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Esta é uma edição especial da Revista Ibero-Americana de Saúde e Envelhecimento inteiramente dedicada à publicação dos *Abstracts* do *1st Comprehensive Health Research Centre Summit*.

O Comprehensive Health Research Center (CHRC) é um novo centro de investigação multidisciplinar, multi-institucional e abrangente classificado como Excelente pela Fundação Nacional para a Ciência e Tecnologia (FCT).

Com o objetivo de apoiar, desenvolver e fomentar a investigação clínica, de saúde pública e de serviços de saúde, os pilares e as atividades centrais do CHRC são a educação, a formação e a inovação em saúde.

Este centro de investigação é promovido pela NOVA Medical School/NMS e integra mais 4 parceiros de gestão: Escola Nacional de Saúde Pública/ENSP, Universidade de Évora, Instituto de Saúde Mental Global de Lisboa/LIGMH e Hospital de Santo Espírito da Ilha Terceira/HSEIT. Reúne mais de 125 investigadores doutorados integrados, 60 alunos de doutoramento, 48 investigadores e técnicos não doutorados integrados e 47 colaboradores de 26 instituições, origens e competências diferentes.

A missão do CHRC é produzir evidências robustas para melhorar a prática clínica atual, a política de saúde e a organização de serviços de saúde. Para garantir que a nossa investigação alcance o seu público, também estamos comprometidos com a educação e capacitação da saúde do doente e com a exploração dos resultados de investigação em aplicações comerciais.

Os membros deste Centro investigam, colaboram e ensinam, essencialmente, em 4 linhas temáticas:

- Promoção da saúde, saúde da população e estilos de vida;
- Elevada carga de doença e elevada mortalidade;
- Investigação em políticas de saúde e serviços de saúde;
- Inovação em saúde.

O CHRC apoia os seus investigadores através de gabinetes fortemente especializados, tais como Gabinete de Apoio à Estatística e Modelação, Biobanco, Laboratório Genético, Unidade de Ensaios Clínicos (NovaCRU), Rede Portuguesa de Infraestruturas de Investigação Clínica (PtCRIN) e Gabinete de Transferência de Tecnologia.

O desenvolvimento de parcerias é também uma tradição robusta no CHRC, alguns exemplos são com associações de doentes (European Patient´s Academy, Liga Portuguesa Contra o Reumatismo, Rede Europeia de Alzheimer, etc.), várias empresas (CENC Sleep Centre, José Mello Saúde Enterprises, Medinava Centro de Telemedicina), organizações sem fins lucrativos (Patient Innovation Association) e órgãos governamentais Portugueses (Direcção-Geral da Saúde, Administração Central do Sistema de Saúde e Agência Reguladora de Medicamentos INFARMED).

A partir deste ano (2020) será realizada anualmente um *meeting* do CHRC para promover os novos avanços e a atualização dos resultados da pesquisa nas quatro linhas temáticas do CHRC. O *1st Comprehensive Health Research Centre Summit* ocorreu nos dias 19 e 20 de novembro (2020). Os *abstracts* aqui apresentados são, assim, um excelente exemplo da diversidade, mas também da qualidade da investigação produzida e em curso.

RESEARCH OF THE OCCUPATIONAL AND ENVIRONMENTAL HEALTH DEPARTMENT – WHAT IS THE ROLE ON SUSTAINABLE DEVELOPMENT GOALS ACHIEVEMENT?

Abstract ID: 7741

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ABSTRACT

Objective: The United Nations Sustainable Development Goals (SDGs) have 17 goals that all UN Member States have agreed to work towards achieving by 2030. The Department of Occupational and Environmental Health (DOEH) from National School of Public Health, NOVA University of Lisbon has developed several research projects that aim to give a contribution for the achievement of these goals. This presentation intends to consider these projects and provide an explanatory note on which way the projects contribute for the SDGs.

Methods: A first survey of the projects developed since 2016 was performed. Background information from each project was collected to identify the aims, the foreseen outputs and possible impacts.

Results: Ten research projects were identified and all can result in positive impact for SDGs. More precisely, nine projects contribute for Goal 3: (Good health and well-being) and Goal 8 (Decent work and economic growth). From these also one contributes simultaneously for Goal 13 (Climate change). One project besides contributing for Goal 3 also has a positive impact on Goal 2 (Zero hunger) and Goal 13 (Climate change).

Conclusion: This exploratory analysis allows recognizing the importance of research for SDGs achievement since it aims to support decision-making process of the policy makers (science-policy interface). In the case of the DOEH research, and the fact that it´s singular at national level and intends to solve practical real-life problems of different sectors of society (e.g. organizations, workers, citizens), the impacts are clear and deserve to be recognized and supported to keep giving those answers.

Keywords: Occupational Health; Environmental Health; Public Health; Climate Change; Food Safety and Security.

ASSOCIATION BETWEEN ACTIVITIES OF DAILY LIVING AND VERBAL AND VISUOSPATIAL MEMORY IN OLDER ADULTS WITH MILD COGNITIVE IMPAIRMENT

Abstract ID: 7742

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ABSTRACT

Objective: Cognitive decline is not the inevitable result of aging, but the impairment of cognitive and functional decline. Deficits in memory have been identified as important in mild cognitive impairment (MCI). The aim of this study was to explore the relationship between performance in memory tasks and daily functioning, in MCI.

Methods: A sample of 157 participants with MCI (73.7±7.6 years) completed a battery of tests for assessing activities of daily living (basic or b- and instrumental or i-ADL) and verbal (Dementia Rating Scale Memory (DRS-M)) and visuospatial memory (Rey–Osterrieth Complex Figure Memory, ROCF-M). t-test, Pearson's correlation and multiple linear regression were used for data analyzes.

Results: The scores in ROCF-M were better in the independent (n=116) compared to the dependent group (n=41), according to the b-ADL ($p<0.05$). Regarding the i-ADL, the scores in the DRS-M and ROCF-M were higher ($p<0.001$) in the independent (n=34) in comparison with the dependent group (n=123). The i-ADL had a negative correlation with both DRS-M and ROCF-M ($p<0.01$). Multivariate analysis showed that difficulties in ROCF-M explained 3.1% of the variation in b-ADL. For i-ADL, ROCF-M and DRS-M explained 11.5% of the variation.

Conclusion: Visuospatial and verbal memory seem to contribute more strongly to predict i-ADL then b-ADL. Our results are aligned with the literature, which refers to i-ADL as more sensitive to the effects of memory decline. These results point to the need to invest in programs that prevent memory decline with effects on the perfor-mance in everyday functioning.

Keywords: Cognitive Functions; Daily Functioning; Memory; Mild Cognitive Impairment.

OBESITY IMPACTS ON ABSENTEEISM AND INDIRECT COSTS AMONG WORKING ADULTS

Abstract ID 7743

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ABSTRACT

Objective: To investigate the association between obesity and absenteeism and its indirect costs.

Methods: Individuals employed and actively working at baseline form the EpiDoC Cohort, a large Portuguese population-based prospective study analysed from 2011 to 2016. Body mass index was assessed during baseline appointment. Follow-up assessment was performed through a phone interview and self-reported absenteeism defined by the question "did you have a sick leave in previous 12 months? yes/no", followed by the number of days missed work due to sickness in the previous twelve months. Negative Binomial Regression model estimated the association between obesity and absenteeism. Indirect costs were computed using the human-capital method.

Results: EpiDoC cohort had 4338 participants working adults at baseline. The prevalence of obesity among working adults was 15.2% and of absenteeism was 22.7%. Obesity was associated with an increase in absenteeism incidence rate ratio by 31% ($p<0.01$). Obese individual miss 10.2 workdays per year, more than 3.8 days (95% CI 3.1-4.5), than individual with normal weight. This number is higher in obese women, 4.6 days per year (95% CI 3.6-5.6) According to the professional categories, women with white collar professions were 82% ($p<0.01$) more likely to miss work than peers with their normal weight. Extrapolating to the entire working population, absenteeism due to obesity has an additional cost of 236€ million per year.

Conclusion: Obesity is an independent risk factor for absenteeism among working adults, mainly in women and has a major impact on economies in south European population.

Keywords: Epidemiology; Health Economics; Obesity.

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DIETARY PROTEIN, PHYSICAL ACTIVITY AND PHYSICAL FUNCTION IN OLDER ADULTS: POOLED ANALYSIS OF FOUR LONGITUDINAL COHORTS

Abstract ID 7751

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ABSTRACT

Objective: We investigated the longitudinal relationship between protein intake and physical function, and the interaction with physical activity (PA).

Methods: A pooled analysis of individual participant data from cohorts in the PROMISS (PRevention Of Malnutrition In Senior Subjects in the EU) consortium (Health ABC, NuAge, LASA and Newcastle 85+) where 5725 community-dwelling older adults were followed up to 8.5 years. The relationship between protein intake and walking speed was determined using joint models (linear mixed-effects and Cox proportional hazards models) and the relationship with mobility limitation using multi-state models.

Results: Higher protein intake was modestly protective of decline in walking speed in a dose-dependent manner (e.g. protein intake ≥1.2 vs 0.8 g/kg adjusted body weight (aBW)/d: ß=0.024, 95%CI:0.009,0.032 SD per year), with no clear indication of interaction with PA. Participants with protein intake ≥0.8 g/kg aBW/d had also a lower likelihood of incident mobility limitation, which was observed for each level of PA. This association seemed to be dose-dependent for difficulty walking but not for difficulty climbing stairs. No associations between protein intake and other mobility limitations transitions were observed.

Conclusion: Higher daily protein intake may reduce physical function decline not only in older adults with protein intake below the current RDA of 0.8 g/kg BW/d, but also in those with a protein intake that is already considered sufficient. This dose-dependent association was observed for each level of physical activity, suggesting no clear synergistic association between protein intake and PA in relation to physical function.

Keywords: Protein; Walking Speed; Physical Activity; Joint Models; Older Adults.

ASPERGILLUS SPP. AND AZOLE-RESISTANCE CHARACTERIZATION ON MECHANIC PROTECTION GLOVES FROM WASTE SORTING INDUSTRY

Abstract ID 7752

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ABSTRACT

Objective: The use of mechanic protection gloves (MPG) by workers from waste sorting promotes humidity and temperature conditions providing a favorable environment for the growth of retained *Aspergillus*. The aim of this study was to characterize *Aspergillus* spp. presence in MPG as well as to detect possible azole-resistant isolates.

Methods: The analyzed samples consisted of 67 MPG. Fungal load was extracted with 10 mL of 0.1% Tween™ 80 saline solution (NaCl 0.9%) for 30 min at 250 rpm, and 150 µL of those extracts were streaked onto malt extract agar (MEA) supplemented with chloramphenicol (0.05%) and dichloran glycerol agar (DG18). The frequency of azole-resistance was determined by inoculation of the extracts onto screening agar plates containing Sabouraud dextrose agar media supplemented with 4 mg/L itraconazole (ITR), 1 mg/L voriconazole (VOR), and 0.5 mg/L posaconazole (POS). After incubation at 27 °C for 5 to 7 days *Aspergillus* spp. densities (CFU.m-2) were calculated, and *Aspergillus* sections were identified through macro and microscopic characteristics.

Results: The most commonly fungi found on MPG was *Aspergillus* spp. (50.46%). Azole resistant *Aspergillus* sections were found in both ITR and POS supplemented media. In POS supplemented media only *Aspergillus* section *Clavati* was found (500 CFU.m-2; 0.02%), but in ITR supplemented media, 6 different *Aspergillus* sections were found.

Conclusion: MPG can be used in passive sampling to assess occupational exposure to *Aspergillus* burden and to screen azole resistance in waste sorting industries and contribute for risk characterization.

Keywords: *Aspergillus* Burden; *Aspergillus* Sections; Azole Resistance Screening; Occupational Exposure Assessment; Risk Characterization.

VALIDITY OF A DYNAMIC MULTIFACTORIAL FALL RISK ASSESSMENT MODEL FOR OLDER ADULTS

Abstract ID 7753

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ABSTRACT

Objective: Several studies build predictive models to identify older adults at high risk of falling. However, current models are limited to intrinsic risk factors for falls, not adjusted for contextual exposure. Continuous risk scores prove to be valid and useful for the early risk diagnose in other conditions. The present study aimed to create and validate a continuous intrinsic-exposure fall risk score (cFRs) usable to determine the individual high-low risk of falling of community-dwelling older adults.

Methods: Previous falls (last 12 months) were reported from 504 older adults (73.6±6.3 years), posteriorly categorized as occasional fallers (≤1 fall), or as recurrent fallers (≥2 falls). cFRs derivation resulted from summing the standardized residuals (Z-scores) of the intrinsic and contextual exposure variables. Receiver operating characteristics (ROC) curves were used to determine the cFRs accuracy in identifying recurrent fallers.

Results: The cFRs evidenced a graded relationship with the reported fall, showing a lowest score in the participants reporting no falls (-1.66±2.59), higher in those reporting one fall (0.05±3.13, $p<0.001$), and highest in recurrent fallers (2.82±3.94, $p<0.001$). ROC analysis confirmed the cFRs as a moderately accurate tool to identify recurrent fallers, revealing an area under the curve= 0.790 (0.746–0.833, 95% confidence intervals), ($p<0.001$).

Conclusion: The cFRs proved its ability to accurately identify older adults who fall recurrently. Moreover, cFRs showed to be a valid dynamic multifactorial fall risk assessment tool for epidemiological analyses and clinical practice. This innovative method has the potential to become a widely used approach.

Keywords: Aging; Area Under the Curve; Exposure Fall Risk; Fall Prevention; Multifactorial Fall Risk.

NON-COMMUNICABLE CHRONIC DISEASES ARE ASSOCIATE WITH FRAGILITY FRACTURES IN WOMEN IN PORTUGAL

Abstract ID 7756

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ABSTRACT

Objective: Osteoporosis is a public health problem worldwide responsible for fragility fractures (FF). The aim of this research is to study the association between sociodemographic lifestyles and chronic non communicable chronic diseases with a prevalent FF in portuguese women ≥50 years.

Methods: Women ≥50 years from the EpiReumaPt study (2011–2013) were evaluated. Self-reported data regarding sociodemographic, FF and chronic non communicable diseases was collected through a semi-structured questionnaire. FF was defined as any self--reported low-impact fracture that occurred after 40 years of age. We divided this group in 2 subgroups: with and without prevalent FF. Descriptive, bivariate analysis and Odds Ratio were estimated. All statistical tests were performed using the SPSS 26, considering the significance level of 5%.

Results: A total of 3662 women ≥50 years of age were included and divided into 2 subgroups with (n=646) and without FF (n=2978). In the group of women with FF, rheumatic disease was the most self-reported chronic disease (62.9%) followed by hypertension (58.8%). There was a significant association between the existence of FF and hypertension (OR=1.36 (1.15-1.62); p<0.0001) and diabetes mellitus (OR=1.36 (1.10-1.67); p-0.004), even when adjusted for age and rheumatic disease. There was no significant association between the existence of FF and education, when the OR was adjusted for age and rheumatic disease. No association was found between prevalent FF and lifestyles.

Conclusion: FF are associated with non-communicable chronic diseases and this should awareness to the need to have health policies that focus on prevention.

Keywords: Diabetes Mellitus; Hypertension; Osteoporotic Fractures; Portuguese Women; Public Health.

RELIABILITY OF THE PORTUGUESE VERSION OF TIMED INSTRUMENTAL ACTIVITIES OF DAILY LIVING: A PRELIMINARY STUDY

Abstract ID 7770

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ABSTRACT

Objective: The main objective of this study is to provide information on the adaptation process of the Timed Instrumental Activities of Daily Living Tasks (TIADL) into Portuguese and to provide preliminary data on its reliability in older nursing home residents (>75 years).

Methods: The TIADL consists of 5 common instrumental activities of daily living. Five nursing homes were selected by convenience. For test-retest reliability analysis, the TIADL was administered by the same rater on two occasions, 10-14 days apart. The internal consistency was examined through Cronbach's α. The relative reliability was estimated using the intraclass correlation coefficient (ICC), and the absolute reliability was analyzed using the standard error of the mean (SEM). Systematic bias was studied using the paired-samples t-test or the Wilcoxon signed-rank test.

Results: The study involved 22 participants (17 women), with an average age of 86.96 (±3.99) years. The Cronbach's α was 0.51, corresponding to moderate reliability (as the number of items<10). All the tasks showed good relative reliability (ICC values from 0.75-0.90). Relatively to absolute reliability, all the tasks presents acceptable measurement precision. We did not find any systematic bias.

Conclusion: According to the preliminary results, the Portuguese version of TIADL seems to have good test-retest reliability and acceptable measurement precision. It is necessary to collect more data to confirm that the TIDAL is reliable and valid and could be used as a valuable clinical tool in Portugal. This is important, as, to the best of our knowledge, there is no similar method in Portugal.

Keywords: Actual Performance; Clinical Tool; Nursing Homes; Older Adults; Test-retest.

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PREPAREDNESS OF NOVA UNIVERSITY OF LISBON: SARS-COV2 SEROPREVALENCE AND MENTAL HEALTH ASSESSMENT AMONG STAFF

Abstract ID 7799

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ABSTRACT

Objective: The new coronavirus disease (COVID-19) outbreak and rapid global spread has caused universities to transition to online learning and working, avoiding the risk of inter-person contact. In order to prepare the return to a new normal life in the fall, a survey was conducted at Nova University in order to determine the seroprevalence of SARS-CoV2 and to characterize the physical and mental health of its collaborators.

Methods: Recruitment occurred at NOVA University schools from 15th - 30th of June, and those interested registered voluntarily. Participants filled a semi structured questionnaire regarding the presence of COVID-19 symptoms in the previous 14 days, presence of chronic non communicable diseases, chronic medication and the presence of anxiety and depression symptoms (Hospital anxiety and depression scale – HADS).

Results: Out of 1648 recruited participants, 1645 were tested. The estimated prevalence of IgG antibodies for the SARS-CoV-2 among NOVA collaborators was 3.0% (n=50), from which 43.5% reported having symptoms. Regarding physical and mental health, 65.8% of participants reported having at least one chronic disease. The prevalence of depression symptomatology was of 2.1%, and anxiety symptomatology was at 8.3%. Both of which significantly affected women more than men. Alcohol consumption surges as a protective factor, being significantly associated with depression symptoms.

Conclusions: Our findings contribute to guide UNL in implementing tailored strategies to assure the physical and mental health of our community during this Pandemic crisis.

Keywords: Coronavirus; Diagnosis; Health; Serology.

HIGH-INTENSITY INTERVAL TRAINING IN HIGH-SCHOOL PHYSICAL EDUCATION CLASSES: STUDY PROTOCOL FOR A RANDOMIZED CONTROLLED TRIAL

Abstract ID 7803

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ABSTRACT

Objective: School and Physical Education classes (PEC) are privileged spaces, promoters of positive changes for the rest of life. High-intensity interval training (HIIT) is presented as a time-efficient alternative to aerobic training, which leverages the Physical Exercise (PE) participants, resulting in health outcomes improvements, mainly from adolescents. Despite the widespread interest in the advantages that HIIT methodology presents, there is a lack of randomized controlled studies investigating the impact on adolescents, mainly approaching the adolescent's environment, such as schools. This study intends to evaluate the utility of a HIIT program integrated into High-School PEC.

Methods: A randomized controlled trial will be performed on two groups of PEC students (n=243). HIIT program will be applied in the firsts 10-15 minutes of each PEC, twice a week, for 16 weeks, ranged from 14 to 20 intervals, adopting a 2:1 work-to-rest ratio. A cut-point of >=90% of maximal heart rate will be used as our criterion for satisfactory compliance to high-intensity exercise. A subjective effort scale will be applied throughout each session to estimate effort, fatigue and training load. The heart rate will be monitored throughout the session in real-time through bluetooth technology. The control group will continue the usual programmed PEC.

Results: The primary outcomes measure to be evaluated will be physical fitness, physical activity (PA), and motivation for exercise. The study builds on previous research suggesting that exercise intensity may influence the efficacy of exercise on adolescents. The hypothesis is that HIIT will improve fitness, PA, and motivation.

Keywords: Adolescents; Health; HIIT; Physical Exercise; Motivation.

Trial registration

ClinicalTrials.gov NCT04022642 registered on 17 July 2019.

Funding

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THE USE OF HORSE-RIDING SIMULATORS TO REDUCE LOW BACK PAIN: AVOIDING THE DISADVANTAGES WHILE KEEPING THE BENEFITS

Abstract ID 7804

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ABSTRACT

Objective: To evaluate the effects of horse-riding simulators for reducing pain levels in low back pain patients and to discuss the use in the clinical practice compared to hippotherapy with real horses.

Methods: A systematic review and meta-analysis was conducted following PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guidelines. The meta-analysis statistic procedure was performed by using the Review Manager Software (Revman 5.3).

Results: Five randomized controlled trials were included in the review and meta-analysis. The studies contained 212 participants, 105 inside the control group (CG) and 107 in the HRG). Horse-riding interventions had a mean length of 7 weeks where participants exercised approximately ~24.2 minutes, 3.3 times/week. Low-back pain was assessed by the Visual Analogue Scale and the Numeric Rating Scale. Results showed significant differences were achieved (p=0.03, with a SMD of -1.14 and a 95% CI from -2.16 to -0.11). Given the limitations of hippotherapy with real horses, such as health insurance, high costs to care for and train the horses, the distance to riding centers (often placed in remote areas), the risk of falling, the weather, the risk of allergic reactions, or other aspects like fear or anxiety, horse-riding simulators may be an alternative to provide a mechanical stimulus similar to the provided by real horses. However, other psychological benefits cannot be achieved.

Conclusion: The use of horse-riding simulators could be an effective tool to reduce low back pain and some hippotherapy-related disadvantages can be addressed.

Keywords: Equine-assisted Therapy; Horseback Riding; Hippotherapy; Musculoskeletal Pain; Physical Therapy.

SLEEP, PINEAL VOLUME AND MELATONIN LEVELS IN WOMEN WITH FIBROMYALGIA: A PILOT STUDY

Abstract ID 7808

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ABSTRACT

Objective: Lack of sleep is a recurring problem in fibromyalgia. The pineal gland is a brain organ involved in sleep-wake rhythms and is closely related to the production and synthesis of melatonin, a natural indoleamine produced by humans. Therefore, the objectives of the present study are to quantify pineal gland volume, nocturnal melatonin levels, and sleep hours in women with fibromyalgia as well as to test whether a relationship exists between them.

Methods: Ten women with fibromyalgia underwent brain MRI scans. The 3D slicer software was used for image processing, and through manual segmentation, the volume of the pineal gland was obtained. Two saliva samples were collected on two consecutive days using Direct Saliva Melatonin ELISA to measure melatonin concentrations. The Pittsburgh Sleep Quality Index (PSQI) was used to know the sleep quality and sleep hours. The SPSS software was used to analyze the data and statistical significance was set at p=0.05. Spearman correlation coefficient was used for correlation analysis of pineal the gland volume with melatonin levels, sleep hours, and sleep quality index.

Results: The pineal gland volume of the participants was 100.13 (40.31) mm^3, the melatonin level was 15.67 (10.66) pg/mL, the PSQI was 11.79 (3.75) and the participants slept 5.43 (0.78) hours. A significant correlation was found between pineal gland volume and melatonin levels (p=0.001; r=0.767). However, significant correlations were not found between pineal gland volume and sleep hours (p>0.05) and PSQI (p>0.05).

Conclusion: The pilot study found significant correlations between the pineal gland volume and melatonin levels.

Keywords: Chronic Pain; MRI Scan; ELISA.

EFFECT OF A MULTIMODAL PHYSICAL EXERCISE PROGRAM ON EXECUTIVE FUNCTION IN PATIENTS WITH TYPE 2 DIABETES: PRELIMINARY RESULTS

Abstract ID 7812

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ABSTRACT

Objective: In addition to the increased mortality rate compared to the general population, growing evidence suggests that diabetes is a risk factor for mild cognitive impairment and dementia. This longitudinal study evaluated the impact of a multimodal exercise program on executive function in participants with type 2 diabetes (T2DM).

Methods: A one-group repeated measures design was used. Fifteen male middle-aged and older participants with T2DM, aged 70.7±6.3 years and diabetes duration of 13.7±9.7 years, volunteered for this study. Participants were tested on two occasions 4 weeks apart to establish a baseline measure before engaging in the exercise program (55 min per session; 3 x week) for 8 weeks. Participants were tested on another occasion, immediately after the exercise program. Executive function was assessed by the Stroop color and word test, phonemic and semantic verbal fluency test, and Trail Making Test, part B.

Results: Although baseline measures remained unchanged, the Wilcoxon test showed significant improvements (p<0.017, Bonferroni adjustment to compensate for multiple comparisons) after the exercise program in the phonemic fluency and Stroop Color tasks, as well as a trend to improve in Stroop word-color (p=0.018).

Conclusion: Overall, these preliminary results support the idea that a multimodal physical exercise program, merging physical and cognitive stimulation, can enhance executive function in males with T2DM.

Keywords: Cognition; Dual-task Exercise; Physical Exercise.

CAN TWO MULTIMODAL PROGRAMS IMPROVE DUAL-TASK PERFORMANCE IN COMMUNITY--DWELLING OLDER ADULTS AT HIGH RISK OF FALLING?

Abstract ID 7816

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ABSTRACT

Objective: The present study aimed to evaluate the effect of two 12-week multimodal exercise programs delineated for community-dwelling older adults at high risk of falling, in a semantic dual-task (DT) performance.

Methods: This pilot study assessed 37 male or female community-dwelling older adults (74.3±5.2 years). Participants were randomized into a psychomotor intervention group (EG1) and a combined intervention group [psychomotor intervention + whole-body vibration] (EG2). Participants were asked to carry out the Timed up and Go test [TUG] (s) while naming as many animals as possible (TUG-A). Thus, the TUG-A was performed to measure the DT performance.

Results: The adherence rate in EGs was 86.3% and the perceived exertion of the exercise intensity was moderate (EG1: 12.8±0.3 *vs.* EG2: 13.0±0.4 points). Wilcoxon test comparisons revealed significant differences in both EGs between the baseline and the post-intervention, namely in the variables "time (s)" (EG1: 11.9±3.3 *vs.* 10.7±3.4, p=0.018; EG2: 11.2±3.4 *vs.* 10.2±2.7, p=0.035), and "cognitive stops (n)" (EG1: 1.9±1.1 *vs.* 1.2±0.9, p=0.017; EG2: 2.0±1.2 *vs.* 1.2±0.9, p=0.017). The effect size (r) was medium in all variables (EG1: 0.40; EG2 ranging from 0.34 to 0.39). No differences between groups were found.

Conclusion: This study results suggest that both multimodal programs were effective and well tolerated, decreasing the risk of falling by inducing improvements in DT performance.

Keywords: Ageing; Fall Prevention; Older Adults; Psychomotor Intervention; Whole-body Vibration.

Trial Registration

ClinicalTrials.gov Identifier: NCT03446352.

Funding

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THE PORTUGUESE INSTRUMENT TO DETECT IN-HOME FALL RISK FACTORS IN OLDER PEOPLE: ON THE WAY TO VALIDATION

Abstract ID 7817

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ABSTRACT

Objective: Approximately 28%-35% of people aged of 65 and over, fall each year. Often, older people spend most of time (60%-70%) at home and for that the place where they live and do most of daily activities should provide them comfort and security. Therefore, the purpose of this study is to create and begin a validation of Portuguese checklist that identify falling risk factors at home.

Methods: The *Fatores de Risco de Queda no Domicílio* (FRQD) – Checklist is an instrument created based on other checklist to evaluate households from other countries. A cross-cultural adaptation was made to the different characteristics of the most common houses in Portugal.

This instrument evaluates the different divisions of the houses and each item was verified through the analysis of scientific studies about fall risk factors at home. The FRQD – Checklist was reviewed by an experts committee and a pre-test was carried out. The final version was applied in 10 houses by 3 evaluators.

For the FRQD-Checklist performance was conducted an analysis of five hierarchical clusters to scores through the dendrogram view (Squared Euclidean distance and Ward method) for aggregating individuals. The average of the scores was calculated for each cluster and for each evaluator and non-parametric statistics (Kruskal-Wallis test) were applied.

Results: For each hierarchical cluster, there were no statistically significant differences ($p>0.05$) in the scores of the different house divisions to each evaluator.

Conclusion: The FRQD-Checklist presents liable conditions to detect in-home fall risk factors in Portuguese older population.

Keywords: Accidental Falls; Aged; Checklist; Residence Characteristics.

THE ONE HEALTH APPROACH AS A CONTRIBUTE FOR MYCOTOXINS-RELATED ISSUES

Abstract ID 7818

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ABSTRACT

Objective: The One Health concept aims to solve common health issues influenced by a triad of domains: humans, animals, and the environment. Although presenting an integrated perspective of health, it is not exempt from challenges. Mycotoxins, natural toxins produced by fungi that are usually present in the environment, play an important role that may affect animals and human health. Climate change scenarios are expected to increase the occurrence of fungi and consequently of mycotoxins as e.g. aflatoxins in cereals crops, contributing for the increment of aflatoxins-health related outcomes. This presentation intends to demonstrate that One Health approach is the most suitable to tackle the issues related with mycotoxins.

Methods: A literature search considering the occurrence of aflatoxins in animal-derived products was performed to identify a case-study considering the One Health approach.

Results: The occurrence of aflatoxins in dairy products was found as a potential health threat for animals and humans. The exposure in occupational settings related with animal production is also a concern regarding human exposure. The scenario of climate change will lead to the use of higher doses of biocides (fungicides) thus affecting the environment and the human health due to the acquired azole resistance among fungi.

Conclusion: This analysis recognized the need of a multi-sectorial intervention under the One Health to maximize the benefits within the three domains. The establishment of preventive measures is characterized by several challenges, but it is expected to allow Public Health achievements common to the three domains.

Keywords: One Health; Environmental Health; Public Health; Climate Change; Food Safety.

COGNITIVE FUNCTIONING AND BODY COMPOSITION IN OLDER ADULTS LIVING IN LONG-TERM FACILITIES – A PILOT STUDY

Abstract ID 7819

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ABSTRACT

Objective: To examine cognitive functioning and body composition in institutionalized older adults and to investigate their interrelations.

Methods: Fifty-eight older adults (85.5±7.9 years; 60.3% women) living in long-term facilities participated in this study. Body composition was assessed by body mass index (BMI) and bioimpedance: visceral fat level (VFL), total fat mass (FM), peripheral FM, and central FM. Cognitive functioning was assessed with the frontal assessment battery (FAB), mini--mental state examination (MMSE), and Montreal Cognitive Assessment (MoCA). Associations were examined between body composition and cognitive functioning by Spearman's correlation coefficient.

Results: Seventeen participants (29.3%) were classified with mild cognitive impairment and 41 (70.7%) without mild cognitive impairment according to the MMSE. The results showed that the participants had high BMI (mean 27.2±6.2 kg/m^2); according to the BMI cut-offs, 24 (41.4%) were overweight, 14 (24.1%) were obese class I, 3 (5.2%) were obese class II, and 1 (1.7%) were obese class III. The remaining participants (n=16, 27.6%) had healthy weight. In general, participants showed high values of VFL (mean: 13.8±3.9 cm^3) and normal FM (mean: 31.1±8.3%). Regarding associations between body composition and cognitive functioning, only VFL was significantly associated with worse results in FAB (Spearman's Rho=-0.282, p=0.037).

Conclusion: The prevalence of cognitive impairment was high, and most participants were overweight or obese. There were no associations between cognitive functioning and body composition, except between FAB and VFL. Future studies should explore the associations between body composition and cognitive functioning in a large sample.

Keywords: Cognition; Fat Mass; Long-term Care Facilities; Obesity; Older Adults.

Funding

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HEALTH-RELATED PHYSICAL FITNESS AND PHYSICAL ACTIVITY IN ADULTS WHO ARE BLIND

Abstract ID 7820

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ABSTRACT

Objective: The main purpose of this study was to investigate the health-related physical fitness of adults who are blind and its association with physical activity behaviour.

Methods: Sixty-seven volunteers (47.5±11.3 years) who were legally blind were evaluated on physical activity and physical fitness. Physical activity was assessed with accelerometers, and physical fitness (muscular strength, aerobic endurance, flexibility and balance) was evaluated with specific field tests. Independent sample *t*-tests were used for comparing variables between gender. The relation between physical activity and physical fitness was analyzed using linear regression models.

Results: Men had higher handgrip strength ($p<0.001$) and better aerobic endurance ($p=0.017$) than women, but women showed better flexibility scores than men ($p=0.002$). In general, participants had low levels of aerobic endurance and poor leg flexibility. After adjusting for gender and age, (i) balance was positively associated with total physical activity, and (ii) handgrip strength was positively associated with time spent on moderate to vigorous physical activity, physical activity intensity (counts per min), and number of steps.

Conclusion: Physical fitness of people who are blind is relatively low and the performance in some of its components (strength and balance) is associated with the levels of physical activity. Exercise programs for adults with visual impairments should be encouraged for promoting physical fitness and health.

Keywords: Accelerometry; Disability; Visual Impairment.

PREDICTORS OF MEDICATION THERAPY MANAGEMENT ABILITY BY COMMUNITY-DWELLING ELDER

Abstract ID 7822

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ABSTRACT

Objective: To identify and characterize the main difficulties, as well as the predictors of loss of medication therapy management functional ability by elder.

Method: Cross-sectional study. Portuguese versions of DRUGS-PT and SMAT-PT[1,2] were applied into a sample of 207 community-dwelling elder living in Alentejo region. Data collection was performed by interview in community pharmacies and recreational day centers. A logistic regression was carried out to analyze the predictors.

Results: The elderly evaluated showed a high ability to manage their medicines, however, it was found that in any score other than the maximum (even if high), there are already difficulties to develop the activity. The sample studied showed that it was easier to manage the real therapeutic regimen (routine information) than a simulated therapeutic regimen (new information), although the simulation was previously presented and explained. According to the logistic regression model applied, it was found (ROC≈90%) that the main predictor of the progression of the inability to manage the medication was cognitive function, both in the parameters evaluated by the MMSE, and in parameters evaluated by the clock test, indicating that the impairment of the ability to read, indicate and interpret the time is an error factor in the task of managing and taking medications.

Conclusion: It is expected that improvements in the performance of the elderly in medication management can be enhanced through the adoption of support measures, human or technological. This support should constitute a transdisciplinary part of the patient care pathway.

Keywords: Aged; Functional Ability; Geriatric Assessment; Medication Therapy Management.

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GAME LOCATION EFFECT ON THE VARIABILITY OF INDIVIDUAL PLAYER'S PERFORMANCE IN THE NBA

Abstract ID 7824

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ABSTRACT

Objective: The aim of this study was to identify the effect of game location on the variability of individual player's performance during NBA games.

Methods: The sample comprised all the 1230 games from 2018/2019 NBA regular season and consisted of individual players indicators, normalized by 100 ball possessions. A two--step clusters analysis was performed to organize players in similar groups based in height, weight and experience. The coefficient of variation was calculated for every game-related statistic of players that played in all the game periods (from 1st to 4th). These values were then log transformed to ensure a normal data distribution. A *t*-test for independent samples was used to compare the variation of all the game-related statistics when playing at home or away and divided by clusters grouping.

Results: The clustering process produced three groups based in height and weight and six groups when experience was considered. The groups with higher height and weight presented significant variations of defensive rebounds and turnovers in away games and of points scored at home. Low experience groups showed significant differences mostly in away games (assists, field-goals made, field-goal attempts) but also at home (points scored). High experience groups exhibited significant differences predominantly at home (points scored, defensive rebounds, turnovers) but also in away games (points scored).

Conclusion: Game location seems to affect the regularity of individual player's performance, particularly when we consider player experience. Low experienced players showed more variability in away games, whereas the most experienced presented more variability at home.

Keywords: Basketball; Game Location; Variability; Performance Analysis.

MERCURY LEVELS IN HUMANS AND THEIR PETS

Abstract ID 7828

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ABSTRACT

Objective: This work aims to evaluate the levels of mercury in humans and their respective pets, and to validate the use of pets' hair as a noninvasive matrix to quantify mercury exposure.

Methods: Total mercury was quantified by CV-AAS in paired pet blood and hair (43 dogs, 17 cats) samples, as well as in the owners' hair samples. Additionally, commercially available dry pet food was also analyzed, in order to investigate dietary contribution to Hg burdens.

Results: The levels of mercury varied between 11-660 ng/g in dog's hair and bellow detection limit up to 21.4 ng/g in dog's blood. In cats, it was possible to quantify mercury in all hair and blood samples ranging from 66 to 890 ng/g and 0.68 to 33.4 ng/g, respectively. The concentrations of Hg in blood correlated with those in hair for both pets. For human hair, mercury concentrations ranged between 378 to 3820 ng/g. In general, the levels of mercury in pets' hair were higher than in blood. Moreover, the mercury levels in human hair were always higher than the levels of their respective pets. However, no significant correlations ($p>0.05$) were found between mercury levels in cats, dogs and their owners. The Hg in dogs' food presented, on average, higher concentration than cats' food.

Conclusion: Despite attaining validation of pets' hair as a non-invasive matrix for mercury exposure, its use as a surrogate of the owners' exposure could not, at this point, be validated.

Keywords: Blood; Hair; Pet Food; Portugal; Sentinel.

INSTRUCTIONAL FEEDBACK EFFECTS ON YOUTH FOOTBALL PLAYERS BEHAVIOR DURING SMALL-SIDED GAMES

Abstract ID 7831

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ABSTRACT

Objective: The aim of this study was to explore how different instructional feedback information, provided by a coach during a football small sided game (SSG) situation, influenced young players behavior during practice.

Methods: Three different SSG, played in a 30x40 m pitch for 6 minutes each with 5 players--a-side, including goalkeepers, were promoted during a U13 football teams' practice. The 3 instructional conditions, played randomly in every practice were: no instruction, where a coach was present, but no instruction was provided to players; passing instruction, where the coach encourage players to pass the ball; shooting instruction, where the coach asked to players to shot at the goal. Players' displacement was captured by individual GPS units and a video notational system was used to capture players' technical actions – passes, dribbles, shots. By merging both sources of information, the spatiotemporal information of the technical actions was computed.

Results: With generally small effects, results showed a trend for a higher number of actions in both the passing and shooting instruction conditions, compared to the no instruction. Players shot more, closer to the goal and within a closer range of the opponents in the shooting condition. In the passing condition players passed more overall and more forward passes.

Conclusion: Results indicate an influence of coaches' instructions over players behavior during SSG practice. These instructions seem to demote players from an exploratory behavior during practice.

Keywords: Association Football; Youth Football; GPS; Performance Analysis; Multidimensional Performance Indicators.

AIDS KNOWLEDGE AMONG UNIVERSITY STUDENTS AT THE SOUTH OF PORTUGAL

Abstract ID 7833

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ABSTRACT

Objective: To evaluate AIDS Knowledge among students from a Portuguese university.

Methods: A quantitative, descriptive and cross-sectional study was performed. A convenience sample of 240 students in university residences was recruit for this study from March to July 2018. Students were informed about voluntary participation and that data would be kept anonymous. The study was approved by the University Ethical Committee [registration 13009]. A questionnaire, with two sections, consider: a) sociodemographic variables and b) the AIDS Knowledge Zimet scale, with 22-items. Comparisons between categorial variables (eg. sex, course type and year) were analyzed with chi-square tests.

Results: On the AIDS Knowledge questionnaire, participants averaged 17.2 (±4.3) items correct of a 22 (78.2% correct). An item-by-item analysis revealed a fairly widespread misconceptions regarding to: blood donation (52.5% knew that transmission is extremely unlikely to occur through this process) and blood transfusion (52.1% knew that there was no high risk to get infection). In addition, 46.3% students did not know that people with AIDS will not die from this disease, and finally 15% did not know that a person can be infected with HIV and spread the virus without being sick from AIDS. The chi-square analysis indicated that freshman and sophomore students have less knowledge than seniors on the last years.

Conclusion: The results reinforce the importance and the need for more education on sexually transmitted diseases in the early years of college.

Keywords: HIV; Knowledge; Residents; University Students.

THE EFFECTIVENESS OF THE OPTIMISTIC STRESS MANAGEMENT PROGRAM WITH NURSING PROFESSIONALS

Abstract ID 7834

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ABSTRACT

Objective: Occupational stress has been considered a serious public health problem, especially in the case of the nursing profession, with considerable consequences on the individual, on the quality of his work and on the associated economic costs. Although the topic stress has become an important field of research, experimental studies on stress management strategies are rather scarce, especially in the case of the so-called risk professions, like nursing.

Methods: The present study applied a cognitive-behavioral training program, based on Optimistic Stress Management Program (Reschke & Schröder, 2010) to a sample of nursing professionals (n=4). Intervention was applied based on a multiple baseline design. Evaluation of results emphasizes an evaluation of physiological, cognitive and emotional symptoms of stress.

Results: The main results show different levels of stress reduction, as well as an improvement of the number and efficacy of the coping skills of the participants.

Conclusion: The applied program seems to be able to reduce stress. Next steps, in the development of this program includes the development of a online version of the program.

Keywords: Occupational Stress; Stress in Nurses; Optimistic Stress Management Program.

ATTITUDES TOWARD BIKE QUOTIDIAN UTILITARIAN USE: TOOL DEVELOPMENT

Abstract ID 8888

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ABSTRACT

Objective: To describe the development of an instrument to measure attitudes toward bike quotidian utilitarian use.

Methods: The tool was developed supported by focus group, where participants are 35 university students, organized by five groups of 5-7 elements. Students discuss the reasons why people use or don't use the bicycle daily from home to work. More than hundred sentences where collected. After removing redundancies, 47 statements were found. Subjected to partner analysis, the pool was reduced to 25 statements.

Results: A pre-test was applied to 10 students, following a cognitive debriefing. The instrument was feasible with a mean completion time of 4 minutes The Portuguese version was then tested for reliability. The instrument was applied on the street, considering 301 persons who agree to participate, giving oral permission. Factorial Analysis of Principal Components was developed, applying varimax rotation and organizing four factors, explaining 50,171 of variance. The final instrument has 15 items. Four items are formulated positively, and eleven must be reversed. Reliability statistics exhibits an alpha Cronbach's coefficient of 0.665. Moreover, items showed item-total correlation scores between 0.069 and 0.409.

Conclusion: The investigation indicate that the tool can measure the attitudes toward bike use. However, others development must be realized to enhance reliability and to test validity.

Keywords: Bicycle; Validation; Health Behavior; Environment; Environment and Public Health.

INFACT: STRENGTHENING PUBLIC HEALTH INFORMATION WORKFORCE IN EUROPE

Abstract ID 9998

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ABSTRACT

Objectives: The globalisation of the world economies has increase the need for more global health approaches that require sophisticated and sustainable Health Information (HI) systems, and the development of new technologies. These new technologies require skilled professionals to manage public health information in most efficient ways. However, currently large inequalities on availability and training of qualified professionals exist in Europe.

Methods: In order to set up a sustainable European Union HI training program, core modules need to be selected to provide adequate training to health professionals across Europe. This study combined a scoping review on existing HI capacity building programmes and a focus-group with European Experts aimed at identifying the main educational components required to train a HI professional. Based on these results a baseline capacity HI training programme for public health professionals will be proposed.

Results: The development of HI capacities is often done through multiple and sequential interventions, which are adapted to the needs, conditions and resources available within each HI system. The proposed course consists of a five virtual sessions (from data collection to Data protection/GDPR). This include theoretical and practical classes, group work among trainees and discussion of practical cases and projects on HIS in which trainees and trainers are involved.

Conclusion: There is a need for qualified skilled professionals in HI taking into account a changing global environment. Most of HI capacity building programmes are yet to reach maturity, and this proposal is now being tested at the 1st European School on Health Information.

Keywords: Capacity Building; Europe; Health Information Systems; Population Health.

ADVANCING HEALTH THROUGH HUMAN IMMUNOLOGY

Abstract ID: 7739

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ABSTRACT

Objective: Using the ultimate disease model: the Human, my lab aims at understanding tissue- and cell-specific factors controlling the induction of protective versus pathogenic immunity in order to manipulate them therapeutically in vaccine development and to treat chronic inflammatory and infectious diseases.

Methods: Animal models have been the gold standard for advancing vaccine candidates and immunotherapeutics. However, candidate immunotherapeutics often fail in clinical trials as in animal models fail to recapitulate the intricacies of human disease and are often incapable of predicting human immune responses. While deep physiological understanding is required to identify the contextual cues underpinning immune functional diversity, the cellular and molecular biology approaches allows us to identify the molecular mechanisms of disease and identify efficacious molecular targets. We integrate patient-centered research and a mechanism-driven development of biologicals at the interface of immunology, clinical research and biotechnology. Our research program fosters "horizontal" integration of information and advances between immunological and affiliated disciplines (cellular biology, infection cellular mechanisms of disease and pharmacology), and "vertical" integration between fundamental scientists and clinicians/clinical researchers.

Results and Conclusion: So far, our research has provided valuable insights how the expression of tissue-sensors enables to regulate T cell function from protective to dysregulated, in a tissue and context specific manner.

Keywords: Human Immunology; Tissue-specific Immune Mechanisms; Biomarkers of Chronic Disease and Immune Protection; Therapeutic Targets.

1ST STAGE OF RADIAL STUDY: ENHANCING CLINICAL DIAGNOSTICS IN RHEUMATOLOGY USING ULTRASONOGRAPHY

Abstract ID 7786

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ABSTRACT

Objectives: Very few recommendations propose how to integrate ultrasonography in the rheumatologic clinical practice and they are limited to a couple of pathologies. A collaborative initiative between the ultrasound Study Group of the Italian Society of Rheumatology and Portuguese ultrasonographers has the objective of elaborating a clinical and ultrasonographic algorithm and evaluate the performance of this composite approach (clinical, laboratory and ultrasound data) in the differential diagnosis among the main inflammatory arthropathies.

Methods: A systematic literature review was performed to develop a first set of statements, subsequently modified according to ultrasound expert opinions. Six web-based platform surveys (1000minds), divided by pathology, were submitted to all the members of the ultrasound study group. Every survey was composed of short clinical scenarios based on different variables: age, gender, current symptoms, symptom duration, number of involved joints, RF/ACPA serology and acute-phase reactants. The results retrieved were used to rank the different variables into a flow-chart, constructing a diagnostic algorithm.

A multi-centre, international, mixed design (retrospective, cross-sectional, prospective) diagnostic accuracy study is being used to evaluate the algorithm.

Results: A clinical and ultrasound algorithm was created, encompassing 6 main rheumatology pathologies: rheumatoid arthritis, psoriatic arthritis, gout, CPPD, polymyalgia rheumatic and osteoarthritis. A clinical and ultrasonography registry was created for data input, and progress is ensuing to collect data in participating centres in Italy and Portugal.

Conclusion: This study will allow better integration of ultrasonography data into the diagnosis of rheumatic diseases with the use of a novel algorithm.

Keywords: Ultrasonography; Algorithm; Rheumatology; Registry; Diagnosis.

CARDIAC REHABILITATION: THE IMPACT OF HIGH INTENSITY INTERVAL TRAINING VS MODERATE CONTINUOUS TRAINING IN PHASE III – PRELIMINARY RESULTS

Abstract ID 7813

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ABSTRACT

Objective: To compare the effect of high-intensity interval training (HIIT) and moderate--intensity continuous training (MICT) on cardiovascular diseases main risk factors in patients with coronary artery disease (CAD) enrolled in cardiac rehabilitation phase III.

Methods: Fourteen stable CAD-patients were randomly selected for supervised treadmill exercise, either at high-intensity [four, four-minute 85%-95% followed by one-minute active recovery at 70% of maximal heart rate (HRmax)] or moderate-intensity (70%-75% of HRmax), three times a week for six weeks. Participants were assessed for body composition, sedentary behavior, cardiorespiratory fitness and biochemical markers. Differences between pre- and post-interventions were tested through Cohen's d effect size (90% confidence intervals).

Results: Both interventions showed improvements in all domains. However, the training-induced adaptation in HIIT was higher than in MICT. The HIIT group showed a moderate effect on waist circumference (d=0.6), and insulin (d=0.6), a large effect on sedentary behavior (d=1.1) and triglycerides (d=1.0), cardiorespiratory fitness and total cholesterol (d=1.2 and d=1.2, respectively). While MICT group showed a moderate effect on sedentary behavior (d=0.9), and a large effect on cardiorespiratory fitness (d=1.0) triglycerides (d=1.0) and total cholesterol (d=1.0).

Conclusion: This study results, although being preliminary, reinforce the effectiveness of HIIT exercise for CAD-patients rehabilitation. Moreover, our results show that a short-time intervention based on HIIT or MICT exercise promote beneficial effects on cardiovascular diseases main risk factors.

Keywords: Cardiovascular Diseases; Coronary Artery Disease; Exercise-based; Intensity training; Secondary prevention.

Funding

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CAN PRIMARY HEALTHCARE FOR LOW BACK PAIN BENEFIT FROM A RISK-STRATIFIED MODEL OF CARE?

Abstract 7821

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ABSTRACT

Objective: To compare the effectiveness of usual care with a stratified model of care (SPLIT) for reducing disability of patients with low back pain (LBP) in primary healthcare.

Methods: A controlled before-after study comprising two sequential cohorts of patients with LBP was conducted in 7 primary healthcare centers. The first cohort evaluated the clinical results of current practice, while in the second cohort SPLIT was implemented. SPLIT used a risk-stratification tool (SBST) to match patients to physiotherapy treatment according to their risk of persistent disabling LBP (low, medium or high risk). Outcomes were measured at 6-month follow-up and included disability (RMDQ,0-24), pain (NPRS, 0-10) and overall perceived effect of treatment (GBRS,-5 to 5). Recovery criteria were determined according to the minimal clinically important difference (MCID) established for RMDQ, NPRS and GBRS, and by the definition of persistent disabling LBP (RMDQ≥7).

Results: A sample of 289 patients with LBP (115 in usual care and 174 in SPLIT) were enrolled. At 6-month, 17.3% (SPLIT) and 53.8% (usual care) of patients had persistent disabling LBP. After adjustment, patients in the SPLIT cohort had a significantly lower probability of reporting RMDQ≥7 (OR:0.21[95%IC,0.12-0.40]), and significantly higher probability of obtaining an improvement above the MCID for RMDQ (OR:3.51[95%IC,1.95-6.34]) and GBRS (OR:2.43[95%IC,1.36-4.34]).

Conclusion: The implementation of SPLIT showed a reduction of almost 80% in the risk of patients to develop persistent disabling LBP at 6-month, compared with usual care. Future economic analysis will make it possible to verify whether this effectiveness was also reflected in lower costs.

Keywords: Family Practice; Models of Care; Patient Outcomes; Risk-stratification; STarT Back Screening Tool.

EFFECTS OF INTERVENTIONS INVOLVING MENTAL PRACTICES IN BODY AWARENESS AND VISUOSPATIAL NOTION OF POST-STROKE PATIENTS: SYSTEMATIC REVIEW

Abstract ID 7829

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ABSTRACT

Objective: To investigate and systematize the effects of interventions involving mental practice in body awareness and in the visuospatial notion of post-stroke patients.

Methods: We conducted a systematic review, searching electronic databases: PubMed, PEDRo, Science Direct, Web of Science, published between January 2000 and July 2019. We selected studies according to specified criteria, namely mental practice programs including motor practice, and of mental practice programs combined with additional motor practice. The level of evidence of each study was assessed and summarized the study elements.

Results: The included 21 randomized controlled trials were heterogeneous regarding participants, neurological characteristics, intervention protocols, and outcome measures. Several interventions used mental practices in stroke patient's rehabilitation: (1) action observation (n=7); (2) motor imagery (n=11); (3) body awareness therapy (n=3). All studies reported significant improvements in post-stroke patient's rehabilitation. One study found intervention`s positive effects on the visuospatial notion and five on interoceptive and exteroceptive body awareness.

Conclusion: The present study provided some evidence that mental practice including or combined with additional motor practice has positive effects on the visuospatial notion and body awareness in stroke patient's rehabilitation. Furthermore, revealed a lack of studies and of concise protocols on focusing interventions designed to improve either visuospatial notion or body awareness in stroke patient's rehabilitation.

Keywords: Stroke; Rehabilitation; Body-scheme; Body-image; Plasticity.

THE IMPLEMENTATION OF CHAIN AT NOVA MEDICAL SCHOOL

Abstract 7836

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ABSTRACT

Objectives: The Comprehensive Health Biobank, CHAIN, is a collaborative initiative led by CHRC and its main mission is to provide a supporting pillar for biomedical, clinical, epidemiological and translational research activities, in particular the ones carried out by CHRC through its five thematic lines to strengthen research quality and encourage national and international research collaborations.

Methods: Biobanks are considered key instrumental infrastructures in supporting biomedical and epidemiological research and their real value lies in the number of high-quality biospecimens collected with their respective clinical data and made available for research. Biospecimens are obtained, with informed consent, during study participant recruitment, clinic visits, diagnostic/surgical procedures and autopsies from both healthy people and those with disease conditions. Collection and storage of the biospecimens and respective data at CHAIN is approved by the NMS ethics committee and is aligned with the European GDPR. CHAIN´s main asset is its vast collection of blood, DNA and serum from national cohorts e.g. EpiReumaPt, human bone collection with clinical information, serology test samples through its collaborators at UNL (COVID survey) and SARS-CoV-2 pregnant project.

Its operations involve a range of linked processes: participant consent; ethical and scientific committee approvals; collection of biospecimens along with respective clinical data; SOP, access policy; processing and storage of biospecimens and data, quality control, and finally release.

Conclusion: CHAIN is an asset to the national research community and a fundamental supporting pillar for the advancement of epidemiological and biomedical research in the area of health promotion and chronic diseases.

Keywords: Biobank; Biospecimen Collection; Clinical Data; Biospecimen Storage; Biomedical Research.

USING TRACKING DATA TO MEASURE THE EXPOSURE TO INTERPERSONAL CONTACT: A TOOL TO MANAGE THE IMPACT OF THE COVID-19 QUARANTINE IN SPORT ENVIRONMENTS

Abstract ID 7731

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ABSTRACT

Objective: During the COVID-19 pandemic, the temporary closure of physical activity and sports facilities, and the generalized cancellation or postponement of sports events at international, regional, and national levels had a massive impact on social and economic development. In the current study, we explored tracking data during a football match to analyze if football can be considered as an activity with high exposure to interpersonal contact, by calculating two measures of respiratory exposure through interpersonal contact during a football match.

Methods: The dynamic tracking positioning of all players and referees during one international football match was analyzed. For each individual, two measures of respiratory exposure were calculated, based on the 2m interpersonal distance recommendations for contact tracing for COVID-19 control.

Results: Overall, individuals spent a median of 0:12 mm:ss (IQR=0:45 mm:ss) exposed to interpersonal contact of fewer than 2m from others. The highest value of exposure observed between players was 6:35 mm:ss. For referees, the time of exposure was well distributed among both teams. The referee presented a median of 2:19 mm:ss (IQR=2:46 mm:ss) of exposure to contact with others, and 1:55 mm:ss (IQR=3:01 mm:ss) in exposing the others to contact with himself. The assistant referees presented very low values of time of exposure to interpersonal contact.

Conclusion: The results of the present study revealed that football does not seem to be an activity with high exposure to interpersonal contact for SARS-CoV-2 respiratory transmission. The measures of exposure can be used to the prompt identification of contacts of a suspected or confirmed case of COVID-19 during a football match and a training session with different levels of risk exposure, and thus, to intervene and interrupt further onward SARS-CoV-2 transmission.

Keywords: Positional Data; Tracking Systems; COVID-19; SARS-CoV-2; Pandemic; Social Distance.

PROFILES OF HEALTHCARE SERVICES UTILIZATION OF PEOPLE WITH KNEE OSTEOARTHRITIS IN PORTUGAL: RESULTS FROM A NATIONWIDE POPULATION-BASED STUDY

Abstract ID 7797

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ABSTRACT

Background: Knee osteoarthritis (K-OA) is a leading cause of disability worldwide, which is rising in prevalence. Currently, the management of people with K-OA seems to be heterogeneous, high-cost and often not based on current best evidence. In Portugal, there is no data about healthcare utilisation by people with K-OA.

Objectives: To explore profiles of healthcare services utilisation by people with K-OA and to analyse their socio-demographic and clinical determinants.

Methods: With a cross-sectional design, we analysed a sample of 978 participants diagnosed with K-OA from the population-based study EpiReumaPt. Data was collected based on a structured interview and the diagnosis validated by Rheumatologists. With the Two-step Cluster procedure, we identified different profiles of healthcare utilisation according to the services most used by patients with K-OA. Then, we analysed the determinants of each profile, with multinomial logistic regression, according to socio-demographic and clinical variables.

Main Results: We found three profiles: 1) "High Healthcare Users"; 2) "General Practitioner Users"; 3) "Low Healthcare Users" based on general practitioner, orthopaedic surgeon and physiotherapy visits and hospitalisations. Age, geographic location, employment status, healthcare insurance showed significant associations with higher use of healthcare ($p<0.05$) as well as the number of comorbidities, physical function, health-related quality of life, anxiety and physical exercise.

Conclusion: In Portugal, healthcare utilisation is driven by sociodemographic determinants which suggest the existence of variability in management of K-OA, regardless of clinical variables, and inequities in access to healthcare. Future studies should address the need for strategies to improve quality of care and knowledge translation at a national level.

Keywords: Delivery of Healthcare; Osteoarthritis; Socioeconomic Factors; Health Services.

MoCA VS MMSE 35 ON FIBROMYALGIA PATIENTS: DUAL-TASK TESTS FOR DETECTING COGNITIVE IMPAIRMENT

Abstract ID 7807

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ABSTRACT

Objective: The aim of the present study is to analyze the differences in MMSE (35 points version) and MoCA results in fibromyalgia patients and to study the relationship of the results in both tests with physical and cognitive performance in dual tasks conditions.

Methods: A total of 36 women with fibromyalgia participated in the study. Participants completed the Spanish version of the Fibromyalgia Impact Questionnaire (FIQ). After that, trained research staff administered the MoCA and MMSE 35. In addition, all the participants performed the physical fitness tests TUG under dual-task conditions. The variable TUG cognitive performance was calculated by dividing the number of cognitive hits (correct answers in the subtractions) between the seconds spent on the dual-task test. Furthermore, Pearson´s rho correlation analyses were used to evaluate the relationship between cognitive tests performance and the cognitive performance obtained on TUG under dual-task conditions. In addition, Spearman´s rho correlation analyses were used to evaluate the relationship between cognitive tests performance and TUG and TUG Dual--task performance.

Results: The test and retest results of cognitive tests (MMSE 35 and MoCA) were significantly related to TUG Dual-task cognitive performance.

Conclusion: The MoCA may be a more sensitive cognitive screening tool than the MMSE for patients with fibromyalgia. The results of both cognitive tests are correlated with cognitive performance on dual-task TUG test. In this way, cognitive performance on a dual--task test could be used to support the diagnosis of cognitive impairment in patients with fibromyalgia.

Keywords: Fibromyalgia; Dual Task; MMSE; MoCA; TUG.

ESACA ALGORITHM FOR FALL RISK SCREENING, ASSESSMENT AND INTERVENTION IN COMMUNITY-DWELLING OLDER ADULTS

Abstract ID 7814

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ABSTRACT

Objective: ESACA study aimed to determine the priority and sequence of fall risk assessment tests to identify not only older adults at risk of falling but also the risk factors determining the high-low risk, and to provide recommendation for interventions.

Methods: The study involved a cross-sectional survey assessing intrinsic and exposure falls risk factors (including health conditions, physical fitness, body composition, physical activity and environmental hazards) and retrospective falls, as well as a prospective follow-up survey assessing falls. Participants were 500 community-dwelling Portuguese older adults (≥65 years). Data was reported based upon descriptive statistics, binary logistic regression, ROC curve and ESACA algorithm cross-validity.

Results: The selected tests/variables to include in the algorithm and respective assessment sequence were: 1st retrospective falls (≥2), 2nd chronic health conditions number (≥3), 3rd multidimensional balance assessed by Fullerton Advanced Balance Scale (≤31 points), 4th fat body mass (≥39%), 5th environmental hazards number (≥5), 6_{th} rest period (≥4.5 hour/day), 7th metabolic expenditure (≤2300 MET/week), $p<0.05$. ESACA algorithm and cross-validation AUCs were 0.710 (95% CI: 0.663-0.756) and 0.659 (95% CI: 0.610-0.708), respectively.

Conclusion: This study outcomes suggest that previous falls and health conditions are the main factors which should be considered to assess older adults at high risk of falling. However, the modifiable risk factors are the ones that shall be focused on falls prevention interventions to be effective. Fall prevention programs shall attend informed older adults and take into account the above factors that most contribute to the individual risk of falling, as well as their relative weights and their distance from low-risk values.

Keywords: Fall Prevention; Risk Factors for Falls; High-low Risk of Falling; Recommendations; Aging.

IMPLEMENTATION OF ANTIBIOTIC STEWARDSHIP SUPPORTED BY A CLINICAL DECISION SYSTEM AT A HOSPITAL CRITICAL CARE UNIT

Abstract 9997

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ABSTRACT

Objectives: Fighting antimicrobial resistance is a health top priority. Interventions aimed to reduce antimicrobial resistance, such as antibiotic stewardship programs, must be implemented. In order to be effective, those interventions, and the implementation process, should be matched with social-cultural context. The complexity of antibiotic stewardship programs can no longer be developed without considering organizational and information systems. To support antibiotic stewardship programs through the co-design and implementation, in collaboration with healthcare workers, of a decision-support system to monitor antibiotic resistance and improve antibiotic prescription.

Methods: The surveillance and clinical decision-support system was designed and implemented in three Portuguese hospitals (Critical Care Units), using a participative approach between researchers and healthcare workers following the Design Science Research Methodology and Antibiotic Stewardship.

Results: Based on healthcare workers' requirements, we developed HAITooL, a real-time surveillance and clinical decision-support system that integrates visualizations of patient, microbiology, and pharmacy data, facilitating clinical decision. HAITooL monitors antibiotic usage, rates of antibiotic resistant bacteria and allows early identification of outbreaks. It is a clinical decision-support tool that integrates evidence-based algorithms to support proper antibiotic prescription. HAITooL was considered very valuable to support monitoring of antibiotic resistant infections and an important tool for antibiotic stewardship program's sustainability.

Conclusion: Antibiotic stewardship program implementation can be leveraged through a surveillance and clinical decision-support system such as HAITooL that allows antibiotic resistance monitoring and supports antibiotic prescription, once is adapted to the context and specific needs of healthcare workers and hospitals.

Keywords: Antimicrobial Resistance; Antibiotic Stewardship Programs; Clinical Decision-Support System; Critical Care Unit; Implementation; Health Information systems.

A HOME-BASED EHEALTH INTERVENTION FOR ELDERLY POPULATION WITH FOOD INSECURITY: FINDINGS FROM A FEASIBILITY AND ACCEPTABILITY PILOT STUDY

Abstract ID 7738

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ABSTRACT

Objective: To explore feasibility and acceptability of a home-based eHealth intervention to elderly people with food insecurity.

Methods: A pilot quasi-experimental pre-test post-test design was conducted. A convenience sample of food insecure elderly subjects was recruited in 17 primary healthcare centers. The intervention was based on an interactive TV-app aiming to promote healthy lifestyle behaviors over 6 months. The primary outcomes were feasibility (self-reported usage and interest in eHealth) and acceptability (affective attitude, burden, ethically, perceived effectiveness, and self-efficacy) evaluated with a 16-question questionnaire (7-point Likert scale, 1[strongly negative/completely disagree]-7[strongly positive/completely agree]) at baseline and 6-month follow-up. Changes in clinical outcomes food security (HFIS), quality of life (EQ-5D-3L), physical function (HAQ) and adherence to Mediterranean diet (MD) were explored.

Results: A sample of 31 elderly subjects was enrolled and there were no losses in follow--up. Ten participants had self-reported low-usage of TV-app. At 6-month, participants were significantly more interested in eHealth for food insecurity (baseline median[IQR]= 1.0[3.0]; 6-month, 5.0[5.0];p=0.012) and for other purposes (1.0[2.0];6.0[2.0];p=0.026). High levels of acceptability were found both before (median[IQR] range: 7.0[2.0] to 7.0[0.0]) and after the intervention (5.0[2.0] to 7.0[2.0]), with no changes for most constructs. After 6 months, food insecurity was reduced in 40.0% of the participants (p=0.010) and physical function improved (HAQ mean difference[SD]=-0.22[0.38];p=0.010). There were no differences in EQ-5D-3L neither in MD adherence.

Conclusion: The eHealth intervention demonstrated to be feasible and highly acceptable which supports a future full-scale trial. Moreover, it showed promising results on improving key clinical outcomes.

Keywords: Cognitive Behavioral Strategy; Health Innovation; Multidisciplinary Program; Older People; TV-app.

DIMENSIONS AND METHODS USED TO ASSESS HOME TELEMONITORING SCALABILITY: A SYSTEMATIC REVIEW

Abstract ID 7746

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ABSTRACT

Objective: COVID-19 accelerated adoption and efficient investment in telehealth services. The objective is to identify the dimensions and methods used in peer-reviewed studies, under real-life conditions, to assess the potential to scale home telemonitoring-based interventions into mainstream care delivery.

Methods: Following "PICO" framework and protocol, studies from 2000 to 2020 were identified in multiple databases and screened by two reviewers. We conducted a narrative analysis to the final 13 articles to identify themes, patterns, and methods supporting scalability assessment.

Results: One study concluded that the intervention should not be expanded and two concluded that their interventions were able to be expanded. Six out of 13 studies were experimental, while the other seven were observational. Two studies were classified as very good since they were based on large sample randomized controlled trials, and two were classified as good due to work conduced with a small sample randomized controlled trial. Two studies were classified as poor because they consisted of non-controlled clinical series or descriptive studies. The three most studied conditions were: cardiovascular diseases (4), acute and/or chronic conditions (2), and chronic obstructive pulmonary diseases (2). The outcomes assessed were related to accountability (6), effectiveness (12), implementation (1), quality of life (4), and satisfaction with the service (7).

Conclusion: There is no agreement in the minimum number of dimensions that should be evaluated to support the decision to scale-up. Different methods are used to assess the same dimension, which might lead to different interpretations and acceptance thresholds.

Keywords: Pilot Projects; Practicability; Technology Assessment; Telehealth; Telemedicine.

ARTIFICIAL INTELLIGENCE AND DECISION-MAKING SUPPORT: MACHINE LEARNING PREDICTION OF MORTALITY IN ACUTE MYOCARDIAL INFARCTION

Abstract ID 7823

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ABSTRACT

Objective: Acute myocardial infarction (AMI) is the main cause of death in Portugal and globally. In this sense, the present investigation intended to create a model based on machine learning for predictive analysis of mortality in patients with AMI upon admission and compare the results with another model developed in 2016.

Methods: Modulation of a predictive model for mortality in AMI in a Portuguese hospital between 2013 and 2015 using various statistical modulation techniques through machine learning. Data source: high-summaries database with episodes of discharge patients: administrative and laboratory data, whose main diagnosis was AMI.

Results: Random forest is more suitable than the other classification models (kNN, Neural Network, CN2 rule inducer, SVM and Naïve Bayes) with a classification accuracy of 0.930, a precision of 0.926 and a good discriminatory capacity with area under the ROC curve of 0.892 vs 0.782 (validation model) and 0.871 (recalibration model) at the anterior model. Variables such as older age, number of comorbidities, cardiac dysrhythmia, pulmonary edema, eosinophilia, INR and troponin, lymphocytes and neutrophils above the reference range had shown to be good mortality predictors.

Conclusions: Integration of artificial intelligence (AI) and machine learning with clinical decision-making has the potential to transform care. When incorporated into a healthcare organization's information system, they aim to make clinical practice more efficient, faster, more personalized and more effective. In the era of Big Data, AI emerges as an alternative to traditional models, since it has the potential to explore large amounts of information automatically and systematically. In this case, the model created has better results than the previous model. AI and machine learning, when applied, improve screening and early detection, diagnosis, treatment, treatment management, patient security and outcomes improvement.

Keywords: Big Data; Cardiovascular Diseases; Decision Support Systems; Intelligent Systems; Predictive Models.

LEAVES: OTIMIZING THE GRIEF PROCESS OF OLDER ADULTS THAT HAVE LOST THEIR SPOUSE VIA BLENDED, ONLINE THERAPY

Abstract ID 7825

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ABSTRACT

Objective: Loss of a partner is a frequent occurrence in later life. While most older adults successfully process this loss, a significant proportion (25,4%) is unable to do recover, leading to prolonged grief (PG). PG is a condition where grief symptoms occur longer than 6 months after the loss, which can result in many mental and physical health problems, like poor sleep, cardiovascular problems, depression, loneliness and suicidal tendencies. LEAVES, an online grief program, aims at preventing and treating PG, and to ultimately provide older mourners' with an active, meaningful and dignified life.

Methods: LEAVES will cater to secondary end-users (family, informal caregivers) by reducing stress. Older adults, informal caregivers and relevant care professionals (total n= 110) will, together with the project team, develop the LEAVES service model, and, through iterative design and development, will optimize its usability and user experience. LEAVES helps older adults to process the loss of a partner in an empathic and caring online environment, through the online adaptation of grief program Livia, RRD's virtual agent platform (TRL-7) and accessible front-end design.

Expected Results: This service is expected to detect persons at risk of prolonged grief and severe mental health symptoms, such as depression and anxiety symptoms, to uncover the negative trends of mourners' emotional life, and to act to counter this trend. The service relies on online treatment if possible but will be blended with telephone or face-to--face counselling when necessary.

Conclusion: The LEAVES service softens the mourning process, prevents depression or social isolation, strengthens widow(er)s resilience and wellbeing, and quickens a return to societal participation.

Keywords: Grief; Older Adults; Mental Health; dHealth.

USING A VIDEO-BASED MOBILE APP AS A SUPPORT SYSTEM FOR ELDERLY PEOPLE LIVING AT HOME

Abstract ID 7832

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ABSTRACT

Objective: To develop a mobile app for supporting the care of seniors living at home and evaluate its utility in promoting treatment adherence, health literacy, and prevention of falls.

Methods: Using Android Studio, we have developed a health-related, simple, and intuitive video-based app. To assess its utility, we'll recruit 25 seniors attending two primary care centers in Portimão, Portugal. Participants must have ≥65 years of age, own a smartphone/tablet, and be willing and consent to participate. Subjects will have access to the application for 4 weeks and will be evaluated at 3 different timepoints: before they have contact with the app, after using the app for a month, and 60 days after the last contact with the application. Participants will be asked about the app's usefulness for their health, the number of falls, and their quality of life, adherence to therapy, and health literacy perceptions.

Results: The app includes six short videos designed to motivate seniors, encourage the consumption of healthy food, improve the practice of physical exercise, prevent falls, stimulate cognitive exercise, and treatment adherence. This pilot study has already been submitted to the Ethics Committee and is expected to be implemented before the end of 2020.

Conclusion: Because the next generation of elderly is quite digitized, information and communication technologies could potentially be used as a health literacy tool to improve lifestyles and treatment adherence, and, perhaps, avoid admission to hospitals or long--term care facilities, hence easing the burden placed on the social and health systems.

Keywords: Mobile App; Treatment Adherence; Health Literacy.

PRIMARYCARE@COVID-19: A DIGITAL PLATFORM TO SUPPORT AND MONITOR CHRONIC PATIENTS

Abstract ID 9999

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ABSTRACT

Objectives: The COVID-19 pandemic is causing a set of disruptions, especially at the delivery of healthcare services. The pandemic has shown subsidiary health effects like, chronic care, surgeries, and deadlock in the other diseases treatment. A digital health platform (PrimaryCare@COVID-19) was implemented to be used by primary care physicians, and nurses, to address both chronic care and COVID-19-related patients at home or traveling. It has been piloted in three Health Centers at Lisbon-Health Region. This project was funded by the National Science Foundation to address Primary Care consultations and chronic care services shortage.

Methods: The clinical primary care processes were studied (with a set of interviews and focus groups) and the digital platform was implemented and tested using Design Science Research Methods.

Results: This project's innovative digital platform is already covering several dozens of chronic patients while at home. The health professionals (physicians/nurses) are able to safely and rigorously communicate with chronic patients and prescribe the required medicines, as well as inform them about the COVID-19 measures.

Conclusion: This eHealth Digital Platform is an opportunity to manage chronic care during epidemics, allowing to follow-up patients, preventing them from becoming uncontrolled and having to go to emergency. The digital platform uses smart algorithms to deal with both medication interactions and vital signs alerts while monitoring, chronic and COVID-19 infected, patients, allowing health professionals to remotely consult these patients at home/travelers (by default with phone, but also via digital videoconferencing) and manage all health information about patients in a secure way.

Keywords: Chronic Patients; COVID-19; Digital Health; Health Information Systems; Patients-Physicians Interactions; Primary Healthcare.