, namely *L. pneumophila serogroup 1*, responsible for most cases of Legionnaires' disease. The disease affects especially adults, between the 40 and 70 years, with greater incidence in men. Smokers, people with chronic respiratory problems, kidney disease and immunocompromised individuals are more likely to get this disease. There are certain factors that favor the development of the bacteria, namely: water temperature between 20°C and 45°C, being the optimal temperature between 35°C and 45°C; pH values between 5 and 8; relative humidity of more than 60%; areas with reduced circulation of water; presence of other organisms; existence of a biofilm on surfaces in contact with water; corrosion or fouling processes; use of porous materials and silicone derivatives in building networks, which potentiate bacterial growth. The main systems and equipment associated with the development of *Legionella* bacteria are cooling systems, hot water and cold water building networks; water systems for recreational or therapeutic use (thermal installations); equipment used in respiratory therapy (nebulizers and humidifiers for assisted ventilation)^[1,2,3].

Discussion: To minimize the proliferation of *Legionella pneumophila* and the associated risk of Legionnaires' disease in thermal baths, preventive and physical-chemical and microbiological control measures should be adopted to promote and maintain the surface of water systems.

CONCLUSION: Like the Control Program of *Legionella* issued annually by the Directorate-General of Health for the concessionaires, there should also be a Surveillance Program established by Public Health Units based on multidisciplinary teamwork and prevention.

Keywords: *Thermal establishments, Legionella, Legionnaires' disease*

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Benefits of regular waterbike® physical activity

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BACKGROUND: The practice of waterbike® (WB) is a physical activity that consists of pedaling in water in an individual cabin, during 30 minutes (session), under the effect of the pressure and movement of water jets, being a recent and innovative practice. Pedaling on a water bike WB is a form of physical activity (hydrotherapy / water aerobics), which is part of

the world of aesthetics and global well-being, not only in clinical rehabilitation, but also since the 90's, with surprising benefits muscular level, venous and lymphatic circulation, as well as in the reduction of cutaneous cellulitis and the sensation of tired legs^[1]. **OBJECTIVES:** to evaluate the effect of regular physical activity on WB in the reduction of tired leg sensation, body mass index, cutaneous cellulitis and perception of overall well-being in its users. **METHODS:** quantitative study, exploratory-descriptive and longitudinal in nature, with a convenience sample. Ten WB women practitioners participated in a regular program of 30-minute sessions, two or three times a week, for six weeks and a total of 12 sessions, on a water bike installed in individual space, with a water temperature between 26 ° and 28 ° C, ozonated and equipped with sixteen underwater water jets. The data were collected by applying a form in two moments: the first, before starting the program (PWB) and the second after six weeks of realization of the PWB. **RESULTS:** women have a mean age of 46.5 years and most of them work as teachers. All participants had a reduction effect on the abdominal, hip and thigh perimeters. Thus, it appears that the regular practice of WB water cycling was effective in reducing the perimeter of these body regions. These data corroborate those obtained by Blanchemaison et al.^[1], in which 100% of the individuals reached a reducing effect in at least one of the mentioned anthropometric measures. The mean of the most severe loss was at the hip level, a finding corroborated by Blanchemaison et al.^[1]. At the level of the evaluation of the importance attributed to the PCB in the improvement of the perception of tired legs sensation, edema sensation and cutaneous cellulitis in the lower limbs, very positive results of improvement were obtained in all the participants, being that regarding the perception of cellulite, was less significant. Physical activity is increasingly a mandatory clinical prescription, which when performed regularly results in benefits at all levels^[2]. **CONCLUSION:** a regular WB water bike program brings benefits over the perceived well-being of tired legs, edema and cutaneous cellulitis. It was also demonstrated that the program had reductive effects on the abdominal, thigh and hip perimeters, with statistically significant changes in all evaluated items, except for body mass index (BMI).

Keywords: *physical activity, cellulite, wellness*

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Relationship between Health-related quality of life and risk behaviour in a group of adolescents

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BACKGROUND: Health-Related Quality of Life (HRQoL) is a very relevant indicator in health promotion, allowing the identification of risk groups^[1], which are more likely to present

vulnerability factors for risk-taking behaviour and self-injury, such as instability in family relationships, abusive relationships, bullying, low self-esteem, and emotional and behavioural problems^[2,3]. **OBJECTIVES:** The aim of this study is to explore the relationship between HRQoL and risk-taking behaviour and self-injury in adolescents. **METHODS:** The convenience sample consisted of 30 subjects (13 females, 17 males), aged between 12 and 18 years ($M = 14.1$, $SD = 1.73$), who attended the 7th and 12th grades. The subjects of the sample were assessed with the Portuguese versions of KIDSCREEN-52^[1] and the Risk-taking and Self-harm Inventory for Adolescents (RTSHIA)^[4]. Spearman's correlation was used to explore the relationship between HRQoL and risk-taking behaviours and self-injury. **RESULTS:** Negative correlations were found between the Risk-taking Behaviour dimension of RTSHIA and the KIDSCREEN-52's subscales: School Environment and Learning ($\rho = -.537$, $p = .002$) and Bullying ($\rho = -.483$, $p = .007$). It was also verified the existence of negative correlations between the self-injury dimension of RTSHIA and the KIDSCREEN's subscales: Feelings ($\rho = .524$, $p = .003$); General Mood ($\rho = -.619$, $p < .001$); About yourself ($\rho = -.641$, $p < .001$); Family and Home Life ($\rho = -.687$, $p < .001$); Friends ($\rho = -.596$, $p = .001$); School and Learning ($\rho = -.549$, $p = .002$) and Bullying ($\rho = -.57$, $p = .001$). **CONCLUSIONS:** Despite the methodological limitations of the study, namely the small size of the sample, the results indicate a relationship between HRQoL - especially in the subscales that refer to family and friends, self-perception and self-esteem, general mood, emotions and feelings - and risk-taking behaviour and self-injury.

Keywords: *HRQoL, risk-taking behaviour, self-injury, adolescence*

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Prevalência de lesões músculo-esqueléticas em trabalhadores de instituições de apoio a idosos

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INTRODUÇÃO: As Lesões músculo-esqueléticas relacionadas com o trabalho (LMERT) são um importante problema entre os trabalhadores de instituições de apoio a idosos, devido à exposição elevada e continuada a esforços físicos, estando estes muitas vezes relacionados com a escassez de meios técnicos, humanos e outros fatores^[1,2]. **OBJETIVOS:** Identificar a prevalência das LMERT em trabalhadores de instituições de

apoio a idosos e determinar correlações entre essas lesões e as variáveis sociodemográficas, clínicas e contextuais. **MÉTODOS:** Estudo quantitativo, com corte transversal, descritivo e analítico-correlacional. Os dados foram colhidos junto de 79 trabalhadoras de instituições de apoio a idosos – Lares de Terceira Idade (78.5%) e Centros de Dia (21.5%) do Concelho de Penalva do Castelo. O instrumento de recolha de dados utilizado foi um questionário que integrava questões de caracterização, sociodemográfica, caracterização do estado de saúde e da atividade de trabalho, e ainda o Questionário Nórdico Músculo-Esquelético^[3]. **RESULTADOS:** Trata-se de uma amostra constituída por 79 mulheres, com idades que oscilam entre os 21 e os 62 anos, com uma média de 41.27 anos \pm 11.096. Destas, 78.5% trabalham em Lares de Terceira Idade e 21.5% em Centro de Dia. Constatou-se que 40,3% das trabalhadoras dos Lares de Idosos apresenta LMERT, bem como 58,8% das que exercem em Centros de Dia. As funcionárias que apresentavam níveis mais elevados de LMERT eram as que trabalhavam em Centros de Dia, as que possuíam mais idade (punhos/mãos $p = 0.047$), com IMC mais elevado (ancas/coxas $p = 0.024$; joelhos $p = 0.035$; tornozelos/pés $p = 0.008$) as que praticam menos atividade física (joelhos $p = 0.007$; tornozelos/pés $p = 0.044$), as que possuíam mais patologias (pescoço $p = 0.024$; cotovelos $p = 0.002$; ancas/coxas $p = 0.001$; joelhos $p = 0.004$; tornozelos/pés $p = 0.010$) e tomavam mais medicação (ombros $p = 0.026$; ancas/coxas $p = 0.021$). **CONCLUSÕES:** Este estudo reforça a ideia de que as LMERT estão presentes num grupo significativo de trabalhadoras de instituições de apoio a idosos. Neste sentido, é imperativo que os enfermeiros, sobretudo os especialistas em reabilitação desenvolvam programas de exercícios ajustados, de modo a preparar os grupos musculares para as ações de trabalho desenvolvidas, aumentar a circulação sanguínea, melhorar a oxigenação cerebral e fomentar pausas no trabalho numa perspetiva preventiva.

Keywords: *Lesões músculo-esqueléticas; Trabalhadoras de instituições de apoio a idosos.*

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Binge Eating Scale and Emotional Regulation

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BACKGROUND: Current studies show up that the emotional suffering and the negative emotions unleash the increase of the food ingestion^[1] mainly in individuals with elevated rate of Body Mass Index (BMI) that can be explained, like an unconscious way of relieving the suffering and obtaining gratuity and pleasure^[1]. Individuals with Perturbations of the Food Behavior, specifically Binge Eating Scale (BES), present difficulties of emotional regulation, being characterized for the difficulty of distinguishing

and describing the emotions themselves^[2,3]. **OBJECTIVES:** To know the predominance of BES and the strategies of Emotional Regulation **METHODS:** It was carried out a quantitative and exploratory study. The data were gathered in clinical Nutrition practice in the North of Portugal. The Instrument of gathering of data was a sociodemographic and anthropometric questionnaire, Binge Eating Scale (BES)^[4] and the Difficulties in Emotion Regulation Scale (DERS)^[5] both translated and validated for the portuguese population. **RESULTS:** There were gathered 56 questionnaires of which 92,9 % pertaining to feminine type and 7,1 % to the masculine type, with ages understood between 18 and 58 years. By the BMI categorization is noted, that 32,1 % of the participants was presenting *normopeso* (normal weight); 35,7 % was presenting daily pre-obesity; 25,0 % was presenting obesity Degree I, 5,4 % was presenting Obesity Degree II and 1,8 % was presenting Obesity Degree III. Referent to BES, 69,6 % of the sample was presenting without BES, 17,9 % moderated BES and 12,5 % severe BES. In what concerns the descriptive analysis of the instrument DERS, whose variables if they express through a scale of Lickert (1=almost never to 5=almost always). The descriptive analysis reveals the next values for three different powers, respectively: *Lack of Emotional Conscience* (M=3,85; DP=1,25); *Lack of Emotional Clarity* (M=2,72; DP=1,50); continuously, *Difficulties in the Control of Impulses* (M=2,20; DP = 1,42); *Difficulties in Acting of Agreement with the Objectives* (M=2,55; DP = 1,41); *Not acceptance of the Emotional Answers* (x = 232; DP = 1,35); and finally, with the lowest frequency, the *Limited Access to Strategies of Regulation* (x=2,17; DP=1,38). **CONCLUSIONS:** The preliminary data of this study, show that the participants mostly feel a *Lack of Emotional Conscience* and difficulties in emotional management, as well as elevated obesity incidence. Corroborating studies that point that the pleasure obtained through the food ingestion replaces the difficulties and emotional pains.

Keywords: *emotional regulation, binge eating scale, food reward*

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Body Mass Index, Food Behavior and Emotions: Preliminary Data

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BACKGROUND: Studies prove that there is a panoply of food behaviors that unleash the disruption of the food ingesta and,

consequently the increase of the Body Mass Index (BMI). So, they emphasize 3 main factors / behaviors: the extern factors characterized by the stimuli of the environment being an example the smell and the presentation of the food, publicity; the defined food restriction shears ingesta of foods in excess after abstinence periods, in other words, periods of compulsion alternated with periods of food abstinence; the ingestion for emotional hunger, negative emotions and lack of affection take to the ingesta of bigger quantity of foods with the intent of obtaining pleasure and gratuity^[1,2]. **OBJECTIVES:** To characterize the sample according to the BMI and to check the predominance of three powers of the Food Behavior (Emotional Ingestion, Food Restriction, Extern Ingestion) **METHODS:** It was carried out a quantitative and exploratory study. The data were gathered in clinical Nutrition practice in the North of Portugal. The Instrument of gathering of data was a sociodemographic and anthropometric questionnaire and the Dutch Questionnaire of the Behavior Food (DEBQ)^[3] translated and validated for the portuguese population, whose variables if they express through a scale of Lickert (1=never and 5=very frequent). So, there were gathered 56 questionnaires of which 92,9 % pertaining to feminine type and 7,1 % to the masculine type, with ages understood between the 18 and 58 years. **RESULTS:** According to the categorization of the BMI it is noticed that 32,1 % of the participants was presenting *normopeso* (normal weight); 35,7 % was presenting excess weight; 25,0 % was presenting obesity Degree I, 5,4 % was presenting Obesity Degree II and 1,8 % was presenting Obesity Degree III. In what concerns the descriptive analysis of the instrument DEBQ the next values were obtained for three different powers: Food restriction (M=3,39; DP=1,13), Extern Ingestion (M=2,69; DP=1,14), Emotional Ingestion (M=2,40; DP = 1,36). **CONCLUSIONS:** According to the initial sample and the preliminary results of this study, it is possible to check that the participants resort with more frequency to the Food Restriction, following the Extern Ingestion and for last the Emotional Ingestion. Showing the importance of food and emotional re-education in the population, specially in the obese population.

Keywords: *body mass index, food behavior, emotions*

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Well-being between generations: new media contribution

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BACKGROUND: The new media cohabit with the Portuguese families in various settings. The question arises as to whether family intergenerational relationships have been altered by their presence and the way that they affect – or not – these relationships, with repercussions for family well-being, at the level of autonomy and authority in this context. This is caused by

the adults' resistance to the use and mastery of these new media, as opposed to the natural propensity of the younger generation, creating intergenerational imbalances within the family context^[1,2]. We consider well-being taking into account the life cycle, which includes family, personal values and the happiness factor. The passage of time and the way in which the media make it appear pose challenges to the concept of well-being, in this work focused on intergenerational relationships^[1].

OBJECTIVES: We intend to present the main domains of affectation of these media in relationships between generations and to identify the repercussions in intergenerational relations.

METHODS: The research is of a quantitative and qualitative nature, using methodological triangulation^[3]: a survey conducted by interview and by questionnaire. We applied semi-structured interviews to a study group composed of 13 families, whose profile was previously defined according to the following variables: family profile; info-communicational literacy and intergenerational relationships and conflict and family cooperation relationships. We applied questionnaires to a sample consisting of a total of 1902 respondents aged between 6 and 18, attending the different cycles of compulsory schooling in Portugal. **RESULTS:** We found that, within the family setting, the younger ones master the new media and their use, but they are also sensitive to the sharing of this knowledge^[4]. In some family contexts, parental authority, given the unequal index of literacy, has indicated conflicting scenarios and variations in intergenerational flows^[2]. **CONCLUSIONS:** According to the survey responses, we infer that the use of new media is a common practice among school children and young people; Adults tend to seek information so that the technological gap is smaller; the Media in the family context are an unavoidable reality and have an impact on family relationships, regarding communication time. Time, once spent around the fireplace, seems to have turned into an "electronic-fireplace", conditioning the topics of interaction^[5]. Changes in the level of time and quality of intergenerational communication can be envisaged, since parents and children or young people have distinct levels and usages of literacy.

Keywords: *new media; families; well-being; intergenerational relations.*

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Effectiveness of a Job Coaching intervention in the sewing sector of an automobile industry

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BACKGROUND: Job coaching is defined as a work tool that uses concepts of ergonomics, biomechanics and safety at work to teach, on job, the best way to perform a task, to reduce physical hazards. It aims towards a multidisciplinary perspective, and this may include protocols such as active ergonomic principles and behavioral-cognitive therapy using a multidisciplinary team of professionals^[1]. **OBJECTIVE:** to verify the efficacy of a job coaching intervention in the variables associated with the perception of exertion and symptomatology, and in what ways they interact at the psychosocial level (task-worker-labour context), affecting other concepts related to production, such as absenteeism values. **METHODS:** A quasiexperimental study was developed in the context of an automobile sewing industry, with a duration of 4 weeks, in which the impact of a psychoeducational intervention was assessed in two different groups (intervention n=27, control n=28). Evaluation methodology included the assessment of painful body regions, using the *Nordic musculoskeletal Questionnaire*; work physical hazards and perceived exertion using *Strain Index*; pain pressure using digital algometry and absenteeism values were collected before and after the intervention. **RESULTS:** 55 participants completed the study, aged between 19 and 63 years, in a population made up of 98.18% women, there are no significant differences in any sociodemographic variables ($p > 0.05$), including seniority (median = 10 years), daily workload (varying between 8 and 10 hours) and pain presence (median = 6.5 degrees in the VAS - moderate-intense degree). Significant differences between group were only found in perceived exertion ($p < 0.05$) after the intervention. The analysis of psychosocial element assessed with the medium version of *Copenhagen Psychosocial Questionnaire*, demonstrates differences in the "work pace" percentage (26.45%), the "possibilities of development" are under normal values by 13.06% and "labour insecurity" with more 16.51% over the average national values. Finally, concerning the "general health" is below by 30, 58%, "burnout" is over normal values by 32.67 percent, "trouble sleeping" is over by 31.91%. **CONCLUSION:** Results correspond positively to psychosocial models related to perceived social support and trust of employee at work. Psychosocial intervention support is a very important tool to reduce stress in the workplace as the "Job demand – Control – Support" support the concept that individual control mitigates the experience of occupational stress and it is extremely important for the performance of the task to educate on strategies to improve postural control, minimizing musculoskeletal discomfort, which is closely related to the tasks demands^[2,3].

Keywords: *Physiotherapy, Postural training, MSWD, Occupational Health*

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Participation and Occupational Involvement – way of combat isolation and dementia

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BACKGROUND: The advancing of age reduces cognitive functions and, when they start to deteriorate, interfere significantly with the safety, independence, functionality and social interaction of the person. Nowadays there are many projects, to "Occupy people", that present a decrease in cognitive skills. But is this therapeutic occupation? Is this what we want at health level? Keep the elderly merely occupied, without these occupations bring them health gains at medium and long term? Thousands of euros are spent on the "occupation" of older population, without obtaining gains in health. Shouldn't health be the first concern with this population? Effectively, health professionals are excellent to address these issues. The World Health Organization^[1] recognizes the need and urgency to implement an approach, in the context of health and focused on the needs of the elderly. **OBJECTIVES:** Thus, this work intends to reflect on the implementation of Health promotion and Participation programs that can effectively enable health gains and improve the Participation and involvement of elderly. **METHODS:** Through the bibliographic review, using the terms participation, health, elderly and occupation, we found that Occupational Therapy is highlighted in the implementation of health promotion programs around the world, guided by objectives, aimed at stimulating motor and cognitive functions and improving the competencies of performance inherent to Participation and Occupational Involvement in the community^[2]. **RESULTS:** The Occupational Therapist is therefore the professional who, par excellence, empowers the occupation to promote health, well-being and quality of life^[3]. The accomplishment of tasks implies the use of motor, cognitive and perceptive functions that are interconnected and are effectively the basis of work to guarantee the involvement of people in occupations promoting Health and Participation. However, it is also necessary to adapt the surrounding environment, the context, the task or the materials to be used in the activities. Here, the look of the Occupational Therapist, is central to meet the specific needs of each person, of each situation and effectively achieve the autonomy and functional independence that are based on self-confidence, security and Promotion of Occupational Involvement. **CONCLUSION:** This is the approach to integrate into health programs, in complementarity with the other professionals of the team. This approach will effectively conclude the work developed by all health professionals favouring the competencies worked by these and using them in the promotion of Occupational Involvement, in the acquisition of autonomy and functionality, in Participation and consequent achievement of gains in Health.

Keywords: *Occupational Therapy, Participation, Occupational Involvement.*

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Hospital Medication Safety Assessment: Contribution to Patient Safety

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BACKGROUND: Medication errors are a public health problem that affects patient safety worldwide. The WHO estimates that in the USA 1.5 million people fall victim to medication errors each year and 140,000 die from those same errors^[1]. Considered that errors are inevitable and provoked in large part by weak health systems^[2], the WHO launched in 2017 the third Global Patient Safety Challenge with the theme of medication safety for reducing medication errors and patient harm caused by unsafe medication practices. Safe use of the drug is one of the areas of priority intervention requiring systematic evaluation of all processes and minimization of risks in its use, which should be included in the primary objectives of health organizations^[3] and one of the areas of attention and nurses' intervention. Medication systems in hospitals are complex, involving many steps and many professionals, that increases the probability of failure^[4]. Medication errors have multiple causes, including both unsafe acts and weak systems provoking errors^[5]. **OBJECTIVE:** The general objective of this work was to describe the safety of medication systems in Portuguese Hospitals. **METHODS:** An ecological, observational cross-sectional descriptive study was carried out through a hospital assessment, constructed and validated for this purpose. The sample consisted of 96 hospitals, corresponding to 81% of the population. **RESULTS:** The preliminary results of the study show that 50% of hospitals rated the safety of the medication in their institution as acceptable, 8,4% as weak, 38,5% as very good and 3,1% as excellent, with almost all hospitals reporting that medication is one of the Institution's priorities, and that there is a patient risk/safety management team (89,6%). In each of the dimensions evaluated the results are quite variable between institutions, with almost all the hospitals reporting having a policy or procedure for medication safety. **CONCLUSION:** We can conclude that medication safety is one of the strategic priorities of hospitals in Portugal, however there are opportunities for improvement identified in all dimensions evaluated. Given that the safety level of the medication was considered acceptable in most Institutions, we believe that there is still a long way to go in improving the structure and processes related to medication safety that influence patient safety and consequently the quality of care. This study allowed to know the Portuguese reality, being the first study carried out in this scope, and to create a valid assessment instrument that allows the hospitals to perform a systematic and structured evaluation and possible benchmark between hospital units with similar characteristics and in the future with other countries.

Keywords: *patient safety; hospital medication systems; medication errors.*

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Program for prevention of falls in old age

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BACKGROUND: The fall is the most serious and frequent domestic accident that affects the elderly^[1], besides being the main cause of accidental death in people over 65 years and usually occurs when one of the risk factors presents acutely, whether they are intrinsic or extrinsic^[2]. Its prevention is of unique importance for the potential of reducing morbidity, hospital costs and consequent isolation, therefore it should be a priority measure for the quality of life of the elderly^[3]. **OBJECTIVE:** To act together with the elderly of the community, in the perspective of preventing falls, expanding their possibilities of leisure and socialization, contributing to a better quality of life. **METHODS:** It was an extension project that took place between February and December of 2018, in a health unit of São Luis-BR, targeting older people over 65 who have already suffered at least one drop in the last year. The procedures were divided into four stages: recruitment of the elderly by health workers, multidimensional assessment of risk factors for falls, 04 bimonthly lectures on fall prevention measures and intervention for 10 months with a protocol of mobility exercises and balance at a frequency of twice a week for 50 minutes a day. **RESULTS:** Thirty-five elderly people aged between 65 and 78 years participated in the project, being 31 women and 04 men, predominantly higher education level 48.5%. Of these ± 65.85% presented a risk of falling, ± 25.7% had moderate or severe depressive symptoms; ± 45.71% used more than three drugs per day. As for the history of falls in the last year, 50% suffered a fall, 36% from two to three falls and 14% more than three falls. There was assiduity and interest in participating in all stages, and most of the elderly were unaware of a large part of the risk factors, and did not use any preventive measures for falls. **CONCLUSION:** It was noticed that multifactorial intervention programs may be effective in reducing falls in the elderly, especially when information measures on risk factors are addressed. Such programs should include physical exercise, vision correction and environmental risks, treatment of orthostatic hypotension,

medication review and advice on falls prevention⁴, because the majority of the participants ignored this information, therefore, the participation of a multidisciplinary team is fundamental. The monitoring of the effectiveness of the measures employed will be given annually through telephone contact, where we will collect information about the retention of the information acquired and new history of falls.

Keywords: Falls; Seniors; Preventing falls.

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Run early not to fall late - the importance of aerobic exercise on the frail elderly

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BACKGROUND: Sarcopenia and frailty are closely related and increasingly accepted as important markers of poor prognosis in the elderly population, associated with high morbidity and high personal and socioeconomic costs. The concept of frailty in the elderly is still not unanimous, and is now considered to be an age-related biological syndrome, leading to vulnerability to external aggression factors, less competence to maintain homeostasis, disability, dependence on others to the daily life activities and increased comorbidities^[1]. More specifically, in the elderly and their relation to physical activity, the frailty is related to the loss of muscle strength that occurs with aging: it is estimated that there is a loss of 1 to 5% of muscle mass per year from the age of thirty^[2]. **OBJECTIVES:** Although there are many factors that contribute to muscle weakness, there are only two that can be potentially avoidable: skeletal muscle disuse and malnutrition. In this context, the lack of muscle mass and muscle weakness are related to mobility deficits in the elderly^[3]. Thus, the purpose of this paper is to produce an analysis about the importance of physical activity in the promotion of active aging and the quality of life of the frail elderly. **METHODS:** A bibliographic research was carried out on the prescription of physical exercise in the frail elderly and on the type of exercise with better results in this target population. **RESULTS:** There is growing body of evidence that suggests that musculoskeletal aging responds favorably to a progressive aerobic training program (which is the main limiting

factor for the elderly's physical activity), since low exercise tolerance is related to aerobic endurance.⁽⁴⁾ In addition, correction of inactivity is accompanied by significant improvements in functional mobility and general activity levels, including fear of falling, bearing body joint pain and transfer from sitting to orthostatic position^[3]. **CONCLUSIONS:** Progressive aerobic training seems to be the most complete in combating the lack of mobility of the elderly. In elderly people with a shortage of muscle mass, the minimization of this risk factor can be achieved through a strength training that must be recorded in a gradual manner. Moreover, older people should just evolve on the training - both in terms of repetitions and in terms of intensity - after the development of muscular support^[2-5].

Keywords: *Frailty, Elderly, Exercise.*

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Cryptococcal meningitis and visual sequelae

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BACKGROUND: *Cryptococcal meningitis* is a pathology caused by the *Cryptococcus* fungus that has two more pathogenic species, *Cryptococcus neoformans* and *Cryptococcus gattii*. The species *C. neoformans* is considered cosmopolitan, while the species *C. gattii* is most commonly reported in tropical and subtropical regions. **OBJECTIVE:** The objective of this study was to evaluate the risk factors with visual sequelae due to Cryptococcal Meningitis through medical records of the João Barros Barreto Hospital (PA - Brazil) from 1998 to 2011 **METHODS:** In the methodology, the tests were used to perform the numerical data, normality analysis; D'Agostino test for parametric analysis; Nonparametric t test; Mann-Whitney for Pearson's correlation; Categorical data, Fisher's exact test and for all $\alpha = 0.05$. **RESULTS:** The medical records of 137 patients

diagnosed with cryptococcal meningitis with and without history of immunosuppression were analyzed. The database studied is mostly male, with mean age 27 ± 13 years among immunosuppressed and immunocompetent patients. In the study, it was observed that children (0-12 years) and adolescents (12-18 years) were the most affected among immunocompetent adults and young adults (19-25 years) and old adults (25-59 years) in the immunosuppressed. **CONCLUSION:** It was concluded that the risk factors that may have an influence on the appearance of visual and non-visual sequelae was the time from symptoms to hospitalization, induction time to consolidation, early drug withdrawal, length of hospital stay, treatment time and Immune system, which has a more exacerbated response in immunocompetent patients, besides non-visual sequelae, cranial nerve involvement, hydrocephalus and gait alteration were observed.

Keywords: *Cryptococcal meningitis, visual sequelae, neurosciences.*

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Effect of Clinical Pilates on the flexibility and musculoskeletal pain of soccer practicing adolescents

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BACKGROUND: Sports injuries have a close relation with poor levels of flexibility in young athletes who practice football^[1]. Mondoni et al.^[2] state that there may be changes in flexibility, resulting from muscle imbalances caused by technical movements performed during training in young athletes who play football, however, there is still a shortage in the current literature on the subject. **OBJECTIVE:** The objective of this study is to check so that the clinician can intervene in Pilates flexibility and changes in musculoskeletal pain in adolescents practicing football

in order to reduce the risk of injury to the lower extremities. **METHODS:** These factors are described by several authors as being responsible for the risk of injury^[1,2]. The sample is composed by the 23 male athletes with ages between 14 and 18 years-old (mean 15,65 ±0,64 years old) from the Under-17 squad in a football club in the region of Viseu, Portugal. The participants will be subject to an evaluation the Musculoskeletal pain using the Body part discomfort scale and evaluate the flexibility of the posterior chain using the Sit and Reach test. In the methodology, an intervention will be performed to a randomly selected group with the Clinical Pilates Method, which lasts 8 weeks, with 2 sessions per week and a duration of 15 minutes each. **RESULTS:** The results showed in the participants of the experimental group, who used the clinical Pilates method that obtained an increase in the flexibility of the posterior chain of the lower limbs ($p=0,05$) and a decrease in the amount of musculoskeletal pain felt ($p=0,02$). **CONCLUSIONS:** These results corroborate studies such as Bertolla, Baroni, Junior & Oltramari^[3], Chinnavan, Gopaladhas & Kaikondan^[4] and Byrnes et al.^[5], in which the Clinical Pilates method promoted increased flexibility and decreased painful symptomatology. It can be concluded that the Clinical Pilates program applied had positive effects regarding the flexibility and intensity of pain in adolescents with soccer practice.

Keywords: *Clinical Pilates; Flexibility; Football; Adolescents; Musculoskeletal pain*

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Adolescents' perceptions regarding the inclusion and well-being of their peers with atypical development

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BACKGROUND: Today, school assumes a central role in the process of socialization, training and inclusion of all students, despite their diversity and specific needs^[1,2]. In this sense, it constitutes a decisive space to promote students' autonomy, well-being and relationship skills, with a view to (co)constructing citizens who intend to be unique and different^[3,4]. **OBJECTIVE:** The aim of this study is to ascertain adolescents' perceptions about the school inclusion and well-being of their peers with atypical development. **METHODS:** It is a non-experimental study with a convenience sample, consisting of 140 adolescents

from the 3rd Cycle of Basic Education [7th – 9th years of schooling] attending a school in the north central region of Portugal. A questionnaire was used to collect the data; it included sociodemographic questions and questions about the students' perspectives regarding the inclusion of students with developmental and intellectual difficulties at the school. **RESULTS:** The data reveal that adolescents are generally supportive of inclusion, with differences according to sex as girls seem to show more positive perspectives and attitudes towards their peers with difficulties. **CONCLUSION:** In view of what has been stated above, it is necessary to implement strategies that improve the peer relationship dynamics, reinforcing coexistence and cooperation in the classroom as well as outside in constructing a more inclusive and supportive school for everyone.

Keywords: *inclusion, well-being, peers, atypical development*

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Development of an aquatic therapy group's protocol program for older adults with upper limb disability

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BACKGROUND: Aging is a natural phenomenon that affects the entire population and is characterized by biological changes such as decreased muscle mass, strength and loss of mobility, balance and motor coordination. All these factors increase the risk of falls in the elderly^[1]. Approximately 30% of the population over 55 years of age have at least one fall per year, and the risk of falls is higher in individuals with osteoarthritis, included on upper limb^[2]. For individuals with pain, exercise in the aquatic environment is presented as an alternative to conventional exercise, since this reduces stress on the joints, lowering the risk of increasing pain. The physical attributes of hydrodynamics such as density, buoyancy, hydrostatic pressure and viscosity promote an environment with conditions that optimize motor and physiological activity^[3]. **OBJECTIVES:** The aim of this study was to develop an aquatic therapy group program protocol for older adults with upper limb disability, to be used in further studies. **METHODS:** The procedures were based on PRISMA and AGREE II^[4,5] applying two strategies: literature review and focus group of experts on aquatic therapy programs for older adults. Through the literature review findings and from the successful experience of the experts, the aquatic therapy group program protocol for older adults with upper limb disability was

prepared in 3 phases (warm-up, conditioning and cooling-down) with content special exercises designated for each phase. Researchers used the PRISMA guidelines for good evidence for the protocol to determine the main issues for the real need of their framework. By, using the AGREE II domains, which are good predictors of outcomes associated with implementation of guidelines, authors followed the steps for the development of the protocol intended to be used in clinical practice. **RESULTS:** A pre-test was done to access the aquatic therapy protocol. On one hand, the functional outcomes of the patients (VAS; Step test; TUG; 10 m Walking; Hand dynamometer, Global Balance Standing Test). **CONCLUSIONS:** The perception of aquatic therapy session (PT ability to calm patient during the session; PT explanations about exercises of the session; feedback at the end of session for future; security feelings during the session; the session was adapted to patient problem). Finally, researchers concluded that this protocol could be repeated and performed in the clinical context.

Keywords: *Aquatic therapy; osteoarthritis; older adults; protocol; functionality.*

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Promotion of health literacy in ageing: educational activity design

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BACKGROUND: In recent years, the incidence of chronic diseases such as hypertension, diabetes and osteoarticular disorders has increased, especially in older individuals. Pharmacological therapy has remained the main therapeutic approach in these diseases and, on account of this, most elderly patients experience polymedication and, thus, have a higher risk of negative results associated with pharmacological therapy^{1,2}.

Moreover, elders also have a higher incidence of impaired movement and difficulties in accomplishing normal activities of daily living (ADL). Motor function limitations may cause loss of balance and falls, in both public and domestic environments, which are etiological factors for high morbidity and mortality rates. Falls may also contribute negatively to the physical, psychological and socioeconomic status, compromising autonomy in ADL^{3,4}. **OBJECTIVE:** With this study, we developed an educational activity aimed at elders, with the objective of improving knowledge about medication, ADL support products, and falls prevention, as well as the promotion of healthy lifestyles such as physical exercise practice. **METHODS:** The activity was designed by a multidisciplinary team of professionals in the fields of Pharmacy, Ortho-Prosthetics, and Physical Exercise. We prepared materials using the templates of a popular board game known as "Jogo da Glória" and gameshow dynamics, and constructed a large size game board, question cards (about medication, accessibility, healthy lifestyles, and physical exercise) and a brief satisfaction survey. We held an experimental edition of this activity with a pilot group of 12 subjects, in the Municipal Library of Faro. We debriefed the participants and used a focus group approach to assess suggestions for improvement. After, the suggested changes were incorporated in the game, and additional sessions with small groups of participants occurred, totalling 30 elders from other Algarve regions. Several sessions are already scheduled to be carried out in the area of S. Brás de Alportel and the assessment of this activity's impact is ongoing. **RESULTS:** On preliminary results, for all the participants (100%), satisfaction was consensual in the accomplishment of this activity and in the recommendation to future participants. **CONCLUSION:** These results allowed to conclude that this activity contributed to the diversification of the daily activities of elders, and also to improve health literacy through an informal activity.

Keywords: *elderly, active ageing, health literacy*

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Health, Aging and Kinetics Lab - Multidisciplinary Approach

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BACKGROUND: According to WHO^[1] between 2000 and 2050, the proportion of the world's population over 60 years old will duplicate to 22%. In Portugal (2017), the aging index was 153.2%, in the Algarve region was 141.2%^[2]. In an aging society with an increased longevity, the challenge to improve the number healthy years and associated the quality of life (QoL) of this

population, implies the development of health strategies and new health and social care innovated models^[3]. The Health, Aging and Kinetics Laboratory (HAK_Lab) aim, was to develop a single infrastructure that combined different professionals (physicians, prosthetics and orthotics professionals, pharmacists, nutritionists, rehabilitation and exercise professionals, economists and statisticians) with the purpose of studying the phenomenon of ageing and associated chronic diseases. **OBJECTIVE:** The HAK-Lab aims to promote research and innovation in the field of new therapeutic approaches, their cost efficiency and repercussion in QoL and strategies to promote health literacy. **METHODS:** HAK_Lab (financed by Operative Program: EP - INTERREG V A España Portugal-POCTEP in the scope of CENIE project) has been equipped with: Medical Body Composition Seca mBCA; Cobas b101 system; CoaguChek INRange; Urisys 1100; Isokinetic Humac Norm; Vicon Nexus System and AMTI Force Platform; Electromyography - Cometa and Accelerometers - ActivPAL. Partnerships were established with the CHUAlgarve (Physical Medicine and Rehabilitation Service and Center for Physical Medicine and Rehabilitation of the South), ACES Central, the Clinical Academic Center-ABC, the Department of Biomedical Sciences and the Medicine and Centre for Biomedical Research-CBMR to guarantee the multidisciplinary team, and critical mass to propose individual and inter institutional research projects. **RESULTS:** This multidisciplinary team and cross institutional approach, has led to the development of eight currently ongoing research projects, more than 25 training sessions and workshops with impact on more than 300 technicians and caregivers. 15 international experts in the field of aging, have been to the University and Region of Algarve leading to the establishment of international cooperation protocols. Since June 2017 more than 1000 elderly subjects have participated in educational sessions regarding health illiteracy. **CONCLUSIONS:** Concluding this Lab will allow us to: a) obtain indicators that enable professionals to direct their therapeutic approaches and the creation of new rehabilitation protocols for chronic diseases associated with aging; b) Increase health literacy in health professionals and in elderly population; c) obtain health indicators that help to define strategies and policies for social innovation and health in the area of aging.

Keywords: *Ageing, Clinical Research, Quality of Life, Health, Economics*

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Levels of prevention in health: from primary prevention to the fifth level - the role of family doctor

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BACKGROUND: prevention is a set of actions aimed at protecting and improving the health of a population. It can be

carried out at any stage of the natural history of the disease: from before exposure to risk until it is already installed, in order to delay its evolution and minimize comorbidities. The family doctor is fundamental in a health system that bets on prevention. **OBJECTIVES:** to present the role of the family doctor at different levels of health prevention. **METHODS:** review of national and international publications; selection of articles in *Pubmed* with the terms *MeSH* "prevention", "health" in the last 10 years in Portuguese and English. **RESULTS:** until recently, four levels of health prevention were considered: health promotion and "classic" primary, secondary and tertiary prevention^[1]. Today it is known that it is possible to present a fourth and fifth level. Empowerment of individuals and communities as well as the creation of health-friendly environments are the main goals. **CONCLUSIONS:** health promotion promotes lifestyles that contribute to increasing the health and well-being of populations. Individual and collective actions should be promoted and include policies and promotional programs such as: alcohol and tobacco abstinence, nutrition / healthy eating and regular physical exercise, etc. Primary prevention aims to avoid or remove exposure of an individual or population to a risk factor before a pathological mechanism develops. The main objective is to reduce the incidence of the disease, such as the National Vaccination Plan. In secondary prevention the goal is the early detection of health problems in asymptomatic individuals, leading to an earlier diagnosis of the disease. Organized screenings (such as breast cancer) are examples that lead to a decrease in the prevalence of the disease^[2]. Tertiary prevention aims to reduce the social and economic costs of the disease through the early rehabilitation and reintegration of individuals. The fourth level aims to avoid or mitigate the excess of medical intervention associated with unnecessary or unjustified medical acts^[3] and to enable users to make autonomous and informed decisions^[4]. The fifth level of prevention aims to prevent harm to the wearer by acting on the doctor to avoid phenomena of *burnout*^[5]. Thus, the family doctor today plays a leading role in the continuum of prevention before a user who is increasingly informed and empowered to participate actively in health decision-making with a strong economic and social impact.

Keywords: *prevention, education, empowerment, health*

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Investigação clínica: a perspetiva do enfermeiro

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INTRODUÇÃO: A investigação clínica refere-se a toda a investigação que é desenvolvida em humanos (saudáveis ou

doentes). Tem como foco a melhoria do conhecimento das doenças, o desenvolvimento de novas metodologias de diagnóstico e tratamento ou dispositivos médicos que permitam um melhor cuidado dos doentes. **OBJETIVOS:** É altamente delimitada em termos legais e respeita protocolos de estudo, podendo apenas ser realizada sob determinadas condições, deve ter o objetivo de aumentar o conhecimento médico, ser levada a cabo por indivíduos competentes, tomar as medidas necessárias para proteger aqueles que se prontificam a colaborar na investigação, obter aprovações regulatórias e tomar todas as medidas ético-legais necessárias e recolher o consentimento daqueles envolvidos na investigação. **MÉTODOS:** Dentro da investigação temos os ensaios clínicos, um ensaio clínico é uma experiência que testa uma droga ou estratégia terapêutica, pode ser uma forma sobre como administrar um tratamento, por exemplo, ou sobre a segurança ou eficácia de um novo tratamento. O enfermeiro nos ensaios clínicos pode intervir em diversos processos do ensaio clínico e na logística do centro de ensaio onde o estudo se realiza, assumindo muitas vezes o papel de coordenador de estudo. O enfermeiro e coordenador de estudo na pesquisa clínica possui atividades diversas durante a condução de um protocolo de estudo, a coordenação / monitorização do estudo, trata-se de um campo de trabalho novo e muito interessante, pois requer aperfeiçoamento contínuo e trabalho em equipa multidisciplinar, com boa interação entre todos os participantes (colaboradores). **CONCLUSÃO:** Fazem parte das atribuições, dos enfermeiros nos ensaios clínicos, atividades não somente de assistência, mas também administrativas e de educação permanente.

Keywords: *investigação clínica, ensaios clínicos e enfermeiro e coordenador de estudo*

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