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Journal of Education, Technologies, and Health

Editorial | Editorial | Editorial

O presente número da Millenium - Journal of Education, Technologies, and Health desenvolve um variado conjunto de temas nas áreas da educação e intervenção social, saúde, agrária e gestão.

Assim, na secção educação aborda-se o tema do envelhecimento rápido da sociedade e do crescimento das demências. Apresenta-se a plataforma de treino cognitivo online primerCOG para o desenvolvimento de um conjunto de atividades cognitivas estimulantes para as pessoas idosas.

As competências de comunicação em estudantes de enfermagem dão mote ao primeiro artigo da secção saúde, explorando o contributo de algumas teorias e seus modelos na operacionalização do plano de formação graduada em enfermagem na Irlanda.

A idade avançada constitui-se como um dos fatores de risco da demência, desta forma, analisa-se na secção saúde, o papel do médico de família no diagnóstico e no seguimento desse tipo de doentes. O trabalho, realizado a partir da revisão teórica de artigos originais na área, conclui que os médicos e os profissionais dos Cuidados de Saúde Primários devem centrar a sua ação na avaliação inicial, no seguimento e orientação posterior do doente e respetivos familiares.

Um outro tema da área da saúde relaciona as doenças cardiovasculares com o género, identificando diferenças entre os géneros, a partir das características físicas e psicossociais que os diferenciam. O estudo apresenta ainda recomendações para os profissionais de saúde.

Na área da saúde, aborda-se também a prevenção de quebras cutâneas no idoso dependente e a aplicação da metodologia de Cuidar Humanitude, na medida em que se utilizem técnicas suaves no cuidar, e aquela ser mais efetiva no tratamento de idosos dependentes. Nesta, reflete-se igualmente sobre as competências dos enfermeiros para a prestação de ações paliativas em contexto hospitalar nas enfermarias de agudos. Encerra-se a área da saúde, analisando a doença de Hansen enquanto patologia infectocontagiosa endémica no Brasil, bem como formas clínicas, classificação operacional e grau de incapacidade dos pacientes.

Na secção agrária, aborda-se a caracterização sensorial e físico-química das compotas de frutos de S. Tomé e Príncipe. Por último, na área da gestão aborda-se a demência como sendo uma síndrome orgânica adquirida, geralmente crónica e caracterizada pela perda progressiva de capacidades cognitivas e funcionais e a consequente importância de respostas de apoio aos cuidadores desenvolvida, nesta caso, pelo Centro de Apoio ao Alzheimer de Viseu que tem tido uma intervenção ao longo do tempo, em diversas vertentes.

Os artigos da presente edição regular consubstanciam a missão da Millenium, e objetivam promover a disseminação dos contributos de investigadores nacionais e estrangeiros, aproximando por essa via a academia da sociedade civil / comunidade técnico-profissional, organizações e cidadão comum.

A Equipa Editorial
Madalena Cunha, José Luís Abrantes, Maria João Amante, José Paulo Lousado, Paula Correia

This issue of Millenium - Journal of Education, Technologies, and Health develops a diverse set of themes in the areas of education and social intervention, health, agrarian, and management.

Thus, the education section addresses the issue of the rapid aging of society and the growth of dementias. It shows the online cognitive training platform primerCOG to develop a set of stimulating cognitive activities for the elderly.

The communication skills in nursing students introduce the first article of the health section, exploring the contribution of some theories and their frameworks in the operationalization of the plan graduated in nursing in Ireland.

Older age is one of the risk factors for dementia. In this way, the role of the family doctor in the diagnosis and follow-up of this type of patients is analyzed in the health section. The paper, based on the theoretical review of original articles in the field, concludes that physicians and primary health care professionals should focus their action on the initial evaluation, follow-up and subsequent orientation of the patient and his or her family members.

Another issue in the health area relates cardiovascular diseases to gender, identifying differences between genders, based on the physical and psychosocial characteristics that differentiate them. The study also presents recommendations for health professionals.

In the health area, it is also addressed the prevention of skin breakdown in the elderly dependent and the application of the Care Humanity methodology, insofar as gentle techniques are used in care, and that is more effective in the treatment of dependent elderly. In this, it is also reflected on the competencies of nurses to provide palliative actions in a hospital setting in the acute care ward. The health area closes, analyzing Hansen's disease as an infectious contagious disease endemic in Brazil, as well as clinical forms, operational classification and degree of incapacity of the patients.

In the agrarian section, the sensorial and physicochemical characterization of fruit compotes from S. Tomé and Príncipe is discussed. Finally, in the management area, dementia is treated as an acquired organic syndrome, usually chronic and characterized by the progressive loss of cognitive and functional capacities and the consequent importance of support responses to caregivers developed, in this case, by the Support Center to the Alzheimer of Viseu that has had an intervention over time, in several aspects.

The articles of this regular edition embody the mission of Millenium and aim to promote the dissemination of the contributions of national and foreign researchers, bringing the academy of civil society / technical-professional community, organizations and ordinary citizens together.

The Editorial Board
Madalena Cunha, José Luís Abrantes, Maria João Amante, José Paulo Lousado, Paula Correia

Este número de Millenium - Revista de Educación, Tecnologías y Salud desarrolla un conjunto diverso de temas en las áreas de educación e intervención social, salud, agrario y de gestión.

Así, la sección de educación aborda la cuestión del rápido envejecimiento de la sociedad y el crecimiento de las demencias. Muestra la plataforma de formación cognitiva online primerCOG para desarrollar un conjunto de actividades cognitivas estimulantes para los ancianos.

Las habilidades de comunicación en los estudiantes de enfermería introducen el primer artículo de la sección de salud, explorando la contribución de algunas teorías y sus marcos en la operacionalización del plan graduado en enfermería en Irlanda.

La edad avanzada es uno de los factores de riesgo para la demencia. De esta manera, se analiza el papel del médico de familia en el diagnóstico y seguimiento de este tipo de pacientes en la sección de salud. El trabajo, basado en la revisión teórica de artículos originales en el campo, concluye que los médicos y los profesionales de atención primaria de salud deben centrar su acción en la evaluación inicial, el seguimiento y la posterior orientación del paciente y sus familiares.

Otro tema en el área de la salud relaciona las enfermedades cardiovasculares con el género, identificando diferencias entre géneros, en base a las características físicas y psicosociales que las diferencian. El estudio también presenta recomendaciones para profesionales de la salud.

En el área de salud se aborda también la prevención de la descomposición de la piel en los ancianos dependientes y la aplicación de la metodología Care Humanity, en la medida en que se utilizan técnicas suaves en la atención y que es más eficaz en el tratamiento de ancianos dependientes. En esto, también se refleja en las competencias de las enfermeras para realizar acciones paliativas en un hospital en la sala de cuidados agudos. El área sanitaria se cierra, analizando la enfermedad de Hansen como una enfermedad infecciosa contagiosa endémica en Brasil, así como las formas clínicas, la clasificación operativa y el grado de incapacidad de los pacientes.

En la sección agraria se discute la caracterización sensorial y fisicoquímica de las compotas de frutas de S. Tomé y Príncipe. Por último, en el área de manejo, la demencia se trata como un síndrome orgánico adquirido, generalmente crónico y caracterizado por la pérdida progresiva de capacidades cognitivas y funcionales y la consiguiente importancia de las respuestas de apoyo a los cuidadores desarrolladas, en este caso, por el Centro de Apoyo al Alzheimer de Viseu que ha tenido una intervención a lo largo del tiempo, en varios aspectos.

Los artículos de esta edición regular encarnan la misión de Millenium y tienen como objetivo promover la difusión de las contribuciones de investigadores nacionales y extranjeros, acercando la academia de la sociedad civil / comunidad técnico-profesional, organizaciones y ciudadanos comunes.

El Equipo Editorial
Madalena Cunha, José Luís Abrantes, Maria João Amante, José Paulo Lousado, Paula Correia

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INFLUÊNCIA DAS CARACTERÍSTICAS SOCIODEMOGRÁFICAS E DA OCUPAÇÃO DOS TEMPOS LIVRES NO DESEMPENHO NA PLATAFORMA DE TREINO COGNITIVO PRIMERCOG

THE INFLUENCE OF SOCIODEMOGRAPHIC CHARACTERISTICS AND LEISURE ACTIVITIES IN THE PERFORMANCE ON COGNITIVE TRAINING PLATFORM PRIMERCOG

INFLUENCIA DE LAS CARACTERÍSTICAS SOCIODEMOGRÁFICAS Y DE LAS ACTIVIDADES DE OCIO EN EL DESEMPEÑO EN LA PLATAFORMA DE ENTRENAMIENTO PRIMERCOG

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RESUMO

Introdução: A sociedade está a envelhecer rapidamente, consequentemente aumentando a prevalência de demências. Os défices cognitivos relacionam-se com inúmeras variáveis, sendo algumas delas apontadas como possíveis protetoras. Segundo a teoria da reserva cognitiva, a prática de atividades estimulantes ao longo da vida pode ter como efeito a diminuição do risco de demência. Neste contexto, a MediaPrimer está a desenvolver a plataforma de treino cognitivo *online* primerCOG, com um conjunto de onze atividades cognitivas estimulantes destinadas a seniores.

Objetivo: Analisar a influência das variáveis escolaridade e idade, e da ocupação dos tempos livres, no desempenho nas atividades do primerCOG.

Métodos: Investigação quantitativa não-experimental de carácter transversal. Amostra de 30 seniores cognitivamente saudáveis.

Resultados: Observaram-se associações positivas entre a escolaridade dos participantes e o nível máximo de desempenho em todas as atividades, verificando-se, por outro lado, uma associação negativa do desempenho na maioria das atividades com a idade dos participantes. Adicionalmente, verificou-se que os participantes que praticavam regularmente atividades de tempo livre cognitivamente estimulantes, tiveram melhores desempenhos nas atividades.

Conclusões: A confirmação das variáveis com influência no desempenho cognitivo em seniores cognitivamente saudáveis é útil para se compreender o desenvolvimento de demências. Futuramente será importante replicar o estudo com novas variáveis, como o número de horas diárias despendidas nas atividades ou o QI pré-mórbido do participante.

Palavras-Chave: Envelhecimento; Reserva Cognitiva; Défice Cognitivo; Treino Cognitivo

ABSTRACT

Introduction: Society is rapidly aging, and there is a consequent increase in the prevalence of dementia. Cognitive deficits are related to many variables, some of them are pointed out as possible protectors. According to cognitive reserve theory, practicing stimulating activities throughout life may lead to a decrease in the risk of dementia. In this context, MediaPrimer is developing primerCOG, an *online* platform for cognitive training, which includes eleven cognitive stimulating activities for seniors.

Objective: Evaluate the influence of variables age and education, and leisure activities, on maximum level achieved in primerCOG's activities.

Methods: Quantitative non-experimental and transversal design. Sample includes 30 cognitively healthy seniors.

Results: Positive associations were observed between the participants' level of education and the maximum level of performance in all activities. On the other hand, there was a negative association of performance in the majority of activities with the participants' age. Additionally, it was found that participants who regularly practiced cognitively stimulating leisure time activities performed better in activities.

Conclusions: Results confirm that some variables influence cognitive performance in cognitively healthy seniors, which may be useful to understand the development of dementia. In the future, it will be important to replicate the study with new variables, such as the number of hours spent per day in the activities or the participant's pre-morbid IQ.

Keywords: Aging; Cognitive Reserve; Cognitive Impairment; Cognitive Training

RESUMEN

Introducción: La sociedad está envejeciendo rápidamente, aumentando la prevalencia de las demencias. Los déficits cognitivos se relacionan con muchas variables, algunas de las cuales han sido identificados como potenciales protectores. De acuerdo con la teoría de la reserva cognitiva, la práctica de actividades estimulantes durante toda la vida puede reflejar una disminución en el riesgo de demencia. En este contexto, MediaPrimer desarrolló la plataforma online para el entrenamiento cognitivo primerCOG, con un conjunto de once actividades estimulantes cognitivamente para personas mayores.

Objetivo: Analizar la influencia de las variables edad y el nível de educación, y las actividades de ocio, en el nivel máximo alcanzado en las diversas actividades primerCOG.

Métodos: Investigación cuantitativa no experimental transversal. Muestra de 30 adultos mayores cognitivamente sanos.

Resultados: Se observaron asociaciones positivas entre la escolarización de los participantes y el nivel máximo alcanzado en todas las actividades, y por el contrario, una asociación negativa en la mayoría de las actividades con la edad de los participantes. Adicionalmente, se encontró que los participantes que regularmente practican actividades de ocio cognitivamente estimulantes, tienen un mejor rendimiento en las actividades.

Conclusiones: Los resultados confirman la existencia de variables que influyen en el desempeño cognitivo en ancianos cognitivamente sanos, que pueden ser útiles en la comprensión del desarrollo de la demencia. En el futuro será importante para replicar el estudio con nuevas variables, como el número de horas diarias dedicadas a actividades de ócio y CI premórbido del participante.

Palabras Clave: Envejecimiento; Reserva Cognitiva; Déficit Cognitivo; Entrenamiento Cognitivo

INTRODUCTION

Over the last few decades, we have been witnessing substantial demographic changes, associated with significant restructuring processes, namely related to birth and mortality rates, and aging. The number of people over 60 years is expected to rise from about 841 million in 2014, to about 2 billion in 2050, worldwide (World Health Organization [WHO], 2014). It is estimated that in 2020, for the first time in history, the number of people over 60 will be higher than the number of children under 5 years. Portugal is registering one of the highest aging rates among EU countries. Recent projections indicate that this trend will continue, with the aging rate estimated to reach 307 older people per 100 young people by 2060, and that the elderly population will possibly represent about 35% of the total Portuguese population by 2060 (Instituto Nacional de Estatística, 2014).

Aging is a multidimensional process with a high level of subjectivity, dynamism and variability among individuals (Dobrzyn-Matusiak, Marcisz, Bak, Kulik, & Marcisz, 2014). For example, it has been reported that the normal biological and physiological changes associated with aging may occur at a slower pace in people who remain mentally and physically active (Michel, 2016).

The recurrence of clinical observation and literary documentation showing existing differences between the degree of cerebral pathology and the observed clinical manifestation (Stern, 2007) led to the emergence of the concept of Cognitive Reserve. For example, postmortem studies have shown histological changes compatible with moderate-stage Alzheimer's disease in individuals without corresponding symptomatic manifestations (Ince, 2001). Cognitive Reserve plays a crucial role in the aging trajectory of individuals, being related to maintaining a healthy cognitive status and functional capacity, and therefore keeping autonomy and having a better quality of life, for longer periods of time throughout life. Several variables have been associated with an increase in the Cognitive Reserve of individuals, namely education and the practice of some motivating and stimulating leisure activities (Sobral, Pestana, & Paúl, 2014).

Supporting Active and Healthy Ageing, our company, MediaPrimer - Tecnologias e Sistemas de Informação, Lda., in collaboration with Centro de Neurociências e Biologia Celular da Universidade de Coimbra, is developing the primerCOG platform. This is a technology-based platform with a solid scientific background, which aims to contribute to a healthy aging and provide an answer to the needs of stimulation, maintenance, monitoring and cognitive rehabilitation.

The objective of this study is to outline the influence of sociodemographic variables and occupation of leisure time in the performance of the primerCOG activities, using a sample of cognitively healthy senior population.

1. THEORETICAL FRAMEWORK

During the aging process, there are several cognitive changes that are seen as normal for the individual's ages. Biopsychosocial changes, occurring due to age progression, are associated with several factors, such as the genetic characteristics, lifestyle, education and the environment of each individual, and imply several repercussions. It is known that, as we get old, the decline in abilities and functions becomes substantially more visible and accentuated, and the vulnerability associated to elderly is aggravated.

Age has been pointed out as the main risk factor for the development of dementia, such as Alzheimer's Disease (AD), or Mild Cognitive Impairment (MCI) (Prince et al., 2013). Considering this, a significant increase in prevalence rates of dementia is predicted for the next decades. Currently, an estimate of 36 million people are diagnosed with Alzheimer's disease and, according to WHO, this number is expected to double by 2030, and to triple by 2050 (Michel, 2016). This urges for action and developing ways to prevent the cognitive decline. This situation is also expected in Portugal, with a considerable increase in the incidence and prevalence of dementia, associated with double population aging (Santana, Farinha, Freitas, Rodrigues, & Carvalho, 2015).

In Portuguese population, there are 160 287 estimated cases of dementia in people over 60 years of age, and there may be between 80 144 to 112 201 Alzheimer's patients. Data from IMSH (Intercontinental Marketing Services Health) indicates that only 76 250 patients are diagnosed with Alzheimer's disease and receiving anti-dementia treatment. (Santana et al., 2015).

It has been widely described that usual cognitive activity practice before dementia diagnostic, helps protecting and slowing down the normal cognitive decline associated with age. The intellectual challenges that a person faces throughout life allow the accumulation of reserves that, as aging occurs, will grant the use of alternative strategies (Sobral & Paúl, 2013).

The concept of reserve is fundamental and has been a focus of research interest, since it is often associated with the way the aging process happens. Reserve concerns the ability of the brain to tolerate a certain amount of injury without the onset of symptoms, and the increase in this capacity may result in a delay in the clinical expression of the neurodegenerative process (Sobral & Paúl, 2013). As already noted, there is often a discrepancy between the clinical manifestation of dementia, or even the absence of symptomatic manifestations, and the degree of cerebral pathology observed in postmortem studies. This data indicates the presence of possible protective factors, such as the reserve.

Reserve is not stable throughout life and depends on several factors, such as genetic, physical condition, socioeconomic level, education, professional occupation, leisure activities, and many others (Cosentino & Stern, 2012; Sobral & Paul, 2013).

The concept of reserve includes both the concepts of cerebral reserve and cognitive reserve. The former concerns a more passive aspect of the reserve and is based on the individual's quantitative or morphological characteristics, such as brain size or number of neurons (Cosentino & Stern, 2012). The latter, related to cognitive reserve, on the other side, is associated with an active reserve model, and is strictly related to a more efficient use of alternative brain networks and the ability to adapt to alternative operations or circuits (Sobral & Paúl, 2013), and may be often stimulated according to the activity of the individual throughout life. Among other possibilities, a higher education and participating in motivating and stimulating leisure activities have been strongly associated with moderate gains in the cognitive reserve over the life span, resulting in a successful aging, particularly cognitive aging (Sobral & Paúl, 2013).

In cases of clinical diagnosis of either mild cognitive impairment or early-to-moderate dementia, keeping an active lifestyle that includes cognitive and social activities is critical to maintaining functionality and quality of life of both patients and their caregivers. Given the numerous benefits of cognitive training, it is important to invest in strategies that support active aging and that focus on prevention of cognitive decline, such as cognitive training platforms. In order to maximize the possible results, it is important to investigate which variables may influence the use of this kind of solutions.

MediaPrimer, in collaboration with Centro de Neurociências e Biologia Celular da Universidade de Coimbra, is developing primerCOG platform. This is a solid scientific and technological based platform, which aims to contribute to a healthy aging, through activities of cognitive stimulation, maintenance, monitoring and rehabilitation. primerCOG includes two different possibilities of user profiles - the healthy profile (cognitively healthy elderly adults) and the clinical profile (patients with medical diagnosis of neurodegenerative disease, e.g. Mild Cognitive Impairment and Alzheimer's Disease). The development team involved in primerCOG includes researchers and professionals in neurosciences, design and engineering.

primerCOG provides a set of activities focused on occupational health (Cálculos, Classificar Cartões, Colecionar Botões, Descobrir as Diferenças, Encontrar os Gémeos, Labirintos, Lista de Palavras, Na Mesma Ordem, Slot Machine, Torres e Vi ou Li Antes) that allows the cognitive training of memory, attention, executive functions, language and visuospatial ability and requires the ability to perform various tasks such as mental calculation, abstract reasoning, planning and problem solving, and others.

In the creation of primerCOG, in addition to ensuring that the final result was easy to use, we aimed to guarantee that this platform could meet the needs of all potential users. It was developed under a user centered methodology, exploring the user experience concept and adopting the principles of universal design. Changes resulting from the natural aging process were considered, which translated into a variety of characteristics to be assumed and respected on the definition of usability guidelines, and that may clearly interfere in fields such as interaction, navigation, information, functional model, graphical interface and content creation.

Thus, we can affirm that primerCOG has a clear understanding of the users for whom it was created and communicates its concept and objectives in a clear way, while it is appealing and easy to use.

At the moment, primerCOG platform is already functionally validated for elderly adults with a cognitively healthy profile (Teixeira, Costa, Alecrim, Freitas, & Santana, 2015), which allows us to confirm the suitability of cognitive training activities and the design applied to its users.

2. METHODS

Quantitative non-experimental and transversal design.

In the present transversal study, sociodemographic data and the cognitive evaluation of the participants were initially collected, followed by the intervention's period with the activities of the online cognitive training platform primerCOG.

2.1 Sample

The sample includes 30 institutionalized or day-care elderly, with a mean age of 73.73 years and a mean educational level of 9.53 years, of which 28 participants were women (Table 1).

Table 1 - Characteristics of the sample regarding socio-demographic variables of education and age

Variables	*Levels*	*N*	*Mean (SD)*
Age	60 – 94 years		73.73 (9.86)
Education	1 – 16 years		9.53 (5.00)
	Basic Education (1 - 9 years)	43.3% (*n* = 13)	
	Secondary education (10 – 12 years)	20% (*n* = 6)	
	Higher education (Licenciate's degree)	36.7% (*n* = 11)	
Gender	Feminine	93.3% (*n* = 28)	

2.2 Data collection instruments

All the participants answered the following instruments in this exactly order: (i) sociodemographic questionnaire and inventory of leisure activities (both instruments were developed for this study); (ii) Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975; Freitas, Simões, Alves, & Santana, 2015) and (iii) Montreal Cognitive Assessment (MoCA; Nasreddine et al., 2005; Freitas, Simões, Alves, & Santana, 2011). The last two instruments allowed to ensure the participants' healthy cognitive status, according to the normative data for the Portuguese population (Freitas et al., 2011, 2015).

2.3 Inclusion criteria

The inclusion criteria were: (i) Portuguese as native language; ii) 60 or more years; iii) regular performance in cognitive screening tests, according to normative values for Portuguese population; (iv) no clinical history of psychiatric or neurological pathology; (v) no records of alcohol or other substances abuse.

2.4 Procedures

After establishing contact with care institutions for the elderly and identifying the project's participants, the next step was to obtain their written informed consent. The study and all its sessions were conducted in an adequate environment and the conditions were standardized for all the participants.

Only users that have shown a regular cognitive performance for their education and age after conducting the initial evaluation were eligible for participation. This initial assessment was prior to the intervention phase, which consisted in executing cognitive training activities up to the Maximum Level Achieved (MLA).

primerCOG platform has a set of activities which stimulates several cognitive domains, such as: attention, executive functions, memory and visuospatial ability (others are in the implementation phase). All these activities have several levels of difficulty, and in this study, the goal was for each participant to execute each one of them, up to the highest level (MLA).

The intervention sessions with the activities lasted for an average duration of one hour and the average number of sessions was equal to six (M = 6.3). The average number of cognitive activities from primerCOG platform performed per session was two (M = 2.36).

2.5 Data analysis

The statistical program "Statistical Package for Social Sciences" (IBM, SPSS Version 20) was used for data analysis. Descriptive statistical analyses were performed to characterize the sample and the sessions. Pearson's Correlations allowed the analysis of the relationship between sociodemographic variables and MLA in cognitive training activities, and between leisure time occupation and MLA. Linear Regression Model (LRM) was also used to study the influence of education and age variables in MLA.

In order to interpret the correlation results, Cohen (1988) guidelines were used, considering values of .10, .30 and .50 as small, moderate and high effects, respectively. In the analysis of effect size in the regressions, the Cohen references were also used, and the coefficient of determination (R^2) was interpreted, considering values of .02, .13 and .26 as small, medium and high, respectively.

3. RESULTS

In the cognitive screening tests that were given to the participants to ensure their healthy cognitive state, results were: in MMSE: M = 28.53 ± 1.2, and in MoCA: M = 21.60 ± 4.92. In addition to considering a normal individual cognitive performance as an inclusion criteria, it was found that the mean scores in this sample are above the reference values for the portuguese population (Freitas et al., 2011; Freitas et al., 2015).

Influence of education and age on MLA in each activity

In general, there were positive and statistically significant correlations between MLA and education. Thus, the higher the education, the higher the MLA. Education statistically influenced MLA in almost all activities, with the exception of Torres activity (r = .279, p = .135), which is based on the well-known Tower of Hanoi task (TOH).

Concerning age, there were negative correlations between MLA and age, so the bigger the participant's age, the lower the MLA. The negative and statistically significant correlations between MLA and age were found for almost all activities, with the exception of Labirintos activities (r = -163, p = .389) and Torres (r = -100, p = .600). The correlation values between both education and MLA and age and MLA are shown in Table 2.

Table 3 shows the values of the LRM analysis for the different activities and for education and age.

Table 2 - Pearson Correlations between education and MLA and between age and MLA in each of the eleven cognitive activities tested

	Education	*Age*
MLA Cálculos	*r* =.819; *p* = .000**	*r* =-.754; *p* = .000**
MLA Classificar Cartões	*r* =.668; *p* = .000**	*r* =-.435; *p* = .018*
MLA Colecionar Botões	*r* =.641; *p* = .000**	*r* =-.476; *p* = .008**
MLA Descobrir as Diferenças	*r* =.436; *p* = .018*	*r* =-.388; *p* = .038*
MLA Encontrar os Gémeos	*r* =.538; *p* = .002**	*r* =-.556; *p* = .001**
MLA Labirintos	*r* =.578; *p* = .001**	*r* =-.163; *p* =.389
MLA Lista de Palavras	*r* =.561; *p* = .001**	*r* =-.489; *p* = .006**
MLA Na Mesma Ordem	*r* =.499; *p* = .005**	*r* =-.474; *p* = .008**
MLA Slot Machine	*r* =.689; *p* = .000**	*r* =-.467; *p* = .009**
MLA Torres	*r* =.279; *p* =.135	*r* =-.100; *p* =.600
MLA Vi ou Li Antes	*r* =.415; *p* = .023*	*r* =-.483; *p* = .007**

* $p < .05$. ** $p < .01$

Table 3 - Linear regression to analyze the influence of education and age in MLA in each cognitive training activity

	B	*SE B*	*β*	*sig*
MLA Cálculos R^2 = .733; *F*(2, 27)= 40.878, *p*= .000				
Age	-.056	.019	-.378	.006
Education	.465	.104	.569	.000
MLA Classificar Cartões R^2= .458; *F*(2, 26)= 10.977, *p*= .000				
Age	.018	.025	.163	.467
Education	.479	.134	.791	.001
MLA Colecionar Botões R^2 = .416; *F*(2, 26)= 9.613, *p*= .001				
Age	-.013	.027	-.092	.642
Education	.439	.148	.580	.006
MLA Descobrir as Diferenças R^2= .208; *F*(2, 26)= 3.417, *p*= .048				
Age	- .013	.017	-.178	.449
Education	.128	.093	.319	.180
MLA Encontrar os Gémeos R^2 = .361; *F*(2, 27)= 7.630, *p*= .002				
Age	-.063	.036	-.356	.094
Education	.292	.197	.303	.150
MLA Labirintos R^2= .420 ; *F*(2, 27)= 9.765, *p*= .001				
Age	.075	.038	.389	.057
Education	.887	.207	.835	.000
MLA Lista de palavras R^2= .339; *F*(2, 27= 6.932, *p*= .004				
Age	-.027	.027	-.210	.322
Education	.300	.148	.422	.053

	B	*SE B*	*β*	*sig*
MLA Na mesma ordem R^2= .286; *F*(2, 27)= 5.396, *p*= .011				
Age	-.020	.017	-.256	.248
Education	.142	.093	.330	.140
MLA Slot Machine R^2= 475; *F*(2, 27)= 12.229, *p*= .000				
Age	-.003	.023	-.021	.912
Education	.453	.124	.676	.001
MLA Torres R^2= .091; *F*(2, 27)= 1.346, *p*= .277				
Age	.010	.016	.150	.544
Education	.137	.088	.378	.133
MLA Vi ou Li Antes R^2= .250; *F*(2, 27)= 4.492, *p*= .021				
Age	-.025	.015	-.371	.107
Education	.062	.081	.170	.451

Influence of leisure time occupation on the performance of the primerCOG platform activities

86.7% of participants report reading habits, 93.3% television, 56.7% cinema, and 43.3% internet, at least once a week.
Positive but non-significant correlations were found between reading and cinema habits and MLA, in all activities. Correlations between use of internet and MLA was positive and statistically significant for all activities. Relatively to the variable "watching television", the association was negative in some activities and with statistical significance in the activities "Na Mesma Ordem" (r = -.433, p = .017), "Slot Machine" (r = -.518, P = .003) and "Vi ou Li Antes" (r = -.480, p = .007). Pearson's r values are shown in Table 4.

Table 4 - Pearson's correlations between leisure time occupation and MLA in the cognitive training activities

		Reading	*Television*	*Cinema*	*Internet*
MLA Cálculos	*r*	*r* =.149; *p* =.432	*r* =-.222; *p* =.239	*r* =.090; *p* =.635	*r* =.632; *p* =.000**
MLA Classificar Cartões	*r*	*r* =.190; *p* =.324	*r* =-.315; *p* =.096	*r* =.092; *p* =.634	*r* =.785; *p* =.000**
MLA Colecionar Botões	*r*	*r* =.093; *p* =.626	*r* =.013; *p* =.944	*r* =.130; *p* =.494	*r* =.709; *p* =.000**
MLA Descobrir as Diferenças	*r*	*r* =.230; *p* =.230	*r* =-.222; *p* =.248	*r* =.191; *p* =.321	*r* =.490; *p* =.007**
MLA Encontrar os Gémeos	*r*	*r* =.169; *p* =.373	*r* =.037; *p* =.848	*r*=-.025;*p* =.894	*r* =.511; *p* =.004**
MLA Labirintos	*r*	*r* =.174; *p* =.358	*r* =-.166; *p* =.381	*r* =.147; *p* =.438	*r* =.435; *p* =.016*
MLA Lista de Palavras	*r*	*r* =.234; *p* =.214	*r* =-.212; *p* =.260	*r* =.330; *p* =.075	*r* =.615; *p* =.000**
MLA Na Mesma Ordem	*r*	*r* =.137; *p* =.469	*r* =-.433; *p* =.017*	*r* =.135; *p* =.476	*r* =.710; *p* =.000**
MLA Slot Machine	*r*	*r* =.231; *p* =.219	*r*=-.518; *p* =.003**	*r* =.240; *p* =.202	*r* =.674; *p* =.000**
MLA Torres	*r*	*r* =.031; *p* =.872	*r* =-.292; *p* =.117	*r* =.019; *p* =.923	*r* =.431; *p* =.017*
MLA Vi ou Li Antes	*r*	*r* =.201; *p* =.286	*r*=-.480; *p* =.007**	*r* =.061; *p* =.749	*r* =.483; *p* =.007**

* *p* < .05. ** *p* < .01

4. DISCUSSION

After conducting the functional validation of the primerCOG platform (Teixeira et al., 2015), in which the adequacy and feasibility to use cognitive training activities among the elderly were analyzed, the present paper investigates the influence of sociodemographic variables and leisure habits in the performance of participants in these activities.

Results obtained point to a positive and statistically significant correlation between the educational level of the participants and their cognitive performance in most activities, with an expected higher MLA in the participants with higher education, with the exception of the Torres activity. This activity presents positive values, they are not significant. In general, LRMs also allowed us to confirm these results by presenting moderate to high values of explained variance, and highlighting the statistically significant influence of education in participants' performance in most activities, with the exception of the Torres activity. In an earlier study, which aimed to understand the influence of sociodemographic variables in the performance of adults in a TOH task, results also indicated that, among several variables, education was the only one that had no influence on performance (Rönnlund, Lövdén, & Nilsson, 2001). The potential protective effect of education on neurodegenerative processes, namely in Alzheimer's disease, has been extensively investigated. Some studies have shown a lesser cognitive decline in higher educated individuals (Amieva et al., 2014). This trend can be explained by the level of premorbid intelligence and cognitive reserve, which are highly influenced by educational level. They act in a compensatory way by assisting the use of alternative networks after brain lesions related to dementia states occur (Amieva et al., 2014). The concept of premorbid intelligence has had a prominent interest in recent research as it was found essential to assess one's current performance and as a relevant asset to neuropsychological evaluation (Alves, Freitas, Martins, Santana, & Simões, 2013). A correct estimation of premorbid intelligence is important to evaluate the existence, nature and degree of potential cognitive decline (Alves, Martins, & Simões, 2010).

Concerning the age of participants, there were negative and statistically significant correlations between age and MLA in the cognitive activities. Therefore, it is expected that older participants will achieve a lower MLA than younger participants in all activities, except in Torres and Labirintos. Regarding LRM results, age alone does not significantly influence performance in general activities, with the exception of the Cálculos activity, in which performance significantly decreases as the participants' age increases. These results, namely the absence of statistical significance concerning age influence in other activities performance should be carefully interpreted, given the constraint of having a small sample size. This limitation may not allow sufficient representativeness of all age groups. Nevertheless, it is possible to identify a negative association between age and performance in cognitive tests, which is a consensual result among literature, and indicates that as individuals grow older, cognitive difficulties increase. In the study mentioned above, conducted by Rönnlund and colleagues (2001), the authors also confirm this negative relation between age and performance, even if it was only for Torres activity.

This study shows some results in compliance with literature, evidencing a greater influence of education in cognitive performance when comparing to the influence due to individual's age (Passos et al., 2015). However, given the high association of these two variables and consequently the possible presence of multicollinearity effects, more robust conclusions may only be reached after analyzing these variables independently, or investigating the effects of modelling these variables in cognitive performance.

Leisure habits have often been associated with differences in cognitive performance and development of dementia (Wang et al., 2013). Literature describes that practicing stimulant activities is related to a distinct pattern of development of dementia, sometimes identified as a protective effect. Hughes and colleagues (2010) conducted an investigation that described that cognitively stimulating activities are associated with a reduced risk of Alzheimer's development, in which the importance of reading was reinforced. Participants who indicated their preference in spending time reading and watching movies had consistently a better performance, though not significantly.

Occupation of leisure time browsing the Internet was significantly associated to all primerCOG activities, greatly contributing to a better performance. More and more, it is acknowledged that digital literacy is important and can help reducing the risk of cognitive decline, regardless of age and socioeconomic status of individuals (Xavier et al., 2014), and this finding may explain the participants' results on the present study. Also, familiarity with technological devices can contribute to more positive results in the execution of the activities, achieved by these participants.

Spending time watching television was negatively associated with the participant's performance in activities, and results were significant in "Na Mesma Ordem", "Slot Machine" e "Vi ou Li Antes". Hoang and colleagues (2015) evaluated a group of subjects over 25 years and studied their patterns associated with physical activity or watching television habits. They concluded that individuals who spent a long period of time watching television (> 3 hours / day) presented inferior performance in cognitive activities. This result may be easily understood if we consider that watching television is usually associated with a sedentary lifestyle, which increases the risk of cognitive impairment.

The outcome related to participation in stimulating activities such as reading, cinema or using internet, combined with the results that were obtained in education, indicates a possible relation with the concept of cognitive reserve. In fact, the most stimulated individuals presented better results in activities. This is a relevant conclusion because, as the concept of reserve suggests, and from what has already been described, individuals with higher educational level or the ones who practice stimulating occupational and leisure activities have a lower risk of developing dementia (Sobral & Paúl, 2013).

The set of results described in here indicates that there are indeed, variables that influence the performance of individuals in cognitive training tests. Knowing these variables and how they behave may be an important step to act in advance, to promote healthier behavior or to change certain habits that may be harmful. On the other hand, encouraging research in this area will also allow the adaptation of cognitive training activities according to certain characteristics considered important (e.g., the number of years of education of the subject), which will maximize the possible expected results.

CONCLUSIONS

The aim of this study was to explore whether sociodemographic variables, such as education and age, and habits of leisure activities, could influence performance on cognitively healthy seniors, during their online cognitive training with primerCOG platform.

Results show that individuals with higher education usually have better performance in cognitive activities. On the other hand, these results indicate that there is a lower performance as age increases. . However, the influence of age in performance is lower when compared with education. The results obtained are consistent with what has been described in literature, with cognitive performance being less influenced by age rather than by education.

Results concerning leisure time seem to indicate that participating in stimulating activities such as reading, cinema and browsing on the internet are associated with higher levels of performance in cognitive activities. On the contrary, seniors who spend most of their free time watching television showed lower results.

This study had some constraints, namely the reduced sample and the fact that it was not possible to measure time spent on leisure activities, which may be a relevant factor in similar studies.

This research field is gaining a great importance and, in the future, efforts shall be made in proving which variables may be associated with different levels of performance in cognitive training activities, once these results may reflect the individual's cognitive capacity or impairments. In addition to replicating the present study with a larger sample, it may be pertinent to add the study of other variables, such as the level of participants' IQ, which may relate to or overlap with the effects of education. It is also important to check the amount of time spent with leisure activities.

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COMUNICAÇÃO E COMPETÊNCIAS INTERPERSONAIS PARA ESTUDANTES DE GRADUAÇÃO EM ENFERMAGEM

COMMUNICATION AND INTERPERSONAL COMPETENCIES FOR UNDERGRADUATE NURSING STUDENTS

COMUNICACIÓN Y COMPETENCIAS INTERPERSONALES PARA ESTUDIANTES DE GRADUACIÓN EN ENFERMERÍA

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RESUMO

Introdução: Habilidades de comunicação eficaz são essenciais para cuidados de enfermagem holísticos e para a prestação de uma atitude de cuidar profissional.
Objetivos: Este artigo pretende explorar a comunicação e as competências interpessoais em estudantes de enfermagem.
Desenvolvimento: Existe necessidade de aplicar uma teoria ou modelo como um guia para o desempenho profissional. Os estudantes precisam de formação para adquirirem os conhecimentos e habilidades de competência prática.
Conclusões: É necessário tempo e espaço para praticar e para se tornar eficaz e competente com as habilidades de: empatia; ouvir; atitude de não-julgamento; cuidados individualizados (cuidado centrado na pessoa).

Palavras-chave: Comunicação; Competências; Estudantes; Enfermagem

ABSTRACT

Introduction: Effective communication skills are essential for holistic nursing care and the provision of a caring professional attitude.
Objectives: This article aims to explore Communication and Interpersonal Competencies for Undergraduate Nursing Students.
Development: It's necessaire to draw from some theory or model as a guide to professional performance. Students need education to acquire the knowledge and skills for practice competence.
Conclusions: It's necessaire time and space to practice in order to become effective and competent with the skills of: empathy; listening; non-judgmental attitude; Individualized care (Person- centred care).

Keywords: Communication; Competencies; Students; Nursing

RESUMEN

Introducción: Las habilidades de comunicación eficaces son esenciales para la atención holística del oficio de enfermera y la provisión de una actitud profesional que cuida.
Objetivos: Este artículo tiene como objetivo explorar la comunicación interpersonal y las competencias en estudiantes de enfermería.
Desenvolvimiento: Es necesario adoptar una teoría o modelo como una guía para el desarrollo profesional. Los estudiantes necesitan educación para adquirir los conocimientos y habilidades para la competencia práctica.
Conclusiones: Es necesario tiempo y espacio para practicar e para llegar a ser eficaz y competente con las habilidades de: empatía; escuchar; actitud sin prejuicios; cuidado individualizado (cuidados centrados en la persona).

Palabras clave: Comunicación; Competencias; Estudiantes; Enfermería

INTRODUCTION

Communication and competence are important skills in nursing practice. According to Balzer-Riley (2011, p.6) "... communication involves the reciprocal process in which messages are sent and received between two or more people". Moreover, competence is the capacity to act effectively in a certain type of situation.

Nurses need to communicate safely and effectively with patients and their families (An Bord Altranais, 2010, p.6).

Several theories and models are applied as a guide to communication behavior. For instance, Peplau (1952, 1991) describe the developing of a nurse-patient relationship, emphasizing the professional closeness between them (not over involvement). Other roles identified by the same author include counsellor, resource, teacher, technical expert and leader. Furthermore, it is important to foster patient recovery and rehabilitation, and also allow individuals to understand their health problems and to learn from their experience (Pearson et al., 2005, p.181).

In order to better understand the communication and interpersonal competencies for undergraduate nursing students, the present work addresses some concepts, perspectives and strategies to achieve this goal.

1. DEVELOPMENT

There have been enormous advances in the field of communication skills in teaching at the last years. Communication programmes have become a part of mainstream education at all levels of undergraduate curricula and particularly in health care training education.

1.1 - Communication Competencies in Current Practice

A caring professional attitude is being prioritized for several authors, such as Griffiths et al. (2012), Nursing and Midwifery Board UK, standards (2010), American Nurses Association Standards (2010) and Ireland Standards (2016). According to them, there are several items to consider, mainly:

- Fear of a shift from caring to an over reliance on academia;
- Feedback from patients on patient satisfaction surveys;
- Pre-registration –focus on caring, compassion and client- centred care.

To point out, nurses need to be technically competent and knowledgeable –but also need to have "softer nursing qualities" attitudes and skills such as (Griffiths et al., 2012, p.123-124):

- "Empathy;
- Listening;
- Non-judge mental attitude;
- Individualized care".

1.2 - Therapeutic Communication Skills

In nursing therapeutic procedures, there are some important aspects to take into consideration concerning the communication skills:

- Listening and building rapport (Responding);
- Promoting Touch;
- Verbal and non-verbal Communication;
- Promoting Silence;
- Questioning Open–closed (Who; What; Where; When; Why; How).

The effective communication skills involve (Griffiths et al. 2012; Nursing and Midwifery Board UK, Standards, 2010; American Nurses Association Standards, 2010; Ireland Standards, 2016):

- Active listening;
- Building rapport;
- Asking open-ended questions;
- Self-awareness;
- Empathy;
- Genuineness;
- Non-judgmental approach;
- Working with patient's beliefs and values;
- Involving patients in decision making;
- Show motivation and willingness to help.

1.3. Nurse of the Future: Core Competencies

The Massachusetts Department of Higher Education (2010), cited by Boykins (2014, p. 42), stablished a core competencies for a nurse of the future:

- "Uses clear, concise, and effective written, electronic and verbal communication;
- Understands visual, auditory, tactile communication;
- Impact of ones' own communications style on others;
- Understands the physiological, psychosocial, developmental, spiritual, and cultural influences on effective communication;
- Understands the nurses role and responsibility in applying principles of active listening;
- Chooses the right setting/time to initiate conversation;
- Assesses patient's readiness/willingness to communicate;
- Assesses the patient's ability to communicate;
- Assesses barriers to effective communication Makes appropriate adaptations in own communication based on patient and family assessment;
- Assesses the impact of use of self in effective communication;
- Establishes rapport;
- Actively listens to comments, concerns, and questions;
- Demonstrate effective interviewing techniques;
- Provides opportunity to ask and respond to questions;
- Assesses verbal and nonverbal responses;
- Adapts communication as needed based on patient's response;
- Able to distinguish between effective and ineffective communication with patients and families".

1.4 - Communication barriers between patient and nurse

There are some communication barriers between patient and nurse:

- Language, Developmental level, Medical condition/disabilities;
- Learning styles, Psychosocial, Literacy (reading and health literacy), and cultural factors;
- Defenses mechanisms, Attitudes and beliefs, Values, Prejudices.

2. COMMUNICATION COMPETENCIES EXPRESSED BY REGISTERED NURSES

According to Braga (2010, p.532), the communication competencies requirements of a nurse should be:

1. Experiencing it in one's professional and personal routine;
2. Listening to others;
3. Being attentive to non-verbal communication;
4. Validating message comprehension;
5. Being able to eliminate communication barriers;
6. Showing affectivity;
7. Investing in self-knowledge.

CONCLUSIONS

At the end of the 4th year, student of nursing should have the knowledge, appreciation and development of empathic communication skills and techniques for effective interpersonal relationships with people and other professionals in health care settings. (Griffiths et al. 2012; Nursing and Midwifery Board UK, Standards, 2010; American Nurses Association Standards, 2010; Ireland Standards, 2016).

According to the same authors the important points for professional development are:

The effective communication skills are essential for holistic nursing care and the provision of a caring professional attitude.

The education to acquire the knowledge and skills for competence is needed. Thus, it is essential to draw from some theory or model as a guide to behaviour, and consider the psychological input, in order to understand why people behave the way they do.

The students need time and space to practice to become effective and competent with the skills of: empathy; listening; non-judgemental attitude; individualized care (Person-centred care).

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DIFERENÇAS DE GÉNERO NUMA AMOSTRA DE PESSOAS COM DOENÇA CARDIACA

GENDER DIFFERENCES IN A SAMPLE OF PEOPLE WITH HEART DISEASE

DIFERENCIAS DE GÉNERO EN UNA MUESTRA DE PERSONAS CON ENFERMEDADES DEL CORAZÓN

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RESUMO

Introdução: Não sendo as doenças cardiovasculares exclusivas do homem nem da mulher, importa conhecer que diferenças existem entre os géneros, uma vez que é um facto que as características físicas e psicossociais que os distinguem, podem influenciar os vários domínios da sua saúde, nomeadamente a saúde cardiovascular.
Objetivos: Identificar diferenças de género numa amostra de pessoas com doença cardíaca.
Métodos: Estudo quantitativo, transversal, que utiliza a análise descritiva e multivariada de dados com recurso à regressão logística.
Resultados: Os dados indicaram que comparativamente com os homens, as mulheres são mais ansiosas *(OR = 2.78; p = 0.018)*, têm baixo controlo percebido (*OR= 3.06; p = 0.008*), não fumam (*OR = 4.41; p = 0.028*) e não ingerem bebidas alcoólicas *(OR = 5.67; p = 0.000)*.
Conclusões: Os enfermeiros devem consciencializar-se de que as diferenças de género entre o homem e a mulher os fazem diferir no seu risco cardiovascular. Por tal, devem estar sensibilizados para a necessidade de identificar os fatores que o podem influenciar e definir e implementar intervenções capazes de reduzir esse risco para cada género.

Palavras-chave: Género e Saúde; Doenças Cardiovasculares; Fatores de Risco

ABSTRACT

Introduction: Cardiovascular diseases are not unique to either men or women, so that it is important to know what differences exist between the sexes, since it is a fact that the physical and psychosocial problems that distinguish them can influence the various areas of their health, particularly cardiovascular health.
Objectives: To identify gender differences in a sample of people with heart disease.
Methods: A quantitative, cross-sectional study with descriptive and multivariate data analysis using logistic regression.
Results: The data indicated that women are more anxious *(OR = 2.78; p = 0.018)*, have low perceived control *(OR = 3.06; p = 0.008)*, do not smoke *(OR = 4.41; p = 0.028)* and do not drink alcoholic beverages *(OR = 5.67; p = 0.000)*.
Conclusions: Nurses should be aware that gender differences between men and women make mean they differ in terms of cardiovascular risk. For this reason, they should be aware of the need to identify the factors that can influence the risk and define and implement interventions that reduce this risk for each gender.

Keywords: Gender and Health; Cardiovascular diseases; Risk Factors

RESUMEN

Introducción: No siendo las enfermedades cardiovasculares exclusivo del hombre o de la mujer, es importante saber cuáles son las diferencias que existen entre los sexos, ya que es un hecho que los problemas físicos y psicosociales que les distinguen, pueden influir en los diversos ámbitos de la salud, especialmente la salud cardiovascular.
Objetivos: Identificar las diferencias de género en una muestra de personas con enfermedades del corazón.
Métodos: Estudio cuantitativo, transversal, que utiliza el análisis descriptivo y multivariante de datos con la función de regresión logística.
Resultados: Los datos indican que, en comparación con los hombres, las mujeres son más ansiosos *(OR = 2.78; p = 0.018)*, tienen bajo control percibido *(OR = 3.06; p = 0.008)*, no fume *(OR = 4.41; p = 0.028)* y no ingerir bebidas alcohólicas *(OR = 5.67; p = 0.000)*.
Conclusións: Las enfermeras deben ser conscientes de que las diferencias de género entre hombres y mujeres hacen difieren en su riesgo cardiovascular. Por esto, deben ser conscientes de la necesidad de identificar los factores que pueden influir y definir y implementar intervenciones que pueden reducir el riesgo de cada género

Palabras Clave: Género y Salud; Enfermedades Cardiovasculares; Factores de Riesgo

INTRODUCTION

Although the concepts of gender and sex are commonly understood as analogous, because they are related to each other, in fact they are different. Talking about gender and sex differences in conceptual terms is to speak of different defining characteristics. However, while the concept of sex refers to biological/genetic characteristics, the concept of gender adds other characteristics to these, such as behaviour, expectations and social roles played, which influences how people perceive themselves and others. Thus, it appears that gender is a broad and complex concept, involving not only biological/genetic issues, but also psychosocial differences between men and women. The importance of understanding how the specific characteristics of gender influence each individual's health, in particular as regards identifying risk factors for cardiovascular disease (CVD) is important in preventing these diseases, especially when there are disparities (Shah, Palaskas, & Ahmed, 2016).

The aim of this study is to identify gender differences in a population with heart disease by analysing data collected by Pacheco in 2011.

1. THEORETICAL FRAMEWORK

Cardiovascular disease (CVD) is the leading cause of mortality worldwide. Currently, more people die with a disease of this type than any other. Statistically, it is estimated that 17.5 million people died from CVDs in 2012, representing 31% of all deaths globally. Moreover, it is estimated that 7.4 million are attributable to coronary heart disease (CHD) and 6.7 million to stroke. Among all CVD deaths worldwide, approximately 75% occurred in low- and middle-income countries (WHO, 2016).

According to the report of the Global Burden of Disease in 2004, CVD, the single biggest cause of death as well as a major cause of morbidity, accounts for 32% of deaths in women and 27% in men (Vaccarino et al., 2011).

In Europe, CVD accounts for 45% (over 4 million) of all the deaths annually, according to the European Society of Cardiology. In terms of gender, it represents 49% of all deaths in women (2.2 million) and 40% of all deaths in men (1.8 million). It is also worth noting that the most common form of mortality from CVD in Europe is CHD (20%), followed by cerebrovascular disease (11%). However, gender differences are not evident with regards to mortality due to CHD (since the percentage that affects men and women is similar (19% vs 20%), but rather with regards to mortality caused by cerebrovascular disease and other cardiovascular diseases, which are more highly prevalent in women, with percentages of 14% and 15%, respectively, compared to 9% and 12% for men (Townsend et al., 2016).

A study by Pereira et al. (2013) shows that even though CHD mortality rates differ among different countries, there has been a decline in the rate since the 80s, especially in the percentage of women who die from this disease. This trend has become more prominent since the 90s.

Despite CHD currently being the second most common cause of death in Portugal, a change has been observed in the distribution of different risk factors, with a decline beginning in the 70s in hypertension rates, smoking decreasing in men and increasing in women, and also increased obesity at younger ages. In addition to these facts, there is also an improvement in managing CHD mainly due to greater availability of treatment and the appearance and development of interventional cardiology. This has been promoting a decrease in mortality rates from this disease (Pereira et al., 2013).

Several studies have shown that women have been a suboptimal target of preventive care in relation to CVD, which may have contributed to worse health outcomes compared to men. At the heart of that evidence may be the fact that most studies, from which guidelines for the prevention and treatment of CVD emerge, includes a higher number of men. Thus, in not considering the specifics of gender, prevention inadequate in time and manner to the female gender may be embarked upon. It has also been observed that although there is currently a greater number of women in randomized trials, the percentage is still low compared to the percentage of men. So, there remains a tendency to extrapolate to women conclusions drawn from mostly male samples (Hamill & Ingram, 2015; Shah, Palaskas, & Ahmed, 2016).

A number of global scientific organizations have made an effort to look at men and women differently, defending particular care for each gender as each has differentiated physiological, clinical and psychosocial characteristics with differing impacts on their health. Considering this, the American Heart Association (AHA) has issued specific recommendations regarding women's cardiovascular health since 2004 (Mosca et al., 2011; McSweeney et al., 2016).

Finally, it is worth mentioning that most CVD can be prevented through an effective management and approach to behavioural risk factors, especially smoking, diet, obesity, physical activity and alcohol consumption. For this, it is urgent to identify people with CVD early or those are at high cardiovascular risk (with one or more factors such as hypertension, diabetes, dyslipidemia or with diagnosed CVD) as well as pointing them towards proper health management through the use of counselling and appropriate therapy (WHO, 2016).

2. METHODS

This is a quantitative and cross-sectional study conducted at three hospitals in the north of Portugal. A comparison between genders was performed from a sample of individuals with heart disease hospitalized in the cardiology ward and intensive care unit.

2.1 Sample

The non-probabilistic and intentional sample consisted of 104 men (65%) and 56 women (35%), a total of 160 individuals with heart disease. With an average age of 62 years with a level of education of five years, 81.3% of the sample were married, 70% did not work and 50% had previous heart problems. The primary diagnosis of hospitalization was Acute Myocardial Infarction

(AMI) for 58.8% of the sample, Congestive Heart Failure (CHF) for 16.9% and Unstable Angina (UA) for 13.8%. The most common treatments performed were: medical treatment (41.3%), followed by angioplasty (40.6%). As for the risk factors identified, the following emerged from the data collection: dyslipidemia (75%), hypertension (69.5%), diabetes (34.4%) and smoking (21.3%), with approximately 20 cigarettes/day, lack of exercise (55%), alcohol consumption (44.4%) and the lack of dietary care (41.9%).

Regarding psychosocial variables, it was found that 33.8% of the sample had depressive symptoms, 55.6% had anxiety symptoms and 57.5% showed low perceived control.

2.2 Data collection instruments and procedures

Data collection followed all of the ethical guidelines underlying such a study. Permission was requested from the ethics committees of the institutions where data was collected. The purpose of the study was explained to participants who also received information about the study and guaranteed confidentiality of their data. Their consent was obtained to apply the instrument.

The data were collected by applying a form which included two parts, the first related to sociodemo-graphic and clinical data, and the second consisting of two instruments: one that measured anxiety and depression by applying the Portuguese version of the Hospital Anxiety and Depression Scale (HADS), and the other which evaluated perceived control through the Portuguese version of the Control Attitudes Scale-Revised (CAS-R).

HADS is an instrument consisting of two seven-item subscales, wherein one assesses anxiety (HADS-A) and the other depression (HADS-D). These are scored separately on a Likert scale ranging from zero to three. In each subscale a score below 8 indicates a normal psychological state, a score of 8 to 10 suggests the presence of anxiety and/or depression and a score over 10 suggests severe psychological disorders. Upon validation in Portugal, this instrument obtained a good internal consistency (Pais-Ribeiro et al., 2007). In this study, the Cronbach's alpha values obtained were 0.74 and 0.71, respectively in the anxiety and depression subscales.

CAS-R is an instrument which measures the degree of perception of perceived control that individuals with heart disease have relative to the disease. It consists of eight items with a five-point Likert-type response scale. Its score ranges between 8 and 40 points such that the higher the score, the greater the perceived control (Moser et al., 2009). This instrument has been validated for the Portuguese context with acceptable psychometric characteristics (Pacheco & Santos, 2014). Since a cutoff point has not been defined so as to identify individuals with low and high perceived control (McKinley et al., 2012), we used the median obtained in this study, 29, as the cutoff to classify perceived control as low (<29) and high (≥29). A Cronbach's alpha of 0.65 was obtained for the sample in this study.

2.3 Data analysis and processing

The statistical analysis was performed using the Software Statistical Package for Social Sciences (SPSS), version 19. The sample was divided into two groups (men and women).

The presentation of the data was performed using descriptive statistics using the mean (M), standard deviation (SD), frequency (freq) and percentages (%) when necessary. In order to compare men and women, Student's t-test was used to analyse continuous variables for unpaired samples, and for categorical variables, the chi-square test (x^2) was used to compare proportions.

In order to identify the differences between men and women, logistic regression was used by the stepwise backward likelihood ratio method having entered into the model variables that were statistically significant at 5%. The statistical interpretation of the tests was performed using a 5% level of significance with a 95% confidence interval.

3. RESULTS

Univariate Analysis

The sociodemographic and clinical variables were compared with regard to gender (Table 1). No differences were found for days of hospitalization, number of cigarettes smoked per day, employment status, religion, cohabitation, hospitalization diagnosis, treatments, prior hospitalizations, previous heart problems, dyslipidemia, hypertension, diabetes and nutritional care. Nevertheless, compared to men, women in our sample were found to be older ($p<0.05$), have a lower level of education ($p<0.05$), fewer are married ($p <0.05$), do not smoke ($p<0.01$), do not drink alcohol ($p<0.0001$) and do not exercise ($p<0.05$).

Table 1: Univariate analysis, taking into account sociodemographic and clinical characteristics (N=160)

Variable	Men (n = 104)	Women (n = 56)	*P*
Age *(M ± SD)*	60.69 ± 11.11	64.91 ± 12.61	0.031*
Years of education *(M ± SD)*	6.04 ± 3.67	4.63 ± 3.69	0.022*
Days of hospitalization *(M ± SD)*	4.42 ± 3.64	4.34 ± 3.55	0.889
Cigarettes/day *(M ± SD)*	19.53 ± 9.91	19.25 ± 7.89	0.957
Marital status (married) *(%)*	86.50	71.40	0.020*
Employment status (Not working) *(%)*	65.40	78.60	0.083
Is Religious *(%)*	93.30	98.20	0.162
Cohabitation (Yes) (%)	91.30	87.50	0.439
Hospitalization diagnosis *(%)*			0.219
AMI	60.60	55.40	
UA	16.30	8.90	
CHF	15.40	19.60	
Others	7.70	16.10	
Treatment *(%)*			0.067
Medical	34.60	53.60	
Angioplasty	45.20	32.10	
Surgical	20.20	14.30	
Prior hospitalizations *(%)*	41.30	35.70	0.487
Previous heart problems (%)	49.0	51.80	0.740
Dyslipidemia *(%)*	75.00	75.00	1.00
Hypertension *(%)*	71.20	66.10	0.506
Diabetes *(%)*	31.70	39.30	0.337
No smoking habits *(%)*	71.20	92.90	0.001**
No alcohol consumption *(%)*	41.30	82.10	0.000***
Do not exercise *(%)*	49.00	66.10	0.039*
No dietary care *(%)*	45.20	35.70	0.246

UA: Unstable Angina; AMI: Acute Myocardial Infarction; CHF: Congestive Heart Failure; M: Mean; SD: Standard Deviation
* *p <0.05;* ** *p <0.01;* *** *p <0.0001*

For the psychosocial measures evaluated (Table 2), women showed a higher HADS- A score compared to men (p<0.05). This was corroborated by the higher proportion of them exceeding the cutoff point for anxiety (66.1% vs. 50%). This trend was also found with HADS-D, showing that women a score higher than men (p<0.0001), which was observed by a higher percentage of them exceeding the cutoff point for depression (46.4% vs 26.9%). As for assessing perceived control by applying the CAS-R, women were found to score lower than men (p<0.0001), indicating that they had a lower perception of control of the disease. This was corroborated when applying a cutoff point for lower perceived control (CAS-R <29) to the scale and a higher proportion of women in the group were found to have lower perceived control (76.8%) compared to men (47.1%).

Table 2: Univariate analysis, taking into account psychosocial variables (N=160)

Variable	Men (n = 104)	Women (n = 56)	*p*
Anxiety			
HADS-A *(M ± SD)*	7.89 ± 3.87	9.33± 3.81	0.025*
HADS-A ≥8 *(%)*	50.00	66.10	0.048*
Depression			
HADS-D *(M ± SD)*	5.32 ± 3.16	7.46 ± 3.44	0.000**
HADS-D ≥8 *(%)*	26.90	46.40	0.013*
Perceived control			
CAS-R *(M ± SD)*	28.6 ± 3.66	25.7 ± 3.82	0.000**
CAS-R <29 *(%)*	47.10	76.80	0.000**

HADS-A: Hospital Anxiety and Depression Scale – Anxiety; HADS-D: Hospital Anxiety and Depression Scale – Depression; CAS-R: Control Attitudes Scale – Revised; M: Mean; SD: Standard Deviation
* *p <0.05;* ** *p <0.0001*

Multivariate analysis

After controlling the variables related to gender in the univariate analysis by multivariate logistic regression in order to identify the variables relating to women, the regression model *(Nagelkerke R^2=0.39)* only selected some (Table 3). The following were significant: non-smoking (p<0.05), not consuming alcohol (p<0.0001), the presence of anxiety (p<0.05) and low perceived control (p<0.01). Marital status (p=0.064) and not doing physical exercise (p=0.098) were not significant. We therefore concluded that, compared to men, women are more anxious, have low perceived control, are non-smoking and do not consume alcohol. On the other hand, they are less likely to be married and less likely to do exercise.

Table 3: Summary of the model multivariate analysis of independent correlated variables with gender, using logistic regression (N=160)

Variable	B	SE	Wald Chi-square	df	Odds Ratio (OR)	95% CI		*p*
Marital Status (Married)	- 0.995	0.537	3.430	1	0.370	0.129	1.060	0.064
Non- Smoking	1,486	0.674	4.853	1	4.417	1.178	16.564	0.028*
No Alcohol Consumption	1.736	0.455	14.545	1	5.673	2.325	13.844	0.000***
Do not exercise	0.697	0.422	2.730	1	2.008	0.878	4.591	0.098
Presence of Anxiety	1.026	0.433	5.610	1	2.789	1.194	6.517	0.018*
Low Perceived Control	1.121	0.425	6.958	1	3.068	1.334	7.056	0.008**

CI: Confidence Interval; SE: Standard Error; df: degrees of freedom
Female gender coded as 1
$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.0001$

4. DISCUSSION

From the results it appears that, compared to men, women are more anxious, have low perceived control, are not smokers and do not drink alcohol. The data also revealed that, though not statistically significant, they are less likely to be married and less likely to do exercise. As for other traditional CVD risk factors, such as hypertension, dyslipidemia and diabetes, no differences between the sexes were found.

The bibliography indicates that the physical and psychosocial characteristics that distinguish men and women may influence many areas of their health, including cardiovascular health (WHO, 2016; Shah, Palaskas, & Ahmed, 2016). As a result, there is a growing trend in issuing specific recommendations for each gender as a way to meet their individual/specific characteristics (Mosca et al., 2011; McSweeney et al., 2016).

Psychosocial stress has been identified as having a negative impact on CVD, both in men and women, contributing to its onset, exacerbation, progression and increase in its risk (Moser et al., 2009; Olafiranye et al., 2011; Mckinley et al., 2012; McSweeney et al., 2016). In fact, these variables currently have as great a weight or greater on individuals' cardiovascular health as traditional risk factors and/or the presence of comorbidities (Moser et al, 2009; Olafiranye et al., 2011).

It is worth noting that as well as negative emotional states being common in individuals with CVD, they negatively affect their quality of life, adherence to recommended treatments, the costs of care as well as the recovery from the disease and are associated with a large comorbidity and mortality. Their presence also promotes the exacerbation of traditional risk factors and adopting less healthy behaviours (Olafiranye et al., 2011; PerK et al., 2012; Pajak et al., 2013).

Among the most widely studied psychosocial risk factors is depression, whose evidence confirms it as a factor favouring increased cardiovascular risk. Anxiety also has a negative impact on cardiovascular health according to several studies, even though it has been researched less and more controversially (Moser et al., 2009; Mckinley et al., 2012; McSweeney et al., 2016).

Several studies have indicated that both anxiety and depression, conditions currently considered a public health problem, are more common and prevalent in women and persisted more in them than in men (Doering et al., 2011; Pajak et al., 2013; Prata, Martins, Ramos, Rocha-Gonçalves, & Coelho, 2016). This fact confirms our results since they indicated percentages of anxiety and depression in women in our sample (66.1% and 46.4% respectively) higher than those of men (50% and 26.9% respectively).

It is worth reflecting on these results, since the evidence suggests that the treatment of negative psychosocial factors, such as anxiety and depression, help individuals with CVD to recover, reducing the number of events and improving their quality of life (Olafiranye et al., 2011; PerK et al., 2012; Pajak et al., 2013; McSweeney et al., 2016).

With regard to marital status, the multivariate analysis in our study revealed that it is not statistically significant; however, women are less likely to be married. With regard to this information, research has shown that unmarried individuals have fewer resources, less social support, less social control, more risk behaviours and worse health outcomes compared to married people (Dupre & Nelson, 2016). The study of this variable in subjects with CVD, especially in acute coronary syndrome (Jiang et al., 2013; Kilpi, Konttinen, Silventoinen, & Martikainen, 2015; Dupre & Nelson, 2016) shows that unmarried individuals are more susceptible to suffer cardiac events and are associated with higher mortality. Nevertheless, looking at gender differences, it appears that women always have increased risk of cardiac events than men whatever their marital status (Jiang et al., 2013).

Another psychosocial factor which has been studied most recently is perceived control. This study found a low perception of control over health (low perceived control) on the part of women. Our results are corroborated by in the study by Doering et al. (2011).

Evidence has shown that a low perceived control has a negative impact on cardiovascular health and promotes negative emotional states (anxiety and depression) considered drivers of cardiovascular problems (Moser et al., 2009; Doering et al., 2011; Mckinley et al., 2012; Pacheco & Santos, 2014, 2015).

Looking at the results of this study, we found that, compared to men, women do not smoke. This did not surprise us, since overall smoking prevalence is roughly five times higher in men than in women (48% vs 10%) (Appelman et al., 2015). However, it is important to note here that the evidence suggests that women who smoke cigarettes have a 25% higher risk of developing

CVD, compared to men who smoke, regardless of the intensity of consumption or other cardiovascular risk factors (McSweeney et al., 2016). Several studies also show that quitting smoking in both genders has similar benefits in reducing the risk of CVD (Perk et al., 2012; Appelman et al., 2015; McSweeney et al., 2016).

With regard to the results which show a high rate of inactivity among women (66.1%), we can see that they are supported by research by Prata et al. (2016), which reveals that lower levels of education or occupation are associated with lower levels of exercise among women. Kotseva et al. (2016) also concluded that approximately 60% of their sample did little or no exercise and that the percentage of women who mentioned doing physical exercise was lower compared to men (30.8 vs 43%).

It is also noted that higher levels of negative emotional factors, including anxiety and depression, evidenced in the women in the sample, are associated with lower levels of physical activity among women. This is corroborated by studies by Mosca et al. (2011) and McSweeney et al. (2016).

Finally, another result which emerges in this study is a clear tendency for women not to consume alcohol compared to men. This result did not astonish us either, as the evidence has shown that alcohol consumption is more common in males (Prata et al., 2016). The European Society of Cardiology guidelines state that moderate alcohol intake (one or two units per day) reduced the risk of CVD relative to non-consumers. However, it warns that this situation is not very clear since there is research that casts doubt on this finding, suggesting that any use of this substance is associated with elevating blood pressure and body mass index. In terms of gender, mortality from ischemic heart disease is twice as high for women who drink alcohol in excess compared to men (Piepoli et al., 2016).

CONCLUSIONS

The evidence has shown that females have an increased risk of CVD relative to males, when considering some of their biological and psychosocial characteristics.

Our study identified some risk factors which are more prevalent in women than in men. The results also highlighted the need for people with heart disease improve their knowledge of cardiovascular risk with a view to prevention and effective treatment.

In short, health professionals, particularly nurses, should be aware that there are differences between men and women that distinguish them in relation to cardiovascular risk, making them more vulnerable to the onset of CVD. For this, these professionals should be aware of the need to collect factors that can influence the cardiovascular risk systematically, defining and implementing interventions that are in line with recommendations to reduce this risk for each gender. It is also important to develop interventions to increase perceived control since psychosocial distress factors are very common in people with these disorders, especially women. This will help to decrease psychosocial stress, preventing the exacerbation of risk and disease in individuals, and thus increase their adherence to treatment and healthy behaviours.

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ABORDAGEM E SEGUIMENTO DA DEMÊNCIA NOS CUIDADOS DE SAÚDE PRIMÁRIOS

DEMENTIA APPROACH AND FOLLOW-UP IN PRIMARY CARE

ENFOQUE Y SEGUIMIENTO DE LA DEMENCIA EN LA ATENCIÓN PRIMARIA DE SALUD

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RESUMO

Introdução: A prevalência das demências tem vindo a aumentar nos últimos anos, em paralelo com o envelhecimento da população, sendo atualmente uma patologia frequente ao nível dos cuidados de saúde primários.

Objetivo: Rever o papel do médico de família no diagnóstico e seguimento dos doentes com demência.

Métodos: Revisão teórica mediante a pesquisa de normas de orientação clínica, revisões sistemáticas e artigos originais na PubMed, Clinical Key, UpToDate, Index de Revistas Portuguesas, nas línguas inglesa e portuguesa, de janeiro de 2006 a setembro de 2016 utilizando os termos MeSH: “Dementia”, “Primary Health Care”, “Primary Care Nursing” e “Physician Primary Care”.

Resultados: Perante a suspeita de quadro demencial é importante efetuar uma história clínica pormenorizada ao doente com a colaboração dos familiares e/ou cuidadores com enfoque nos sintomas cognitivos, comportamentais e alterações nas atividades da vida diária. De seguida, deve proceder-se ao exame objetivo e à aplicação de testes de avaliação cognitiva, psicoafetiva e funcional reservando-se, por último, uma avaliação analítica e imagiológica. De igual relevância é o papel do médico de família no tratamento/orientação posterior do doente e apoio aos familiares e cuidadores na gestão dos cuidados.

Conclusões: O médico de família encontra-se numa posição privilegiada para uma deteção precoce da demência. O diagnóstico é essencialmente clínico e nem sempre é fácil numa fase inicial. O papel dos médicos e outros profissionais dos Cuidados de Saúde Primários não deve limitar-se à avaliação inicial, mas deve estender-se ao seguimento e orientação posterior do doente e respetivos familiares.

Palavras chave: Demência; médico de família; cuidador

ABSTRACT

Introduction: The prevalence of dementia has been increasing in recent years in parallel with an ageing population. Today it is a common pathology in primary care level.

Objectives: To review the family physician’s role in diagnosing and following up on patients with dementia.

Methods: Theoretical review based on researching clinical guidelines, systematic and original articles published in English and Portuguese in PubMed, Clinical Key, UpToDate, the Index of Portuguese Journals from January 2006 to September 2016 using the MeSH terms: “Dementia,” “Primary Health Care,” “Primary Care Nursing” and “Primary Care Physician.”

Results: When dementia is suspected, it is important to resort to family members and/or caregivers’ cooperation, to conduct a thorough medical history of the patient, focusing on behavioural and cognitive symptoms and changes in daily activities. Subsequently, an objective examination should be carried out and an array of cognitive, psycho-affective and functional assessment tests applied. Finally, an analytical and imaging evaluation should be performed. Equally important is the role of the family physician in the patient’s subsequent treatment/guidance and support to families and caregivers in care management.

Conclusions: The family physician is in a prime position for early detection of dementia. Clinical diagnosis is essential and is not always easy at an early stage. The role of doctors and other professionals in primary health care should not be limited to the initial assessment, but should extend to following up on and guiding the sick and their respective families.

Keywords: Dementia; family physician; caregiver

RESUMEN

Introducción: El predominio de las demencias ha aumentado en los últimos años, en paralelo con el envejecimiento de la población, siendo actualmente una patología muy frecuente en la atención primaria de salud.

Objetivo: Revisar el papel del médico de Medicina Familiar y Comunitaria en el diagnóstico y seguimiento de pacientes con demencia.

Métodos: Revisión teórica a través de búsqueda de normas de orientadoras clínicas, revisiones sistemáticas y artículos originales en bases de datos como PubMed, Clinical Key, UpToDate, y índices de Revistas Portuguesas, en portugués o inglés, entre Enero de 2006 y Septiembre de 2016, utilizando los términos MeSH: “Dementia”, “Primary Health Care”, “Primary Care Nursing” e “Physician Primary Care”.

Resultados: Ante la sospecha de demencia es importante realizar una historia clínica completa del paciente recurriendo a la ayuda de miembros de la familia y/o cuidadores que se centre en los síntomas cognitivos y cambios de comportamiento en las actividades de la vida diaria. A continuación, debe procederse al examen objetivo y la aplicación de las pruebas cognitivas, psicoafectivas y funcionales, reservando, para el fin, una evaluación analítica y de imagen. Igual de importante es el papel del médico de Medicina Familiar y Comunitaria en el tratamiento y orientación posterior del paciente y apoyo a las familias y cuidadores en la gestión de la atención.

Conclusiones: El médico de Medicina Familiar y Comunitaria se encuentra en una posición privilegiada para la detección precoz de la demencia. El diagnóstico de la demencia es básicamente clínico, pero no es siempre fácil de detectar en una fase temprana. El papel de los médicos, así como de otros profesionales de la Atención Primaria de Salud, no se debe limitar a la evaluación inicial, sino que debe extenderse al seguimiento y orientación de los enfermos y sus respectivas familias

Palabras clave: Demencia; médico de medicina familiar y comunitaria; cuidador

INTRODUCTION

The term "dementia" derives etymologically from the Latin word *dementia* which means deprivation of the mind (Pinho, 2008). It is a complex, chronic and progressive disorder characterized by cognitive impairment which involves one or more functions (learning, memory, language, visuospatial skills and executive function), personality changes and decreased overall operation (Boustani, Schubert & Sennour, 2007; Holzer, Warner & Iliffe, 2013; Larson, 2016).

In Portugal, like other European countries, there is a growing aging population. The demographic picture in our country is characterized by a continued increase in life expectancy at birth, reduced child mortality, increased emigration, declining birth rates and consequently an aging population. Between 2011 and 2013, the aging index of the population (which reflects the number of people over 65 per 100 individuals under the age of 15 years) rose from 128 to 136 and demographic forecasts indicate that this will reach a value on the order of 287 to 464 per 100 young people in 2060. At that time, the elderly population is expected to be 36-43% of the population (Santana, Farinha, Freitas, Rodrigues & Carvalho, 2015).

The incidence and prevalence of dementia increases with age, doubling approximately every 5 years after age 65, such that a value of 0.8% in the age group from 65 to 69 years increases to 28.5% over the age of 90 years (Pinho, 2008).

The family physician is often the first physician the patient with suspected dementia turns to, although approximately 39% resort to other specialists, including neurologists or psychiatrists (Galvin & Sadowsky, 2012; Samsi & Manthorpe, 2014). Primary health care services (PHC) represent patients' first level of access to the National Health System. They allow regular contact with their respective family physician with whom they have some familiarity and establish a doctor/patient relationship of trust. They also allow hospital referral when indicated. Therefore, many authors consider PHC the first line for a timely diagnosis of dementia (Pinho, 2008; Boustani et al., 2007).

In this context, the aim of this article is to address the importance of the family physician in diagnosing and managing patients with dementia. To this end, research was conducted into clinical guidelines, systematic reviews and original articles published in English and Portuguese in PubMed, Clinical Key, UpToDate, the Index of Portuguese Journals from January 2006 to September 2016. The use of the following MeSH terms underpinned this research: "Dementia", "Primary Health Care," "Primary Care Nursing" and "Primary Care Physician," whether associated or not and sometimes supplemented by specific terms. In this selection, we gave priority to publications focusing on diagnosing dementia and care for patients with this condition, as well as their respective caregivers, within the scope of PHC.

1. DEVELOPMENT

1.1 - Epidemiology

Studies on the epidemiology of dementia in Portugal are few in number and limited to specific geographical areas affecting the North. Between 2003 and 2008, the first population based study in Portugal was conducted. It found an overall prevalence of dementia in the population between the ages of 55 and 79 years of 2.7% (Nunes et al., 2010). In 2006, another study was carried out on the Portuguese population under observation of the Sentinel-doctors Network with the objective of estimating the prevalence of dementia diagnosed in PHC. The prevalence of this pathology in people over the age of 35 years was found to be 0.7%; and the highest rate (3.0%) was found in people aged over 75 years (Rodrigues Sousa-Uva, Galvão, Nunes & Dias, 2014).

A study was conducted recently by Santana et al. (2015) with the aim of estimating the prevalence of dementia/Alzheimer's disease in Portugal and to infer from prescriptions the number of effective diagnoses and the financial burden of the medication. A prevalence of dementia of 5.91% was estimated in individuals over the age of 60 years with an annual cost of €37 million. The cost of the medication includes direct costs along with costs deriving from professional fees, clinical examinations, hospitalizations, outsourced services supporting patients' daily care, among others. Nevertheless, it is worth highlighting entitled indirect costs of dementia are significant in the economies of families and health systems. It is also worth stressing that there are costs related to patients leaving the labour force early, decreased work attendance, as well as informal caregivers abandoning their occupations, morbidity increases in caregivers, among others.

Although there is no curative treatment, early diagnosis and implementation of treatment is essential to prevent progression to more advanced stages of the disease. In addition, at an early stage, the diagnosis will allow legal and financial issues to be planned as well as those related with patient safety so as to prolong their independence. It also enables caregiver burden to be reduced by conveying information about the disease, support groups and monitoring as provided by appropriate services in order to delay the patient's institutionalization (Dodd, Cheston & Ivanecka, 2015; Holzer et al., 2013; Pinho, 2008).

Generally speaking, the public perception of dementia is that most people are institutionalized in short-term or long-term care units. However, this is an inaccurate view since most patients with dementia reside at home with caregivers who are often the same age or older (Darrow, 2015).

Dementia is still underdiagnosed and the time from the onset of symptoms to diagnosis is prolonged. There are several obstacles that may be the basis of this pathology's late diagnosis involving the patient, the physician and the health system. With respect to the patient, it is worth emphasizing the lack of knowledge about the typical symptoms of dementia, denial before functional and cognitive changes and the stigma associated with the disease. The medical-related obstacles include the difficulty in differentiating changes inherent to memory loss brought about by the normal aging process and the early stages of dementia, pessimism about treatment and prognosis, lack of skills in recognizing dementia, as well as the belief that diagnosis of this condition should be conducted by specialists. As for the health system, it is worth mentioning the lack of time and resources in PHC to address this issue (Dodd et al., 2015; Holzer et al., 2013; Pinho, 2008).

1.2 - Definition and classification

There are several definitions of dementia; however, we will base ours on the American Psychiatric Association's proposal (2014) presented in the DSM-5 manual. It represents a reasonable and useful tool in clinical practice. According to the DSM-5, the criteria for dementia (currently designated major neurocognitive disorder) include identification by clinical history and evaluation of cognitive impairment in at least one of the cognitive areas (learning and memory, language, executive ability, attention, perceptual motor function and social cognition). It must be severe enough to interfere with the autonomy in DLA representing a decline from a previous level of functioning and occurring in the absence of confusional syndrome (delirium). In the case of neurodegenerative dementia, Alzheimer's disease, for example, these changes are insidious, progressive and based on clinical history and cognitive assessment studies. The changes found are not explained by other mental disorders.

Dementias can be generally classified into primary and secondary (Table 1). Primary dementias account for most cases and are associated with an irreversible degenerative brain disorder. Alzheimer's disease is the most common type and is present in approximately 60 to 80% of cases. This is followed by vascular dementia, dementia with Lewy bodies and frontotemporal dementia (Alves & Caetano, 2010; Holzer et al., 2013; Larson, 2016; Pinho, 2008). Some studies reveal that an overlap of pathologies is more common than previously thought, particularly with an overlap of Alzheimer's disease with vascular dementia and dementia with Lewy bodies, while the frontotemporal dementia tends to be erroneously misdiagnosed as Alzheimer's disease (Holzer et al., 2013). It should be noted that in the study by Rodrigues et al. (2006) to estimate the prevalence of dementia cases diagnosed in PHC, there was a higher percentage of vascular dementias in Portugal compared to other European countries. This seems to be related to the high prevalence of hypertension in the Portuguese population.

Secondary dementias include a wide range of causes. Some may be reversible, drug intoxication, those arising in the context of depression or normal pressure hydrocephalus, among others. These represent fewer than 2% of cases (Alves & Caetano, 2010; Darrow, 2015).

Table 1 - Causes of dementia

Primary Dementias - degeneratives	**Secondary Dementias**
• Alzheimer's disease	• Vascular dementia
• Dementia with Lewy bodies	• Vitamin deficiency
• Frontotemporal dementia	• Endocrine
• Others	• Infections of the central nervous system (CNS)
	• Toxic
	• Drug
	• Head Injuries
	• Expansive lesions of the CNS
	• Normal pressure hydrocephalus

Source: Alves e Caetano (2010); Pinho (2008); Souza et al. (2009)

1.3 - Diagnostic approach

According to the American Association of Neurology and the US Preventive Services Task Force (USPSTF), there is at present no scientific evidence to recommend screening of dementia in healthy elderly people (Larson, 2016). However, these entities, together with others which are significant in this area, emphasize the importance for physicians to be alert and carry out timely assessments of patients with suspected cognitive decline (Pinho, 2008). According to Poggesi and Pantoni (2009), screening for cognitive decline should be performed in three groups of patients: those with cardiovascular risk factors; those with cognitive or minimal, subjective behaviour changes reported by family members; those returning home after cerebral vascular accidents.

1.4 - Clinical history

Most patients with dementia do not turn to their family physician with complaints of memory loss. It is often family members, friends or caregivers who address the issue (Larson, 2016). However, it is common for individuals to complain of occasional “memory loss” with advancing age. Studies conducted in the community suggest that 35 to 40% of the elderly aged over 75 years, who are healthy and without dementia, reported memory problems (Poggesi & Pantoni, 2009). Indeed, the aging process can condition cognitive decline which is considered normal and should be distinguished from dementia. This only affects the memory and does not affect the functional capacity of the individual (Darrow, 2015; Larson, 2016; Poggesi & Pantoni, 2009).

Given a suspicion of dementia, it is essential to carry out a detailed, thorough and complete medical history. The clinical interview should be directed not only to the patient but also to the caregiver and/or family members who live with the patient (Alves & Caetano, 2010; Holzer et al., 2013; Larson, 2016; Pinho, 2008). It is recommended that evaluating the patient occurs in at least two distinct periods, given the restrictions on PHC, including limited consultation time (Darrow, 2015; Pinho, 2008).

At first, research should fall on cognitive, psycho-behavioural and functional changes, such as difficulty learning and retaining new information (difficulty in remembering events, repeating questions, not placing objects in their proper places); difficulties in performing complex activities (managing financial issues, preparing meals); problems in terms of orientation and visuospatial ability (disorientation in familiar locations); changes in language (trouble finding the right word); impairment in reasoning and ability to make decisions (difficulties in solving problems at home or at work) and behavioural changes (apathy, irritability, mistrust). If found, they point towards diagnosis (Alves & Caetano, 2010; Larson, 2016; Pinho, 2008). It should be noted that at an early stage symptoms differ from patient to patient and can therefore be difficult to recognize. It is therefore important to first ask the caregiver/family about the patient’s previous personality, education and intellectual capacity (Holzer et al., 2013).

Then, information must be collected concerning the personal and family history of dementia that will aid in the differential diagnosis. For personal history, it is necessary to obtain relevant data, including cardiovascular risk factors (hypertension, diabetes mellitus, atrial fibrillation, etc.); neurological disorders (cerebral vascular accident, Parkinson’s disease, Huntington’s disease, etc.), psychiatric disorders (depression), infectious diseases (syphilis, HIV infection, etc.), endocrine-metabolic diseases (hypothyroidism); history of head injury; medication; alcohol, smoking and toxicological habits as well as previous surgeries (Alves & Caetano, 2010; Galvin et al., 2012; Pinho, 2008).

Age is the main risk factor for dementia. Greater susceptibility to develop this condition based on the cumulative effect of risk factors that include genetic, biological and environmental factors. Risk factors include alcohol abuse, obesity, hypertension and dyslipidaemia, while the practice of mental and social activities appear to be protective (Holzer et al., 2013).

The general physical examination is required and must include a brief neurological examination with special attention to focal neurologic signs, gait disturbance and signs of Parkinsonism ((Alves & Caetano, 2010; Larson 2016; Pinho, 2008). Causes that may affect cognitive decline such as urinary tract infection, heart failure, decreased visual or auditory acuity should be ruled out (Pond, 2012). Alterations in cardiac auscultation may suggest a vascular cause (Alves and Caetano, 2010). On suspicion of vascular aetiology of dementia, the physical examination should focus especially on the cardiovascular system. Peripheral pulses, blood pressure, body mass index (BMI) and waist circumference must be evaluated (Poggesi & Pantoni, 2009). Thyroid enlargement can mean a secondary endocrine dementia. Signs of liver disease, alcoholism and renal failure should also be looked for (Alves & Caetano, 2010).

1.5 - Cognitive, psychoaffective and functional evaluation

Following the clinical history it is crucial to undertake a cognitive, psycho-affective and functional assessment. The cognitive assessment helps to detect and characterize cognitive deficit. According to the standard of the General Health Directorate (DGS), No. 053 of 27/12/2011 on the therapeutic approach of cognitive changes translated tests which are adapted to the language and cultural context of the country should be used.

The brief mental status examination (Mini-Mental State Examination, MMSE) is a test that is quickly run and assesses orientation, attention, retention, language and ability to follow instructions. With a possible score ranging from zero to thirty, a score less than equal to 15 for illiterate people, less than or equal to 22 for individuals with 1 to 11 years of schooling and less than or equal to 27 for individuals with higher education, is considered cognitive impairment. This test is limited in that it is not generally altered in the early stages of cognitive decline. Given that it does not assess executive function, it is considered to be complemented with the Clock Test (Alves & Caetano, 2010; Norma da DGS nº 053/2011; Pinho, 2008).

The Montreal Cognitive Assessment test (MOCA) is more sensitive in detecting the early stages of cognitive decline and encompasses several cognitive domains including executive function. The maximum score is 30 and a score below 26 is considered abnormal. In some instances a more extensive cognitive assessment may be necessary, with a more detailed characterization of the affected cognitive domains which should be performed by professionals, including psychologists and other professionals with proper training (Larson, 2016; Norma da DGS nº 053/2011).

Of equal importance is evaluating depressive symptoms. This can be carried out by applying the Geriatric Depression Scale. The answers compatible with depression receive one point and a 3-5 point score confirms the diagnosis. If, on the one hand, depression can interfere with cognition and be wrongly diagnosed as dementia, on the other hand, it can also be present in dementia, occurring with some frequency (Norma da DGS nº 053/2011).

The functional patient evaluation will assess the individual's performance in DLA. The questions are directed to the caregiver/family who accompanies the patient daily. The questionnaire functional activities, for example, can be used. This tool assigns a score from 0 to 3 according to whether activities are performed normally, with difficulty or help, or the individual is unable to perform the activity. A score less than or equal to 9 suggests there is functional dependency (Alves & Caetano, 2010; Pinho, 2008).

1.6 - Laboratory tests and other tests

To identify or rule out secondary causes of dementia or other diseases it is necessary to use an analytical assessment (Souza, Sarazin, Goetz & Dubois, 2009). The American Academy of Neurology recommends only studying thyroid function and determining vitamin B12 levels in an initial assessment of individuals with dementia. They add that to date there is no clear data supporting the routine request of other laboratory tests (Larson, 2016). Serology of HIV and Syphilis is not recommended unless there is clinical suspicion (Larson, 2016; Souza et al., 2009).

Alternatively, and according to the recommendation by DGS standard No. 053/2011, laboratory blood tests including complete blood count, blood sugar, calcemia, ionogram serum, liver function, kidney, thyroid, vitamin B12 , folic acid and serologic test for syphilis should be ordered in an initial assessment. Some authors consider assessment of lipid form, homocysteine level and performing chest radiography and electrocardiography may be indicated in specific situations (Pond, 2012). Lumbar puncture should be performed in patients with atypical manifestations of dementia, as in, for example, young patients (<60 years) and rapidly progressive dementia (Larson, 2016; Souza et al., 2009). In these cases an electroencephalogram (EEG) and more specific serological tests may also be indicated (Larson, 2016).

Conducting a neuroradiological examination is indicated to rule out treatable causes of cognitive decline and to provide information to determine the specific causes of dementia (vascular changes, abscesses, subdural hematoma and normal pressure hydrocephalus) (Darrow, 2015; Norma da DGS nº 053/2011; Poggesi & Pantoni, 2009). However, the use of neuroimaging studies in patients with dementia is controversial. While some authorities advise conducting an imaging study in all patients, others limit it to patients with atypical clinical presentations (Larson, 2016; Pinho, 2008). The imaging exam chosen must be computed tomography (CT) of the skull and brain due to the lower cost and greater availability of this exam (Darrow, 2015; Norma da DGS nº 053/2011; Pinho, 2008). Magnetic resonance imaging (MRI) is superior in demonstrating brain lesions, including ischemic changes, which may be important in diagnosing vascular dementia (Norma da DGS nº 053/2011). Some authors consider that this may be useful in evaluating patients who have at least one of the following characteristics: dementia at an age under 65 years; sudden onset and rapid progression of symptoms; presence of focal neurological deficits; clinical assessment compatible with normal pressure hydrocephalus (ataxia, urinary incontinence, cognitive decline); history of recent head injury (Darrow, 2015; Pinho, 2008).

1.7 - Patient follow-up

After confirmation of the clinical suspicion of dementia it is essential to refer the patient in a timely manner to secondary health care in order to institute appropriate pharmacological therapy. However, in parallel, or prior to beginning drug treatment, a non-pharmacological approach should be implemented in order to stabilize or improve cognitive function and reduce psychological and behavioural symptoms which are characteristic of dementia (Alves & Caetano, 2010; Darrow, 2015; Holzer et al., 2013). This approach should be multidisciplinary and include not only the family physician but also the caregiver/family, psychologists, occupational therapists, nurses and social workers (Figure 1).

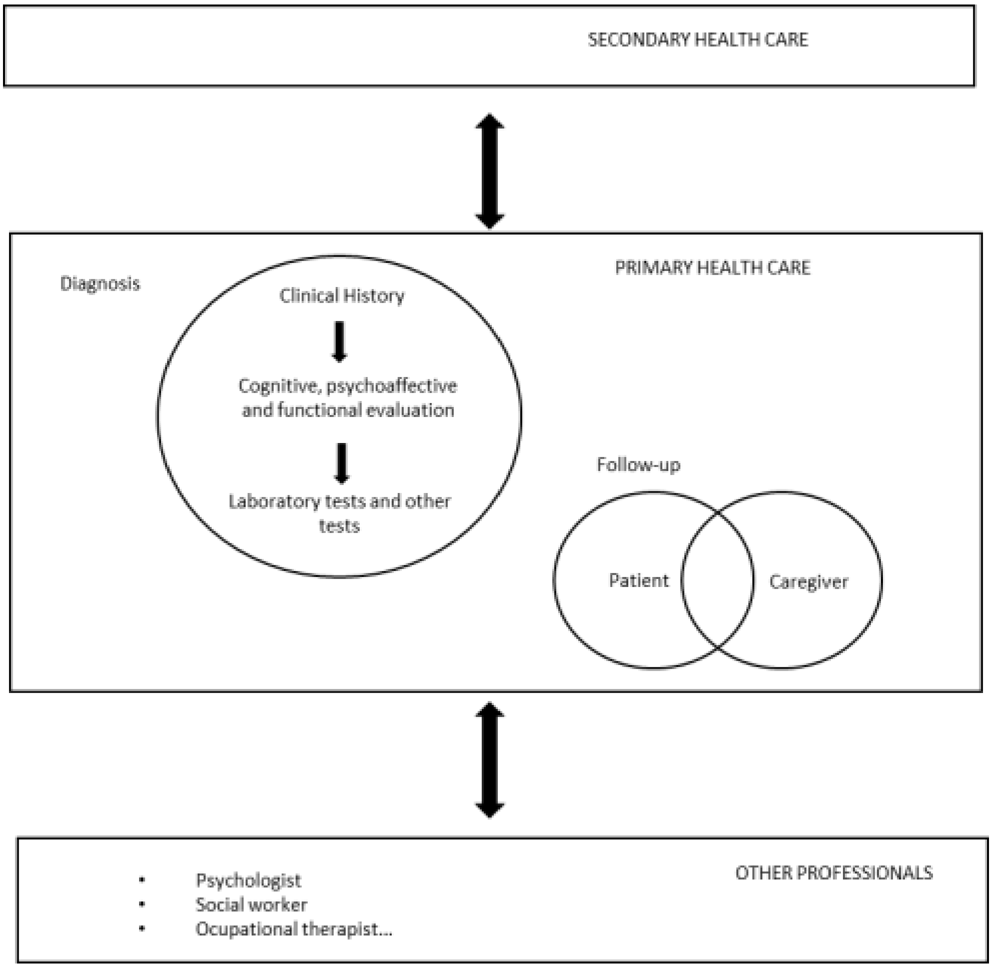

Figure 1 – Approach to dementia in primary health care

Family doctors should inform patients and caregivers on existing resources in the community that may be useful to improve the patient's quality of life, such as day centres, long-term care at home and inpatient institutions. They should also provide information about support groups and manage patients' needs as well as their families' so as to accompany patients in the course of the disease. It is also important to schedule appointments at the health unit at intervals of 4 to 6 months, and to evaluate disease progression, complications, nutritional status and health and safety at home as well as medication adherence. Conducting at least one home visit is extremely important to determine the safety conditions at home and recommend necessary adjustments where possible (Alves & Caetano, 2010).

It is important to familiarize patients with their environment (pictures, curios, etc.) and introduce a routine in their daily activities as far as possible, for example, establish a schedule for meals, medication and bedtime. Simple physical exercise and recreational activities, such as dancing, singing or playing games seem to be effective in reducing anxiety and some behavioural symptoms and are thus recommended (Darrow, 2015). It is also important to be alert to the possibility of caregiver change or the addition of new caregivers as this situation may generate agitation and confusion (Alves & Caetano, 2010).

It further worth noting the crucial role of caregiver in following up on the patient with dementia. Creating a partnership between the family physician and caregiver introduces an improvement in the approach and treatment of patients with dementia. Many caregivers are the same age or even older and consideration should be given to caregivers themselves as patients also. They are at increased risk of depression and physical illness, such as, cardiovascular and respiratory diseases and blood pressure (Galvin et al., 2012; Norma da DGS nº 053/2011). In addition to research into distress signals (complaints of stress, sleep disturbance and others), overload, or psychiatric symptoms, caregiver assessment should also focus on their knowledge about the disease, expectations of treatment and services, quality of the patient-caregiver relationship and family conflicts (Boustani et al., 2007; Norma da DGS nº 053/2011). Evaluating the caregiver's health status can lead to the implementing measures to minimize patient/caregiver conflict and allow delaying patient institutionalization (Galvin et al., 2012).

CONCLUSION

The increase in the elderly population in Portugal has been accompanied by an increase in the number of cases of dementia. According to population projections, it is estimated that in the coming decades, this figure will continue to grow.

This is a complex and progressive condition characterized by changes in memory, behaviour, personality and overall functioning, whose diagnosis is essentially clinical but is not always easy in the early stages. Family physician, with their close relationship with patients and in following them over the years, are thus in a prime position for the early detection of dementia.

Given the suspicion of dementia, it is advisable to evaluate the patient in at least two consultations and the medical history should be extended to a caregiver/close relative of the patient. This should be based on personal history, family history, previous personality and the patient's level of education. Additionally, there should be to a cognitive, psychoaffective and functional assessment and laboratory and imaging tests should be requested to clarify the diagnosis and rule out a secondary cause.

The role of the family and other PCH professionals should not be limited to the initial assessment, but should also be extended to follow-up and guidance of the patient and their respective family members/caregiver in close coordination with the various stakeholders that make up the network of patient support.

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PREVENÇÃO DE QUEBRAS CUTÂNEAS NO IDOSO DEPENDENTE: CONTRIBUTO DA METODOLOGIA DE CUIDAR HUMANITUDE

PREVENTION OF SKIN TEARS IN THE DEPENDENT OLDER PERSON: CONTRIBUTION OF THE HUMANITUDE CARE METHODOLOGY

PREVENCIÓN DE SKIN TEARS EN EL ANCIANO DEPENDIENTE: CONTRIBUCIÓN DE LA METODOLOGÍA CUIDAR HUMANITUDE

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Prevention of Skin Tears in the Dependent Older Person: Contribution of the Humanitude Care Methodology. *Millenium, 2*(3), 45-51.

RESUMO

Introdução: O envelhecimento carateriza-se pelo declínio das capacidades físicas e cognitivas aumentando a suscetibilidade do idoso à dependência. Este fator, juntamente com as alterações fisiológicas da pele potenciam o aparecimento de quebras cutâneas. Estas feridas são frequentes nos idosos e muitas vezes estão relacionadas com a forma como são cuidados, daí a importância de cuidar com humanitude evitando intervenções em força.

Objetivos: Este estudo pretende identificar e analisar as evidências científicas, relacionadas com o contributo de cuidar com humanitude na redução da agitação e prevenção de quebras cutâneas no idoso dependente.

Métodos: Revisão Integrativa da Literatura dos artigos publicados no período de 2011 a 2016, disponíveis na íntegra em português e inglês, nas bases de dados EBSCOhost e Google Académico.

Resultados: De um total de 75 artigos após a aplicação dos critérios de inclusão e exclusão obteve-se um total de 5 artigos.

Conclusões: Os estudos evidenciam que a aplicação da Metodologia de Cuidar Humanitude, por utilizar técnicas suaves no cuidar, demonstra particular efetividade em idosos dependentes, reduzindo os comportamentos de agitação patológica e oposição/recusa aos cuidados, prevenindo as forças de cisalhamento, fricção e contusão na pele.

Palavras-chaves: Humanitude; cuidados de enfermagem; idosos; agitação; quebras cutâneas.

ABSTRACT

Introduction: Aging is characterized by a decline in physical and cognitive functioning, increasing the older person's vulnerability to dependence. The age factor and the associated physiological skin changes contribute to the occurrence of skin tears. This type of wounds is common in older people and often results from care delivery, hence the importance of caring with Humanitude and avoiding the use of force during interventions.

Objectives: This study aims to identify and analyze the current scientific evidence on the contribution of the Humanitude care methodology toward reducing the agitation and preventing skin tears in dependent older people.

Methods: Integrative literature review of articles published between 2011 and 2016, available in full text and written in Portuguese and English, in the EBSCOhost and Google Scholar databases.

Results: Of a total of 75 articles, five articles were obtained after applying the inclusion and exclusion criteria.

Conclusions: The studies showed that the application of the Humanitude care methodology, by using gentle caring techniques, is particularly effective in dependent older people by reducing their pathological agitation behaviors and opposition to treatment/refusal of care and preventing shearing, friction, and bruising.

Keywords: Humanitude; nursing care; elderly people; agitation; skin tears.

RESUMEN

Introducción: El envejecimiento se caracteriza por la disminución de las capacidades físicas y cognitivas aumentando la susceptibilidad del anciano a la dependencia. Este factor, junto con los cambios fisiológicos de la piel potencia el aparecimiento de lesiones cutáneas laceradas. Estas heridas son comunes en los ancianos y, a menudo están relacionadas con la forma como son cuidados por eso es importante el cuidar con humanitude evitando el uso de intervenciones en fuerza.

Objetivos: Este estudio pretende identificar y analizar las evidencias científicas disponibles actualmente relacionadas con la contribución de cuidar en humanitude en la reducción de la agitación de las personas cuidadas, y también la prevención de lesiones cutáneas laceradas en el anciano dependiente.

Métodos: Revisión Integradora de la Literatura de los artículos publicados entre 2011 y 2016, disponibles en la íntegra en portugués e inglés, en las bases de datos EBSCOhost y Google Academico,

Resultados: De un total de 75 artículos después de la aplicación de los criterios de inclusión y exclusión se obtuvo un total de 5 artículos.

Conclusiones: Los estudios demuestran que la aplicación de la Metodología Cuidar Humanitude, mediante el uso de técnicas suaves en el cuidado de la persona, muestra una efectividad particular en los ancianos dependientes, reduciendo los comportamientos de agitación patológica y la oposición/rechazo a los cuidados, previniendo las fuerzas de cizallamiento, la fricción y contusión en la piel.

Palabras Clave: Humanitude; cuidados de enfermería; ancianos; agitación; lesiones cutáneas laceradas.

INTRODUCTION

Aging is characterized by the natural decline of physical and cognitive functioning, thus increasing older people's vulnerability to dependence. The age factor and the associated physiological skin changes contribute to the occurrence of skin tears (LeBlanc & Baranoski, 2014). Skin tears are defined as traumatic wounds caused by shearing or friction forces resulting in the separation of the epidermis from the dermis; a skin tear can be partial-thickness, full-thickness, or without loss of tissue (Battersby, 2009). This type of wounds are common in dependent older people (LeBlanc & Baranoski, 2009, 2011).

Despite the negative impact on older people's physical and psychosocial health and the significant treatment costs associated with skin tears, healthcare institutions tend to undervalue these wounds (Ribeiro, 2013; Santos, Gomes, Barreto, & Ramos, 2013).

Therefore, nurses should possess knowledge about the prevention of skin tears, not only by adopting internationally established measures, but also by using innovative evidence-based care methodologies that are appropriate to the individual older patient. A literature review was conducted to answer the following research question: "What is the contribution of the Humanitude care methodology in reducing agitation and preventing skin tears in dependent older people?"

Studies show that nurses should be aware of this issue and intervene for reducing the prevalence and incidence of skin tears during care delivery to dependent older people, by avoiding sudden movements and using appropriate positioning and transferring techniques (Stephen-Haynes, 2012; LeBlanc and Baranoski, 2014). However, the authors of these studies do not operationalize or systematize how these procedures should be performed and what techniques should be used.

The Humanitude care methodology is an important tool for reducing the risk of complications during care delivery by using accurate and replicable techniques to establish how nurses should interact with patients. This care methodology is particularly effective in dependent patients and in patients with cognitive alterations by avoiding pathological agitation behaviors through a 5-step sensory capture process: openings, preliminaries, sensory circle, emotional consolidation, and appointment (Gineste & Pellissier, 2008; Phaneuf, 2010; Simões, Salgueiro, & Rodrigues, 2011; Salgueiro, 2014). According to these authors, nurses who provide care using the principles of the Humanitude philosophy should never use force or surprise, focusing their attention on the conservation of the patients' life forces and promotion of their autonomy and independence, and preventing complications, and physical and psychological damage during care delivery.

This study aims to identify the main scientific evidence available on the risk factors for skin tears among dependent older people and identify the contribution of the Humanitude care methodology toward the prevention of this type of wounds.

1. THEORETICAL FRAMEWORK

The Portuguese population aging that results from the increasing life expectancy and declining birth rate is today a priority health issue (Firmino, Nogueira, Neves, & Lagarto, 2014).

In the last few decades, demographic changes have drawn attention to old age, namely in what concerns the higher incidence of dependence in Activities of Daily Living (ADLs) (Sequeira, 2007).

The increase in the aging rate has led to a greater prevalence of degenerative diseases (OMS, 2016; INE, 2016), and behavioral change is the major predictor of institutionalization (OCDE, 2015). This situation raises serious challenges during care delivery, often leading caregivers to use force (Delmas, 2013) or physical restraints , which may increase the patient's agitation (Faria, Penaforte, & Martins, 2012) and cause skin tears given the skin fragility to mechanical forces (Souza & Santos, 2006). LeBlanc and Baranoski (2011) report that, with increasing age, individuals experience subcutaneous tissue loss and epidermal thinning, as well as a decrease in elasticity and tensile strength. Stephen-Haynes and Carville (2011) support this statement by reporting a loss of 20% in dermal thickness, which, in turn, causes the reduction in blood supply and collagen.

Skin tears, although less severe than chronic wounds, are painful due to the skin's heightened sensitivity (Souza & Santos, 2006). According to LeBlanc and Baranoski (2011), the prevalence rates of skin tears are equal to or greater than pressure ulcers. However, this type of wound is not often reported, which means that the incidence of skin tears is actually greater than expected.

According to LeBlank and Baranoski (2011), a skin tear is a common traumatic wound in older people with vulnerable skin that usually occurs on the extremities as a result of friction force. The International Skin Tear Advisory Panel (ISTAP) recently revised its definition as a wound resulting from shearing, friction, and/or blunt trauma that causes separation of skin layers and, consequently, skin breakdown (Ribeiro, 2013).

According to LeBlanc and Baranoski (2011), skin tears are mainly caused by the person's or caregiver's movements while using technical aids, medical equipment, furniture, or environmental factors. According to these authors, skin tears tend to occur during the peak activity/care delivery hours of 6:00 AM to 11:00 AM and 3:00 PM to 9:00 PM. Dependent older people are more affected because they are prone to falls, and require assistance for transferring and performing ADLs (LeBlanc & Baranoski, 2011).

The ISTAP developed a set of guidelines for the prevention, identification, and management of skin tears, namely on the assessment of risk factors for skin tears. Risk factors are divided into three categories: general health, mobility, and skin. The factors related to the general health are chronic and/or critical diseases, polypharmacy, and cognitive, sensory, visual, auditory, and nutritional impairment. The factors related to mobility are history of falls, impaired mobility, need of assistance with ADLs, and mechanical trauma. However, some studies show that agitated older patients with impaired cognition and mobility are at greater risk for skin tears (LeBlank & Baranoski, 2011).

Caring for these people can be even more difficult due to a lack of understanding of the behaviors (Pinto & Queirós, 2015), leading caregivers to use inappropriate techniques that are misunderstood by patients, who become even more agitated (Gineste & Pellissier, 2008). Therefore, in accordance with the Ordem dos Enfermeiros (2001, p. 7), "the major challenge for nursing is to reform methods and techniques that have been shown not to benefit the citizens" by innovating and improving methodological tools.

The Gineste-Marescotti® Methodology (MGM®), also known as Humanitude care methodology, has proved to be a caring tool with very positive relational outcomes by reducing behaviors of agitation and opposition to treatment/refusal of care (Araújo, Alves, & Oliveira, 2012; Araújo, Melo, & Silva, 2014). This care methodology was developed by Gineste and Marescotti and is based on the Philosophy of Humanitude (Gineste & Pellissier, 2008).

MGM® is based on four key pillars: gaze, speech, touch, and verticality. It promotes the systematization and professionalization of the relationship through a Structured Sequence of Care Procedures, allowing the sensory capture in patients (Phaneuf, 2010; Simões et al., 2012; Salgueiro, 2014).

The sensory capture entails the 5 dynamic and successive steps, namely openings and preliminaries (which correspond to the preparation of care), sensory circle or care delivery, emotional consolidation (which corresponds to the end of care delivery), and appointment so as to avoid a feeling of abandonment (Gineste & Marescotti, 2008; Simões et al., 2012; Salgueiro, 2014).

The first step concerns the openings (knocking on the patient's bedroom door and/or the bed's foot board, and waiting for the patient to reply), with the purpose of preparing the patient for the nursing meeting and avoid surprising him/her in care delivery. This technique allows respecting the patient's privacy, freedom, and autonomy (Simões et al., 2012; Salgueiro, 2014).

The second step concerns care preliminaries, which aim to establish a relationship of trust and promote the acceptance of care through the use of three key pillars: gaze, speech, and touch (Gineste & Pellissier, 2008, Simões et al., 2012). According to these authors, gaze allows establishing a connection with the patient, capturing his/her attention. It must be axial, horizontal, long, and close for the promotion of a relationship of equality, openness, trust, tenderness, and intimacy (Salgueiro, 2014).

According to Gineste and Pellissier (2008), after the attention is captured, the speech should be smooth, melodious, deep, meaningful, and descriptive. For these authors, when this communication channel is effectively open, the use of positive words reduces agitation and promotes the patient's well-being.

The touch, as an essential part of non-verbal communication, should start in the body's social areas (e.g., hand shake) or neutral areas (e.g., hand, arm, and shoulder). It should be continuously maintained until the end of care delivery in order to promote an effective connection with the older person (Gineste & Pellissier, 2008).

After the consent for care, the third step begins: sensory circle. This step is translated into a state of well-being that is achieved when all sensory inputs (vision, audition, touch) are positively consistent, leading to muscle relaxation and facilitating care provision (Simões et al., 2011; Salgueiro, 2014).

According to Gineste and Pellissier (2008), in case of an individual with agitation behaviors and unable to communicate verbally, techniques such as auto-feedback, that consists in a predictive (announcing what will be done) and descriptive speech (positively describing the care that is being provided), involve the person in care delivery and allow avoiding the use of surprise approaches and force.

Care delivery ends with a fourth step: emotional consolidation. When nurses positively reinforce the patient by valuing the nursing meeting and the patient's effort, collaboration, and progress made during care, they are promoting a positive image that is recorded in the emotional memory during the restorative sleep (Gineste & Pellissier, 2008; Simões et al., 2012; Salgueiro, 2014). In this way, this affective memory will positively influence the subsequent care delivery moments, reducing the patient's agitation and aggressiveness (Phaneuf, 2010). A new nursing meeting is scheduled when the nurse says goodbye to the patient with the purpose of preventing the patient from feeling abandoned and neglected (Gineste & Pellissier, 2008).

The relational techniques that integrate this care methodology are characterized by smoothness, particularly the "tender touch", which precludes grabbing the older person's wrist or forearm. This form of grabbing, which implies exerting pressure with the finger tips, hurts the older person and causes bruising, or even injuries in their forearms (Gineste & Pellissier, 2008). For these authors, the nurse should professionalize and humanize the touch so that it is interpreted as a touch of recognition and promotion of the older person's well-being.

MGM respects the modern gerontology standards by advocating that force should not be used during care delivery since it is a threat to the patient's physical and psychological integrity and a trigger factor for agitation behaviors (Simões et al., 2011; Salgueiro, 2014).

Thus, care methods that humanize care should be adopted by avoiding the provision of care using force. In this sense, care professionalization is an ethical imperative to ensure the promotion of a protective and harmless environment that respects the individual as a human being in a situation of vulnerability (Phaneuf, 2010; Salgueiro, 2014).

2. METHODS

This study followed the principles of Integrative Literature Reviews (ILR), with a view to answering the research question that was previously formulated based on the PI(C)OD strategy (Participants; Intervention; Outcomes and Design) (Ramalho, 2005).
The following research question was formulated: "What is the contribution of the Humanitude care methodology in reducing agitation and preventing skin tears in dependent older people?".

2.1 Search databases

This ILR was conducted based on a search in the following databases: EBSCOhost, which includes MEDLINE with Full Text, CINAHL Plus with Full Text, and Academic Search Complete; and Google Scholar. The following descriptors were combined and used for study selection: *Humanitude, cuidados de enfermagem* (nursing care), *cuidar* (care), *idosos* (elderly), *prevenção* (prevention), *quebras cutâneas* (skin tears), *agitação* (agitation).

2.2 Inclusion and exclusion criteria

The following inclusion criteria were applied: full-text articles available online in the above-mentioned databases, published between January 2011 and October 2016, written in Portuguese and English, and that addressed the research question. A total of 75 articles were found. Of these, after full-text analysis, five articles met the inclusion criteria.
The following exclusion criteria were applied: articles that did not address the relevant issue for this study; articles without a full-text version available online; articles written outside of the specified time period and in another language; and studies involving children and adults.

3. RESULTS

Table 1 shows a summary description of the five selected articles in chronological order.

Table 1. Main results of the studies

Study	Main Results
Simões, Rodrigues, & Salgueiro (2011)	- The implementation of the Gineste-Marescotti® Methodology (MGM®) promotes the acceptance of care delivery, preventing agitation behaviors during care delivery. - The priority target groups of Humanitude care are dependent people and individuals in a critical and vulnerable situation; - A smooth touch is a caring technique that allows establishing an effective connection with the dependent person. - The combination of the Humanitude pillars allows access to patients' good memories and their appeasement.
Simões, Salgueiro, & Rodrigues (2012)	- After the implementation of the Humanitude care methodology, there was a marked decrease in the Pathological Agitation Behaviors, as well as less opposition to care delivery. - During the delivery of hygiene care, the rough touch (lifting patients by the wrist, as if by a pincer or using the "claw" reflex) and the use of force when positioning led to negative responses from the patients, namely agitation and opposition to care delivery. - The study concluded that nurses lack training on relational techniques, namely in terms of gaze, speech, touch, and verticality.
Stephen-Haynes (2012)	- Although knowing how to manage skin tears is important, the study concluded that it is more important to know how to prevent them by creating a safe environment and using careful and adequate positioning and transfer techniques with a view to reducing shearing and friction forces. - The study also concluded that there should be more manuals with correct techniques for caregivers to use during care delivery.
LeBlanc & Baranoski, (2014)	- Skin tears are reported to have prevalence rates equal to or greater than pressure ulcers. - ISTAP developed a tool kit for the prevention, identification, and management of skin tears. With regard to prevention, ISTAP designed a skin tear risk assessment guide and a risk reduction program implementation guide. - With regard to the skin tear risk reduction program, risk factors are divided into three categories: general health, mobility, and skin. - In ADLs, any sudden movement can lead to a skin tear. Patients, families, and professionals should be aware of the importance of using proper positioning, transferring, lifting, and turning techniques.
Honda, Ito, Ishikawa, Takebayashi, & Tierney (2016)	- Health professionals experience difficulties in providing care to people with cognitive alterations due to their behavioral changes and refusal of care. - In this comparative study between two groups: one group received conventional hygiene care, and another group received Humanitude care. Significant differences were found between both groups. In the group receiving Humanitude care, patients displayed fewer aggressive behaviors.

4. DISCUSSION

Skin tears have been reported in the literature in the United States and Australia with prevalence rates equal to or greater than those of pressure ulcers (LeBlanc & Baranoski, 2014). Studies show that skin tears usually occur during the hours of 6:00 AM to 11:00 AM and 3:00 PM to 9:00 PM, which are moments of peak activity/care delivery to dependent older people (LeBlanc & Baranoski, 2011). For this reason, nurses are in a privileged position to identify older people at risk for skin tears and apply the best preventive measures in each situation.

The scientific knowledge about skin anatomy and physiological changes associated with aging helps nurses to identify risk factors. Therefore, they must possess skills not only to treat skin tears, but also to prevent them by applying their knowledge about each patient's predisposing factors (Stephen-Haynes, 2012), thus avoiding the pain and suffering caused by skin tears (Souza & Santos, 2006).

The factors increasing the likelihood of skin tears must be identified in order to lower the incidence of this type of wound. According to LeBlanc and Baranoski (2014), older people with impaired cognition and who need assistance in ADLs are at high risk for skin tears due to defensive-aggressive and agitation behaviors, which increase the risk of mechanical trauma caused by a sudden movement while the patient is receiving hygiene care, being dressed, positioned, or transferred. These sudden movements, often associated with the force exerted by the patient when he/she does not understand the care being provided and adopts defensive behaviors, should be avoided. To achieve this, it is essential to negotiate and involve the patient in care (Phaneuf, 2010; Salgueiro, 2014) by using careful and adequate positioning and transfer techniques with a view to reducing shearing and friction forces (Stephen-Haynes, 2012).

Therefore, the Humanitude care methodology, characterized by the use of appeasing relational techniques adequate to older patients, has had positive results, namely the significant reduction in patients' resistance and/or opposition to care delivery and in the frequency of pathological agitation behaviors (Gineste & Pellissier, 2008; Honda et al., 2016).

The pillars of Humanitude (gaze, speech, and touch) must be combined to access the patient's good memories and appease them, thus avoiding skin tears in older people with agitation behaviors (Simões et al., 2011). The nurse must provide care using gentle movements, using a smooth touch throughout care delivery and avoiding lifting the dependent person by the wrist, as if by a pincer or using the "claw" reflex so as to build an effective relationship with him/her and reduce his/her agitation, opposition to care, and counterforce (Simões et al., 2011; 2012).

In addition to meeting ISTAP recommendations for the prevention of skin tears, this care methodology provides replicable relational techniques and explains how to touch the patient, establish eye contact, and communicate verbally. It also explains how to reduce and prevent agitation/aggression behaviors by applying the structured sequence of Humanitude care procedures and avoiding the use of invasive gestures and surprise approaches (Simões et al., 2012).

CONCLUSIONS

Studies show that older people with impaired cognition and in need of assistance with ADLs display defensive-aggressive and agitation behaviors, which puts them at a higher risk for skin tears. The most common risk factors for skin tears include sudden movements of patients or nurses, which mainly occur while the patient is receiving hygiene care, being dressed, positioned, or transferred.

International preventive measures provide an important contribution for the prevention of skin tears and recommend the use of thoughtful techniques to reduce the risk of skin tears in the older person. However, there are gaps in the characterization and operationalization of thoughtful and appropriate techniques.

Therefore, the context of care delivery to people with behavioral changes requires knowledge and intentionality in all actions. Within this scope, the Humanitude care methodology can significantly contribute toward the operationalization and systematization of the relationship based on the nurse's implementation of specific and intentional relational techniques, with the purpose of achieving the patient's sensory capture through gaze, speech, and touch. These techniques are performed with gentle movements and in a quiet environment, thus banning care delivery using force and surprise.

In addition, studies show that the Humanitude care methodology allows reducing the frequency of psychomotor agitation behaviors and refusal of care in dependent older people. Both the older person and the nurse make fewer sudden movements caused by counterforce during care delivery, thus reducing the risk factors for skin tears related to the patient's agitation, mobility, and transferring.

The results open the way for reflection and guidance for further research on this topic, which will lead to an increase in the number of studies conducted and the production of knowledge about the prevention of skin tears and the development of practical guidelines.

Further studies should be developed to confirm or reject the results of this study, and analyze the issue of skin tears in Portugal from multiple theoretical and methodological perspectives.

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ESTAMOS PREPARADOS PARA DESENVOLVER AÇÕES PALIATIVAS NUMA ENFERMARIA? REVISÃO DA LITERATURA

ARE WE PREPARED TO DEVELOP PALLIATIVE ACTIONS IN A WARD? A LITERATURE REVIEW

¿ESTAMOS PREPARADOS PARA DESARROLLAR ACCIONES PALIATIVAS EN UNA ENFERMERÍA? REVISIÓN DE LA LITERATURA

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RESUMO

Introdução: A Organização Mundial da Saúde (2015) apresenta como barreira, para melhorar o acesso aos cuidados paliativos, a falta de treino e consciencialização dos profissionais de saúde.
Objetivos: Identificar qual a preparação que os enfermeiros apresentam para a prestação de ações paliativas em contexto hospitalar.
Métodos: Revisão integrativa da literatura, através de pesquisa eletrónica na plataforma B-ON, utilizando a expressão: (nursing) AND (palliative care) AND (acute hospital setting) NOT (child* OR infant* OR adolescent*), obtendo seis artigos de estudos primários.
Resultados: Os estudos obtidos são representativos de um total de 2220 enfermeiros. Os artigos evidenciaram que os enfermeiros dos hospitais de agudos, apesar de serem capazes de cuidar de doentes com necessidades de cuidados paliativos, sentiram que seria importante formação nesta área, de forma a compreender melhor as necessidades destes doentes.
Conclusões: Os enfermeiros consideram que têm competências para prestar cuidados relativos a ações paliativas nas enfermarias de agudos, embora reconhecendo que deveriam ser dotados de mais formação.

Palavras-chave: Enfermagem; Cuidados paliativos; Enfermaria de agudos.

ABSTRACT

Introduction: The World Health Organization (2015) presents as barriers to improving access to palliative care the lack of training and awareness of health professionals.
Objectives: Identify the preparation of nurses who provide care, in the acute hospital setting, to develop palliative actions.
Methods: Integrative literature review, through the electronic research in the B-ON platform, using the expression: (nursing) AND (palliative care) AND (acute hospital setting) NOT (child* OR infant* OR adolescent*), obtaining six articles of primary studies.
Results: Obtained studies are representative of a total of 2220 nurses. The articles showed that nurses from acute hospitals, despite being able to care for patients with palliative care needs, felt that training in this area would be important in order to better understand the needs of these patients.
Conclusion: Nurses consider that they have competencies to provide care related to palliative care in acute care, although recognizing that they should be provided with more formation.

Keywords: Nursing; Palliative care; Acute hospital setting.

RESUMEN

Introducción: La World Health Organization (2015) presenta como obstáculo para mejorar el acceso a los cuidados paliativos, la falta de formación y sensibilización de los profesionales de la salud.
Objetivos: Identificar la preparación de los enfermeros para desarrollar acciones paliativas, en unidades de hospitalización de adultos.
Métodos: Revisión integradora de la literatura a través de la plataforma B-ON, utilizando la expresión: (nursing) AND (palliative care) AND (acute hospital setting) NOT (child* OR infant* OR adolescent*), consiguiendo seis artículos de estudios primarios.
Resultados: Estudios obtenidos son representativos de un total de 2220 enfermeros. Todos los artículos mostraron que los enfermeros de hospitales de agudos, aunque pueden cuidar pacientes con necesidades de cuidados paliativos, consideran que sería importante la formación para poder entender mejor sus necesidades.
Conclusións: Los enfermeros consideran que tienen habilidades para la atención de las acciones paliativas en salas de agudos, reconociendo al mismo tiempo que deben estar provistas de una mayor formación.

Palabras Clave: Enfermería; Cuidados paliativos; Unidad de hospitalización de agudos.

INTRODUCTION

The aging of the population, as well as, the increase in the incidence of chronic diseases increases the average life expectancy, but not the quality of life, thus increasing the number of patients who need palliative care. According to the Strategic Plan for the Development of Palliative Care - Biennium 2017/2018 (Comissão Nacional de Cuidados Paliativos - CNCP, 2016), patients who lack this same care become a problem of enormous social impact and of increasing importance, however, with resources being limited, it isn't possible to have specialised or palliative care units to care for all these people.

The European Association for Palliative Care (EAPC, 2009) called for access to palliative care as a legal obligation on the part of governments, as recognized by the United Nations, and governments are called upon to develop social and health care, seeking to integrate palliative care into other health services and ensuring that legislation includes support for patients' family members. Moreover, access to palliative care is also claimed as a human right by international associations. However, according to data from July 2015, The WHO estimates that 40 million people need palliative care each year, but only 14% of those people have access to them, a figure which tends to increase by the above facts.

According to the WHO (2015), palliative care consists in a clinical approach aimed at improving the quality of life of people in a palliative situation and their families, who face problems associated with symptom and end-of-life compensation, through prevention, and relief of suffering through early identification, effective assessment and management of pain, as well as other physical, psychosocial, and spiritual problems.

The Basic Law on Palliative Care (Lei n. º 52/2012, de 5 de setembro) defines them as active, coordinated and global care provided by specific units and teams, in the hospital or at home.

The WHO (2015) further reiterates that palliative care are explicitly recognized in the human right to health. It adds that care must be provided through person-centered services that pay attention to the needs and preferences of individuals, allowing patients to live as actively as possible until death.

Palliative care are most effective when considered early during illness, because improves the quality of life of patients but also reduces hospitalizations and the use of unnecessary health services. Therefore, the provision of palliative care should be considered an ethical duty of health professionals (Ibidem).

The hospital, as we know it, was devoted, and structured to actively treat the disease, in an acute phase and with a curative purpose; being that when the bankruptcy of the treatments is verified and the person approaches the death, sometimes the hospital has difficulties in the management of the care. Consequently, as described by Bloomer, Endacot, O'Connor and Cross (2013), although palliative care aims at quality of care at the end-of-life, many patients die in acute hospitals and still getting aggressive and resuscitation care.

However, according to Milligan (2012), the hospital environment is increasingly considered as an important area for the provision of palliative care, since a significant number of patients with advanced disease need palliative care, may be in the hospital, including through palliative actions.

Robinson, Gott and Ingleton (2014) argue that in most developed countries, acute hospitals play a significant role in providing palliative care and are the setting in which most people die.

Palliative actions, according to Lei n.º 52/2012 (p.5119), are "therapeutic measures not intended for curative purposes, isolated and practiced by professionals without specific preparation, aimed at reducing in hospital or at home the repercussions and negative effects of the disease on the overall well-being of the patient, particularly in cases of incurable or severe disease, at an advanced and progressive stage".

It is therefore crucial to understand that, as mentioned in the Strategic Plan for the Development of Palliative Care - Biennium 2017/2018 (CNCP, 2016), there are two levels of care, the palliative approach and specialized palliative care. The palliative approach is used in services where palliative patients are occasionally treated, integrates methods and procedures used in palliative care and must be present throughout the health system.

The WHO (2015) presents as one of the greatest barriers to improving access to palliative care, lack of training and awareness among health professionals. However, Milligan (2012) considers that the most important is the lack of recognition by the multidisciplinary team of the need for palliative care.

According to the International Council of Nurses (2000), nurses have an unique preparation to provide care to the terminally ill patient and his family, and the pain and suffering relief are a fundamental responsibility of the nursing team, thus constituting key elements of the multidisciplinary team. However, McCourt, Power and Glackin (2013) argue that nurses need throughout the degree to develop skills to be able to provide quality care to end-of-life patients. This should be safeguarded, even because Article 87 of the Nurses' Code of Ethics (Ordem dos Enfermeiros, 2005) defends respect for the person in the final stage of life, referring to the duty of the nurse to accompany the person in the different stages of the terminal phase.

The International Council of Nurses (2000) therefore recommends that should be included in the initial and postgraduate training of nurses, particularly in palliative care, such as pain assessment and management, respect for cultural values, self-determination and the right to a dignified death. This issue remains current as the Strategic Plan for the Development of Palliative Care - Biennium 2017/2018 (CNCP, 2016) states that a study was recently carried out in Portugal, which concluded that not all study plans of the degree in nursing, had a required curricular unit of palliative care.

On the other hand, the Order of Nurses contemplates the Regulation of Specific Skills of the Specialist Nursing Person in a Chronic and Palliative Situation in the Post-Degree Specialization in Medical Surgical Nursing, providing nurses with skills to care for "people with chronic, incapacitating illness, and terminal care of their caregivers and their families, in all contexts of clinical practice, reducing their suffering, maximizing their well-being, comfort and quality of life "(Regulamento n.º 188/2015, p. 9967).

McCourt, Power and Glackin (2013) in their literature review identified six potential areas that may affect the quality of care provided to people in acute care settings: lack of knowledge, lack of time, cultural barriers of services, communication problems, symptom control and the personal problems of nurses. For the authors, caring for the terminally ill is therefore an area that nurses in acute care settings find particularly difficult because dealing with the emotional responses of patients and families and their own emotions is something that nurses find it stressful, frustrating and disturbing.

Gagnon and Duggleby (2014) corroborate the same view, adding organizational and individual factors as influences nurses' experience, and it is challenging to simultaneously manage the divergent needs of people with acute conditions and where the goal of treatment is to cure, and the needs of people in a palliative situation, in a biomedical culture focused on treatment and recovery oriented care.

Bloomer, Endacot, O'Connor and Cross (2013) point out that nurses consider that side-by-side care of acute patients and palliative patients is a challenge, and that palliative care comes with lower priority and is distributed with less resources, especially by comparing people in critical situations to people in a palliative situation. This cannot happen because, bearing in mind the principle of justice, different situations must be treated differently, considering their differences, and promoting equity.

In view of these aspects, McCourt, Power and Glackin (2013) consider that the terminally ill receive better care in specialized services like palliative care units. However, the increase in the demand for these services and the fact that there are few of such units results in an increase in the number of people in a palliative situation who are admitted to services for recovery care. It should be noted that in Portugal, for a population of 10 374 822 inhabitants, data from the National Statistical Institute for the year 2014, there are 278 vacancies in palliative care units, with an occupancy rate of 92%, according to data from February 2016, published by the Central Administration of the Health System.

In Milligan's opinion (2012) the hospital can be a scary and intimidating place to spend the end-of-life. However, most people will spend at least some time out of their last year of life in a hospital and most of these are currently susceptible to dying in an acute care ward. Optimizing palliative care and promoting end-of-life care at the hospital is therefore critical if the suffering so commonly associated with advanced illness and death is to be reduced.

Considering the above, we outline the following objective: to understand if nurses, who provide care in adult inpatient units, are prepared to develop palliative actions.

1. METHODS

Formulated the objective, we set out towards the discovery with the purpose of determining the state of the art regarding this theme. An integrative review of the literature has been perspective because this is a method that allows the inclusion of several methodologies and can be a fundamental determinant in evidence-based practice for nursing, since systematic and rigorous reviews have the potential to present a summary of current health problems (Whittemore & Knafl, 2005).

Based on the objective and considering the knowledge that was intended to be synthesized, a research was carried out using the keywords: nursing, palliative care and acute hospital setting. Through the association of these descriptors, a resource was made on the B-ON platform (in CINAHL Plus with Full Text, ScienceDirect, Academic OneFile, Expanded Academic ASAP, General OneFile, Business Source Complete, SPORTDiscus with Full Text, MEDLINE, Science in Context, Informit Health Collection, Science Citation Index, Social Sciences Citation Index, Nursing Reference Center, Scopus, TDX, MedicLatina, LexisNexis Academic: Law Reviews and J-STAGE). As for the period of search of the articles this comprised the first two weeks of February 2016.

In the research, boolean characters were used to conjugate the different descriptors, and the research expression used was (nursing) AND (palliative care) AND (acute hospital setting) NOT (child* OR infant* OR adolescent*).

Inclusion criteria were included in the study, which were published between February 2011 and January 2016, in full text, with a qualitative and quantitative approach and available in the Portuguese, English and Spanish languages. They would have to refer to nurses who care for patients with palliative care needs and to be studies with nurses in adult inpatient services.

The research conducted led to an initial sample of 5824 scientific studies. Of these, 1750 were excluded by repetition, 4027 by title and 30 by summary resulting from this process a sample of 17 articles. After reading these 17 studies, 11 were excluded due to inadequacy of the inclusion / exclusion criteria. In Figure 1, the selection process of the included studies is presented as a diagram.

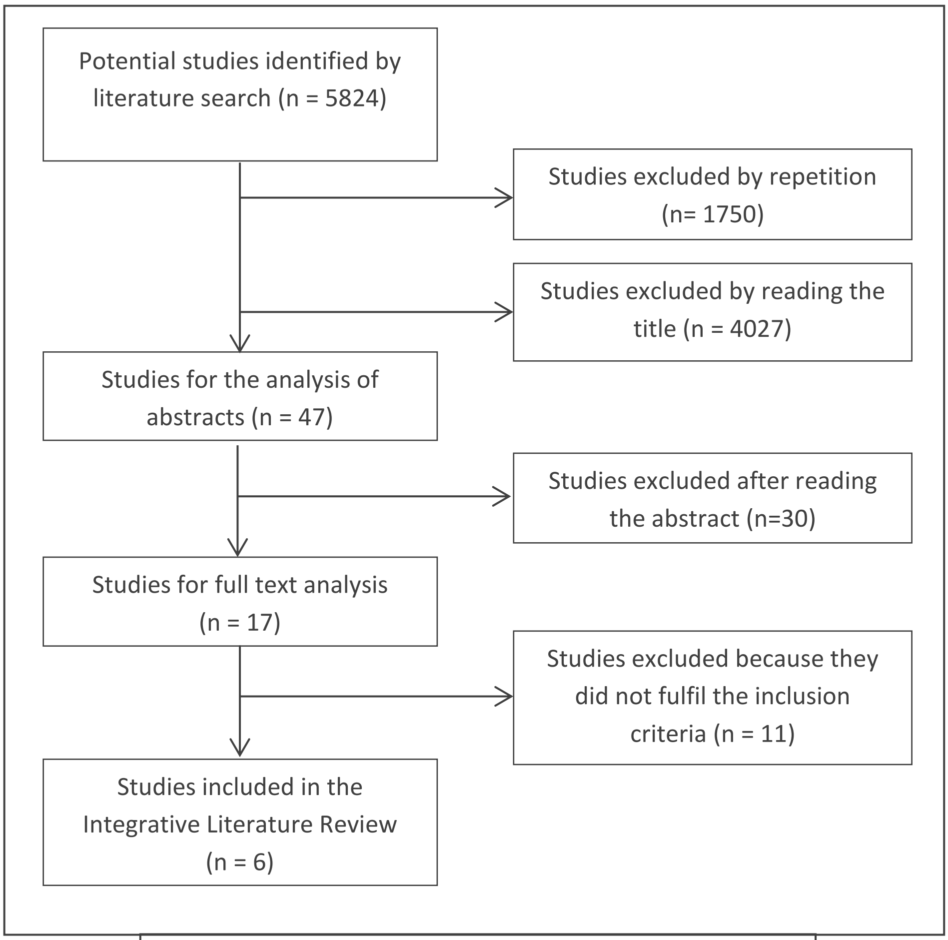

Figura 1 - Selection process of included studies

The six articles selected were analysed, to meet the objective defined for this study. The data were extracted from the articles to obtain information about the country and context where the study was carried out, the period during which it was carried out, objectives and study design, number and type of participants, results obtained and conclusions drawn.

2. RESULTS AND DISCUSSION

The six primary studies that met the pre-defined inclusion criteria are presented in table 1, including the author(s), year, country, objectives, sample, methodology and main results of each article.

Table 1 - Summary of evidence found

N. º	Author(s) / Year / Country	Objetives	Sample	Methodology	Results/ Conclusions
E1	Johansson, K. Lindahl, B. 2012 Sweden	To describe the meaning of nurses' experiences in caring for patients with palliative care needs in an acute care hospital.	N = eight nurses from two hospitals, not trained in palliative care, working for at least three years in surgical or medical wards.	Qualitative, descriptive and interpretive study, from December 2006 to February 2007.	Nurses show an interest in the end-of-life, although this phase causes them stress. They recognize that it is a relevant topic for clinical practice and that it should be further studied.

N. º	Author(s) / Year / Country	Objetives	Sample	Methodology	Results/ Conclusions
E2	Arantzamendi, M. Addington- Hall, J. Saracibar, M. Richardson, A. 2012 Spain	Describe the preparation of nurses to care for people with palliative care needs.	N = 165 nurses from six hospitals (without palliative care units) who contacted with terminally ill patients.	Exploratory study.	Nurses, despite feeling competent physically, do not feel competent psychologically. They acknowledge the lack of support and training and refer the need for studies demonstrating the importance of these aspects so that they have repercussions on the provision of care.
E3	Fedel, P. Joosse, L. L. Jeske, L. 2014 USA	Understanding how an educational intervention and the implementation of a prognostic tool can improve nurses' knowledge about palliative care in acute hospitals.	N = 12 nurses, from a medical unit, from an acute hospital.	Quasi-experimental study with pre and post-test, after the implementation of an educational intervention for nurses.	The education / training of nurses in palliative care improves clinical practice, making them feel comfortable with their knowledge and subsequently with their practice. They emphasize the importance of replicating the study on a larger scale, in order to better understand the gaps of the nurses and the effectiveness of an educational intervention.
E4	Higgins, I. Van der Riet, P. Sneesby, L. Good, P. 2014 Australia	To understand the nurses' perceptions about the supply or not, of nutrition and hydration, in the final phase of life.	N = 10 nurses, with experience in palliative care in hematology, oncology and medicine services.	Descriptive qualitative study, which uses three focus groups and interviews.	A palliative approach is required for acute care. Acute care nurses need to be more aware of the palliative approach and to be involved in decision making.
E5	Bergenholtz, H. Jarlbaek, L. Holge-Hazelton, B. 2015 Denmark	To explore the palliative care culture of generalist nurses, focusing on the definition, practices and reflections of nurses.	N = 2000 nurses from three different medical departments of a regional hospital.	Ethnographic study, between September 2012 and February 2013.	Nurses feel individually competent to work in palliative care, but they say that working in a group brings more advantages because it leads to better discussion, understanding and practice of care.
E6	Clark, K. Curry, T. Byfieldt, N. 2015 Australia	Implement a set of interventions and evaluate the impact they have on quality of care as well as assess the skills and attitudes of nurses, how to care for people at end-of-life.	N = 25 nurses from two different services.	Quasi-experimental study with pre and post-test, after the application of a bundle to the nurses.	The clinical approach after the intervention showed that nurses identified and better managed the needs of patients. It evidences the need for palliative care education programs.

The articles were published between 2012 and 2015, which reveals that this is a current and pertinent theme. They are framed both in the quantitative paradigm (E2, E3 and E6), as in the qualitative one (E1, E4 and E5).

The articles selected are representative of a total of 2220 nurses from three different continents (Europe, America, and Oceania), which reinforces the pertinence of this theme, not only because it is a current theme but also transversal to different cultures and societies.

The main objectives of the selected articles were to describe the meanings of the nurses' experiences in caring for people in a palliative situation, in an acute care hospital, as well as to see if the nurses are prepared to care for them (E1 and E2). On the other hand, two of the studies (E3 and E6) intend to understand how nurses can change their posture, make decisions and how to recognise this subject after the implementation of an intervention. The remaining two studies (E4 and E5) attempt to understand the experiences, opinions and reflections of nurses regarding palliative care.

Milligan (2012) in his literature review concluded that the main barrier to palliative care is the identification of patients by health professionals, which is also verified in a study presented by Gardiner et al. (2012), since if the study had not been performed, neither patients with palliative care needs nor those needs had been identified; To highlight that one-third of the hospitalized patients had palliative care needs.

It is therefore necessary to consider the principles defended in the Deontological Code of Nurses (Ordem dos Enfermeiros, 2005), as for example the principle of justice that holds that each person needs to be given what they need, considering their situation, and it is important to reflect on the distribution of resources in acute wards, where the diversity of patients is immense. In this way, we must always seek equity.

The results of the literature review by Gagnon and Duggleby (2014) suggest that nurses feel a strong commitment to help terminally ill patients experience a good death. Nurses reported feeling deeply rewarded and privileged to share the end-of-life experience with patients / families, as in the E5 study.

Of course, more research is needed to see whether the care provided to the terminally ill patient and their family is responding to their needs. At the same time, four of the studies analysed (E1, E2, E3 and E6) even point out that it is pertinent to study and invest in this area, to bridge existing gaps and train health professionals to feel safer in their daily practice.

According to the recommendations of the Portuguese Association of Palliative Care (Associação Portuguesa de Cuidados Paliativos - APCP, 2006) palliative care is an area that needs differentiated specific training, which is considered a critical factor in the success of the teams. According to Capelas and Neto (2010: 795) "for palliative actions to be a reality, it is necessary, first, to adequately train professionals to improve knowledge, skills, and the attitudes, because they are the ones that most clearly influence change". These authors point out that the training should be structured, so that all professionals develop skills in palliative care.

Half of the studies analysed refer to the need to invest in training, and the APCP (2006) recommendations corroborate this same need. It also evidence that all nursing professionals who provide direct care to the end-of-life person need training and that this should be obtained according to the frequency and intensity of the contact of each professional with the patients who need palliative care.

According to the Strategic Plan for the Development of Palliative Care - Biennium 2017/2018 (CNCP, 2016), training is an essential and determinant element for the practice of palliative care of excellence. All health professionals applying palliative care methods and procedures in a non-specialist setting should have basic training and all professionals who often follow patients with palliative needs should have an intermediate training.

The acquisition of the specific competences of the specialist nurse in medical and surgical nursing, directed to the person in chronic and palliative situation, is an added value in terms of training, as it is referred to in Regulamento n.º 188/2015 (p. 9968) "uses evidence-based strategies to develop self-knowledge and skills of people with chronic disabling illness, their caregivers and family" as well as "communication and teamwork strategies as well as theoretical and practical knowledge related to ethics, to make adequate decisions that allow adequate proportionality in the use of invasive and diagnostic therapies. "

Therefore, nurses who specialize in medical and surgical nursing can play a very important role in training other colleagues or in promoting this training, to fill in the existing gaps by preparing and equipping colleagues with knowledge.

CONCLUSIONS

Nurses consider that they have competencies to provide care related to palliative care in acute care, although recognizing that they should be provided with more training. Training in palliative care contributes decisively to an improvement in nurses' performance, as well as to the achievement of competencies to perform well in this area.

The studies analysed effectively demonstrate the importance of training and the gap that exists with respect to it, but they point out that nurses feel capable, even with lack of knowledge, of caring for end-of-life patients, after analysing their needs.

It is part of the competencies of nurses' specialists in medical and surgical nursing, in the chronic and palliative situation, to provide nursing care in a way that minimizes suffering, maximizing well-being, comfort and quality of life; so, it is important that they are present in the acute care ward.

For this to be possible it is necessary and emerging to train health professionals, helping them feel safe in decision-making, and that these are in favour of what is best for the patient, respecting the principles of justice, equality, beneficence and non-maleficence.

Responding to the objective that guides this work, it can be concluded, in the light of scientific evidence, that effectively nurses who provide care in adult hospitalization units are not prepared to develop palliative actions. Since in addition to many times they do not even recognize who are the patients with these needs and when they recognize them, they cannot assess those needs, which invokes and accentuates the need for training in this area. Nurses themselves, from the studies analysed, report that when they are provided with information, they feel more confident to act and provide quality care.

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DOENÇA DE HANSEN NO BRASIL: MONITORIZAÇÃO DAS INCAPACIDADES

HANSEN'S DISEASE IN BRAZIL: MONITORING OF DISABILITIES

LA LEPRA EN BRASIL: MONITOREO DE LAS DISCAPACIDADES

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RESUMO

Introdução: A doença de Hansen é uma patologia infectocontagiosa, curável, causada pelo Mycobacteria Leprae, com predileção pelo sistema nervoso periférico.

Objetivos: Determinar as formas clínicas e a classificação operacional dos portadores de doença de Hansen; Identificar o grau de incapacidade dos pacientes diagnosticados com doença de Hansen;

Métodos: Estudo transversal, com abordagem quantitativa de natureza descritiva, realizado com 104 pacientes diagnosticados com doença de Hansen. A maioria era do sexo masculino 63 (60,6%) com uma média de idades de 37 anos, 49% eram de cor parda e 34,6% detinham o ensino fundamental completo.Os dados foram retirados de: Sistema de Informação de Notificação de Agravos Notificáveis – SINAN em 2014; - Ficha de Avaliação Neurológica Simplificada para avaliação do Grau de Incapacidades, (Brasil, 2010, p.35), extraída do Manual de Prevenção de Incapacidades (Brasil, 2008, p. 112-113).

Resultados: A classificação operacional dos portadores de doença de Hansen revelou que 47,1% eram paucibacilares e 52,9% multibacilares e que 31,7% foram diagnosticados com a forma Dimorfa e 25,9% Tuberculóide. O Grau de Incapacidade Física (GIF) no diagnóstico foi o seguinte: Grau 0 - 73 (70,20%); Grau I - 17 (16,35%) e 9 (8,65%) possuíam deformidades instalados de Grau II. Os *odds ratios* indicam de forma significativa que o risco das mulheres com doença de Hansen não apresentarem incapacidades físicas no *momento do diagnóstico*, é cerca de 4 vezes superior ao dos homens (OR= 3,868; IC 95%= 1,316-11,368).

Conclusões: A ocorrência de incapacidades originadas pela doença de Hansen sobretudo nos homens é ainda um problema de saúde pública no Brasil, pelo que a busca ativa de casos na comunidade, o exame dos contatos domiciliares, o acompanhamento dos pacientes pelas unidades de saúde, as campanhas educativas e investigações com alunos nas escolas são exemplos de políticas que devem ser implementadas para que se consiga erradicar a endemia e reduzir as suas sequelas.

Palavras-chave: Doença de Hansen; Lepra, Doença Granulomatosa Crônica, Incapacidade Física.

ABSTRACT

Introdution: Hansen's disease is an infecto-contagious, chronic and curable disease, caused by the Mycobacterium Leprae with a preference for the peripheral nervous system.

Objectives: To determine the clinical forms and the operational classification of patients suffering from Hansen's disease; to identify the disability grade of patients diagnosed with Hansen's disease.

Methods: Cross-sectional study with a quantitative approach of a descriptive nature performed on 104 patients diagnosed with Hansen's disease. Most were male, 63 (60.6%), with an average age of 37 years, 49% had *pardo* complexion and 34.6% had an elementary education level.

Data was collected from the: Notifiable Diseases Information System – SINAN in 2014; Simplified Neurologic Assessment Form for assessing the Grade of Disability (Brasil, 2010, p.35), taken from the Guide for Prevention of Disabilities (Brasil, 2008, p. 112-113).

Results: The operational classification of patients suffering from Hansen's disease revealed that 47.1% were paucibacillary while 52.9% were multibacillary and that 31.7% were diagnosed with the Borderline form and 25.9% with the Tuberculoid form. The Physical Disability Grade (PDG) at the time of diagnosis was the following: Grade 0 – 73 (70.20%); Grade 1 - 17 (16.35%); and 9 patients (8.65%) had developed Grade 2 disabilities. The odds ratios significantly indicate that for women with Hansen's disease the risk of not having physical disabilities at the *time of diagnosis* is about 4 times higher than it is for men (OR= 3.868; CI 95%= 1.316-11.368).

Conclusions: The occurrence of disabilities resulting from Hansen's disease mostly in men is still a public health problem in Brazil. Therefore, active search for cases within the community, examining household contacts, monitoring of patients by the healthcare units, educational campaigns and research with students in schools are examples of policies which should be implemented in order to eradicate this endemic disease and reduce sequelae thereof.

Keywords: Hansen's disease, Chronic Granulomatous Disease, Physical Disability.

RESUMEN

Introducción: La enfermedad de Hansen es una patología infectocontagiosa, crónica y curable, causada por el Mycobacteria Leprae, con predilección por el sistema nervioso periférico.

Objetivos: Determinar las formas clínicas y la clasificación operativa de los portadores de lepra; Identificar el grado de incapacidad de los pacientes diagnosticados con enfermedad de Hansen.

Métodos: Estudio transversal, con abordaje cuantitativo de naturaleza descriptiva, realizado con 104 pacientes diagnosticados con enfermedad de Hansen. La mayoría era del sexo masculino 63 (60,6%) con una media de edades de 37 años, el 49% eran de color pardo y el 34,6% tenía la enseñanza fundamental completa. Los datos fueron retirados de: Sistema de Información de

Notificación de Agravios Notificables – SINAN en 2014; - Ficha de Evaluación Neurológica Simplificada para la evaluación del Grado de Incapacidades, (Brasil, 2010, p.35), extraída del Manual de Prevención de Incapacidades (Brasil, 2008, p. 112-113).

Resultados: La clasificación operativa de los portadores de enfermedad de Hansen, reveló que el 47,1% eran paucibacilares y el 52,9% multi-cilares y que el 31,7% fue diagnosticado con la forma Dimorfa y el 25,9% Tuberculosis. El Grado de Incapacidad Física (GIF) en el diagnóstico fue el siguiente: Grado 0 - 73 (70,20%); Grado I - 17 (16,35%) y 9 (8,65%) poseía deformidades instaladas de Grado II. Los odds ratios indican de forma significativa que el riesgo de que las mujeres con enfermedad de Hansen no presenten incapacidades físicas en el momento del diagnóstico, es aproximadamente 4 veces superior al de los hombres (OR = 3,868; IC 95% = 1,316-11,368).

Conclusiones: La ocurrencia de incapacidades originadas por enfermedad de Hansen sobre todo en los hombres es todavía un problema de salud pública en Brasil, por lo que la búsqueda activa de casos en la comunidad, el examen de los contactos domiciliarios, el acompañamiento de los pacientes por las unidades de salud, las campañas educativas E investigaciones con alumnos en las escuelas son ejemplos de políticas que deben ser implementadas para que se pueda erradicar la endemia y reducir sus secuelas.

Palabras clave: Enfermedad de Hansen, Enfermedad Granulomatosa Crónica, Incapacidad Física.

INTRODUCTION

Hansen's disease is an infecto-contagious, curable disease which develops slowly, implicating the skin and with a preference for the peripheral nervous system. It is caused by the aetiologic agent Mycobacterium leprae, which was discovered in 1873 by Amauer Hansen, and it is characterized by affecting the skin and the peripheral nerves, which is why neurologic damage is one of the sequelae that may occur (Morhan, 2015). The bacillus' multiplication is slow, with an average duration of 11 to 16 days (Brasil 2002 apud Reis, 2015, p. 23). Hansen's disease is transmitted from a person carrying the bacillus who is not undergoing treatment to another vulnerable and susceptible person. Some studies indicate that the Mycobacterium leprae has high infectivity and low pathogenicity, i.e. it infects many people, yet very few have the capacity of actually falling ill, thus (Penna, 2009, p.44 apud Mesquita, Soares, Rafael, Azevedo, Melo, Vasconcelos, Félix, André, Abdon, 2014, p.248); (Brasil, 2014, p.345).

The main means the patient suffering from Hansen's disease has of eliminating the bacillus, which is also the most probable portal of entry of the bacillus in the body likely to be infected, is the respiratory tract, particularly the upper respiratory tract. In order for contamination to happen there has to be direct contact with the untreated ill patient. The disease's outbreak in the person infected by the bacillus and its different clinical manifestations depend on multiple factors, such as the host-parasite affinity. This may happen after an incubation period which varies between 2 to 7 years (Brasil, 2014, p. 345).

The identification of individuals at risk of developing Hansen's disease and early diagnosis thereof is crucial for the effective control of the illness. Inbreeding, contact with patients suffering from Hansen's disease and the patient's bacillary load due to prolonged exposure to the Mycobacterium leprae are the most significant determining factors for contracting the disease (Sales, Ponce de Leon, Düppre, Hacker, Nery, Sarno, et al. 2011, apud Carvalho, 2013, p.24). The contacts of multibacillary patients constitute the population with the greater risk of contracting the disease, in that their risk is 8 to 10 times higher, while the household contacts of paucibacillary patients is 2 to 4 times higher when compared to that of healthy individuals who have not been exposed to the Mycobacterium leprae (Noordeen, 1994, p.278-83 apud Carvalho, 2013, p.24).

The disease affects people of all ages and both genders. However, there is an increased incidence in men in comparison to women in most regions of the world (Brasil, 2014, p. 345). Children under fifteen years old get sick more often when the disease has a high-endemicity area (Brasil, 2010, p.10). Individual and socioeconomic determining factors such as nutritional condition, hygiene and housing conditions seem to influence transmission, which hinders the control of the endemic disease (Aquino et al, 2003 apud Sociedade Brasileira de Dermatologia, 2015).

A population's lack of basic healthcare, along with nutritional and hygiene deficiencies combined with low educational grades, precarious family income and migration processes are favourable to the disease's spreading (Silva Santos, Gonçalves, Nascimento & Cruz Neto, 2014, p. 133-141). Additionally to the risk of the Mycobacterium leprae infecting populations exposed to the bacillus being correlated to low education levels, precarious housing and socioeconomic conditions (Pönnighaus, Fine, Sterne, Bliss, Wilson, Malema, et al. 1994, p.10-23 and Sales, Ponce de Leon, Düppre, Hacker, Nery, Sarno, et al. 2011 apud Carvalho, 2013, p.1), the genetic factors which can influence the illness' process and favour the clinical development of Hansen's disease should also be taken into consideration (Alter, 2008, p. 123 apud Carvalho, 2013, p.1).

On the 44th World Health Assembly held in 1991 a resolution was adopted for the elimination of Hansen's disease by the year 2000. However, this goal was not met and was extended up to 2005 (WHO, 2005 apud Vale & Araújo, 2015, p.144), when it was also not met. It was then that the World Health Organization instituted the *Global Strategy for Further Reducing the Leprosy Burden and Sustaining Leprosy Control Activities: 2006-2010* and years later the *Enhanced Global Strategy for Further Reducing* *the Disease Burden Due to Leprosy: 2011-2015* which focuses on a more effective reduction of the disease’s burden in all its endemic areas (WHO, 2010 apud Vale, 2015, p.114).

In 2014 Brazil had an active record of 15,738 cases of Hansen’s disease, with the Northeast region being the most largely affected with 10,738 cases, and the South region being the least largely affected with 907 cases. Most cases were multibacillary, with 20,474 people in Brazil, out of which 8,422 were in the Northeast; 45.42% of cases were of the female gender (Brasil, 2015, p.12). Brazil has approximately 23.3% of the new annually diagnosed cases with Disability Grades 1 and 2 which generate consequences and limitations to the patients’ jobs and social lives as well as psychological problems (Finez & Salotti, 2011 apud Pinheiro, Silva, Silva, Ataide, Lima, & Simpson, 2014, p. 895-906).

In order to categorize Hansen’s disease, we took into consideration the classification used by Brazil's Health Ministry based on the "6th International Congress of Leprosy”, Madrid, 1953, widely used all around the world (Madrid Congress, 1953). This classification considers four clinical forms: Indeterminate leprosy (IL) (early stage of the disease); Tuberculoid leprosy (TL) (which affects cutaneous innervation and/or the destruction of the nerve plexus with a chance of spontaneous cure by imunocellular resistance to the bacillus); Virchowian leprosy (VL) which is difficult to diagnose during the early stage due to chronicity, extensive general involvement and because the parasitism of the skin, eyes, nerves, viscera and other organs is visibly asymptomatic; Dimorphic leprosy (DL), in which there is extensive and intense involvement of the skin, nerves and in rarer cases of other organs and in which ulcerations are more frequent. On the clinical practice we find chronic progression ulcers or trophic ulcers, largely common in advanced untreated Virchowian patients (Cunha, 2012, p.10; William, 2011, p.101-102).

The disease manifests itself through skin lesions and lesions in the peripheral nerves. These are caused by inflammatory processes of the peripheral nerves, i.e. neuritises, which are possibly due to the bacillus’ action on the nerves and/or to the body's reaction to the bacillus or the result of both these situations. Its main symptoms are the following: pain and thickening of the peripheral nerves; either loss or decrease of sensation in nerve innervations, especially in the eyes, hands and feet; loss of muscle strength with innervation of the affected nerves, preferably in the eyelids and in the upper and lower limbs (Brasil, 2002 apud LastóriaI, Milanez & Abreu, 2012, p.176).

Neuritis frequently develops in an acute process which is followed by severe pain and oedema. Early on it does not show signs of functional damage to the nerve, yet it becomes chronic and begins to evidence this involvement with the loss of the perspiration function and occurrence of skin dryness. There is loss of sensation, numbness and loss of muscle strength, which causes paralysis in the areas innerved by the nerves in which the damage occurred. When neural damage happens and goes untreated, there is the possibility it may cause disabilities and deformities (Brasil, 2002 apud LastóriaI, Milanez & Abreu, 2012, p. 176). This is why the problem with Hansen’s disease is not solely related to its large number of cases, and why its high potential for resulting in disability should also be taken into consideration, seen as it may impact the patient's job and social life, as well as result in economic loss and psychological trauma. Disabilities have been blamed for the stigma and discrimination the patients endure (Budel, 2015, p. 942-946).

The disease’s neural tropism represents a high potential for disability which, in the absence of intervention, generates deformities and disabilities, mainly in the eyes, hands and feet, further causing psychological alterations in the patient suffering from Hansen’s disease and which result from the social stigma associated with the disease (Silva, 2015 pp. 223-229 apud Rodrigues Leandro, Antezana, Pinheiro, da Silva & Alves, 2015. p. 298). Nevertheless, physical disabilities can be either/both prevented or reduced when the people suffering from this illness are diagnosed and treated in time (Silva, 2014, p. 290-297 apud Rodrigues et al, 2015, p. 298).

An indicator of improvement in the integral attention granted to the person suffering from Hansen’s disease is the assessment of the *Physical Disability Grade (PDG).* The reduction target defined in Brazil was of 1.37 for100 thousand inhabitants in 2008 to 1.19 inhabitants in 2015, the coefficient of new cases of the disease with PD Grade 2 (Brasil, 2010, p. 57).

The physical disability grade reveals the authenticity of the loss of sensation which protects the individuals from deformities resulting from neural involvement. Grade 2 refers to lesions *in the eyes* with any sign and/or symptom such as lagophthalmos and/or ectropion, trichiasis, central corneal opacity and even blindness; *in the hands*, where trophic lesions and/or lesions where trauma, claw hands, resorption and hand drop can be observed; *in the feet*, similarly to the hands, where trophic lesions and/or lesions where trauma, claw foot, resorption, foot drop and ankle contracture can be observed (Brasil, 2008, p.18-30).

The number of cases with Grade 2 Physical Disability detected in a population gives an idea of the under-notification which can occur as the result of several reasons. Changes in the rate of new cases with Grade 2 disability for every 100,000 inhabitants should reflect changes in the rate of detection of new cases (OMS, 2010).

Brazil’s Health Ministry instituted a Protocol for Simplified Assessment of Neurologic Functions (SANF), which intends to perform a neurologic assessment in order to categorize the nerves’ involvement. SANF verifies the nerve’s condition through inspection, palpation, examining of sensation and assessment of motor strength in the eyes and in the upper and lower limbs. This assessment’s frequency of application occurs during the treatment, at its beginning, middle and end, despite the fact that it can be applied more frequently (Nardi, Cruz, Pedro, Marciano & Pachoal, 2011, p. 1).

The clinical, epidemiologic and therapeutic information about the disease in Brazil is recorded in the Notifiable Diseases Information System (SINAN) with the purpose of systematically controlling treatment in order to characterize the disease’s manifestations in people with Hansen's disease. Moreover, it aims to be able to improve diagnosis, treatment, recovery and prevention of the disease (Rodrigues et al, 2015, p. 298).

There are several aspects related to this issue which justify this research study, such as: the importance of assessing the disability grade of patients with Hansen's disease; the disruption disability causes; the need to face difficulties like late diagnosis, lack of knowledge about Hansen's disease by both health professionals and patients, support deficit, lack of records, failure in monitoring people who are in constant household contact with patients suffering from Hansen's disease, lack of medication often due to the systems' deficiency which includes bureaucratic processes, public bidding, logistics and others.

Thus, according to the World Health Organization's pact aiming to eradicate Hansen's disease, the research carried out is up-to-date and based on the following research questions: *What is the physical disability grade at the time of diagnosis and at the date of discharge in people with Hansen's disease? Which are the most prevailing clinical forms and operational classification of Hansen's disease? Which are the characteristics of the sample regarding sociodemographic aspects (age, gender, race, and education level)?*

The objectives set were the following: to identify the Physical Disability Grade; to determine the clinical forms and the operational classification of people suffering from Hansen's disease; to characterize the participants as for sociodemographic aspects (age, gender, race, and education level).

1 - METHODS

1.1 - Type of study

This is a cross-sectional, descriptive-exploratory study performed on 104 people diagnosed with Hansen's disease and notified in the *Notifiable Diseases Information System (SINAN)* on the year 2012 and monitored on this research until 2014 in the municipality of Cabo de Santo Agostinho, city located in the metropolitan area of Recife – PE, Brazil. As exclusion criteria we considered patients who had not been notified and/or of whom there was no record in the information system during the period studied.

1.2 - Participants

A convenience sample was made up of 104 patients with 63 males (60.6%) with an average age of 37 years. The minimum age was 6 and the maximum age was 88 years. The more representative age group was that of 27 to 37 years old.

Other studies are marked by the predominance of the male gender (61%), the predominant age group varied between 32 and 38 years (25%) with 21% under 18 years old (Buna, Rocha, Alves, Granja, Sousa & Silva, 2015, p.115 –122; Mesquita, 2014, p.249).

A significant number of participants participants were *pardo*, 51 (49.04%), followed by white participants, 34 (24.04%), and then black participants, 15 (14.42%). In 12.5% of cases it was impossible to classify the race of the participants. A significant number of participants (49%) had a low education level. Incomplete elementary education was predominant in 34.6%, followed by complete secondary education with 17.3% and complete elementary education with 9.6%. Regarding the education level in relation to gender, elementary education was the most significant both in females (36.6%) and in males (33.4%).

Reports of other studies are in line with this research study where 62.7% had an incomplete elementary education level; 7.8% had a complete elementary education level; 5.9% had an incomplete secondary education level; 21.6% had a complete secondary education level; and only 2% had a college degree (Mesquita, 2014, p.249).

According to another study, the predominant education levels were incomplete elementary education and complete secondary education both with 9 (32%), followed by the unalphabetized which amounted to 3 (11%), and complete elementary education with 3 (11%), incomplete secondary education with 3 (11%) and higher education with 1 (3%) (Buna et al 2015, p. 115-122).

According to yet another study, the most significant occurrence was of secondary education with 75 (48.4%) cases reported (Araújo, Aquino, Goulart, Pereira, Figueiredo, Serra, Fonseca, & Caldas, 2014).

1.3 - Data Collection Instruments

Data collection was carried out using the patient's medical records and the following:

- Sociodemographic and Clinical Survey containing information on both sociodemographic (gender, age, education level, race) and clinical (clinical form, operational classification, physical disability assessment at the time of diagnosis and at the discharge date) aspects.
- Notifiable Diseases Information System (SINAN). This system is supplied by the notification and research of cases of diseases and increase thereof which are included in the national list of compulsory notification diseases (Portaria Nº 1.271, of 6 June 2014. Accessed at http://dtr2004.saude.gov.br/sinanweb)
- Simplified Neurologic Assessment Form (FANS) for assessing the Grade of Disability (Brasil, 2010, p.35), taken from the Guide for Prevention of Disabilities (Brasil, 2008, p. 112-113).

1.4 - Procedures

The Health Secretary of the Municipality of Cabo de Santo Agostinho-PE, Brazil, authorized the study and issued assent for data collection. In turn, the Head Official for Epidemiologic Surveillance corresponding to the disease increase studied provided the necessary information. For data processing, we analysed the Notification Forms and Data Records filed in the patients' records undergoing treatment at the Reference Unit for Hansen's disease – Herbert de Souza/CTA Healthcare Unit. Information was complemented through the Book of Record of Hansen's Disease Policy (Public Health Policies).

2 - RESULTS

The *operational classification* demonstrates that 47.1% of people were classified as paucibacillary against 52.9% who were multibacillary. Most (69.8%), composed of males, were multibacillary and 30.2% were paucibacillary; regarding the female gender, we obtained 73.2% paucibacillary and 26.8% multibacillary. (Table 1).

Table 1 – Operational classification regarding Gender

Gender	Female		Male		Total		Chi-square	
	n	%	n	%	n	%	χ^2	p
Operational Classification								
Multibacillary	11	22.8	44	69.8	55	52.9	18.44	0.000
Paucibacillary	40	73.2	19	30.2	49	47.1		
Total	51	100.00	63	100.00	104	100.00		

An assessment of the probability of the operational classification varying according to gender was carried out. The odds ratios indicate that in the female gender the manifestation of the paucibacillary form is prevalent in relation to men and further indicate the reverse in the multibacillary form for men with significant differences between the groups (OR= 0.158; CI 95%= 0.066-0.380). Mesquita (2014) found 35.3% multibacillary patients, 15.7% paucibacillary patients and 49.0% who didn't have that information on their records.

The most prevalent *clinical form* was Dimorphic Leprosy with 33 patients, 8 female and 25 male, followed by Tuberculoid Leprosy with 27 patients, 16 female and 11 male, then Indeterminate Leprosy which presented 20 patients, 10 female and 10 male, and subsequently Virchowian Leprosy with 5 patients, 1 female and 4 male. In verifying the total we get a quantitative of 85 cases, with the remaining (19) distributed under unclassified and unnotified in the system. The most significant incidence of multibacillary and dimorphic forms in the male gender shows the occurrence of late diagnosis for men in comparison to women – a reality demonstrated by several studies.

The *Grade Zero* of *Physical Disability (PDG)* (absence of disabilities related to Hansen's disease) assessed in 99 participants at the time of diagnosis was of 73 (73.3%); 17 (16.35%) had alterations of protective sensation – G1 PD and 9 (8.65%) had developed deformities – Grade 2 PD, i.e. 26 (26.7%) had alterations which caused some degree of disability. As for the PDG in relation to gender (40 women and 59 men), the results show that 35 (87.5%) cases referring to the female gender had a disability assessment of G0 PD, 3 (7.31%) G1 PD, and 2 (4.87%) G2 PD. Regarding the male gender, there were 38 (64.4%) with G0 PD, 14 (22.23%) with G1 PD, and 7 (11.11%) with G2 PD. There was no assessment of 3 (4.76%) males and of 1 (2.46%) female. An assessment of ignored /blank was given to only 1 patient (1.59%) of the male gender.

By the time they were cured, patients who presented G0 PD amounted to 63 cases (60.57%); G1 PD were 6 cases (5.8%) and G2 PD to 2 cases (1.9%); 3 were not assessed (2.9%) and 30 (28.8%) were not in the system, allowing for the assumption that a considerable amount of patients does not get notified for the exam at the time they are discharged.

The previous analyses were followed by the assessment of the probability for the physical disability grade varying with respect to gender. The odds ratios significantly indicate that the risk for women suffering from Hansen's disease not having physical disabilities *at the time of diagnosis* is about 4 times higher to that of men (OR= 3.868; CI 95%= 1.316-11.368). However, *at the time of cure*, despite the odds ratio value indicating that the probability of a correlation is higher than 1 (OR= 1.250; CI 95%= 0.275-5., 692), this is not statistically significant (Fischer p= 1.00), leaving the option of whether or not these findings should be considered clinically relevant open. (Table 2).

Table 2 – Physical Dis/ability regarding Gender

Gender	**Female**		**Male**		**Chi-square**	
At the time of Diagnosis	n	%	n	%	**χ2**	**p**
Dis/Ability						
Without any Physical Disability – Grade 0	35	87.5	38	64.4		0.010
With Physical Disability – Grades 1 and 2	5	12.5	21	35.6	6.565	
Total (99)	40	100.00	59	100.00		
At the time of Cure						Fischer
Without any Physical Disability – Grade 0	27	90.0	36	87.8		
Affected with Physical Disability – Grades 1 and 2	3	10.0	5	12.2		1.00
Total (71)	30	100.00	41	100.00		

The *clinical form* with *the highest grade of physical disability* was *Dimorphic Leprosy* with 4% of cases with Grade 2, with 6% of cases with Grade 1 and with 21% of patients with Grade 0. In the *Indeterminate* clinical form Grade 0 of Disability was of 17%, Grade 1 of 2% and Grade 2 of 1%. Regarding the *Tuberculoid* form, 23% were Grade 0, 2% Grade 1 and 1% Grade 2. In the *Virchowian* form 3% were Grade 0 and 2% Grade 1, without any cases of Grade 2 reported. Five cases were not classified and there were 13 cases in the system without any information on the disability grade.

The study of the *Physical Disability Grade versus Operational Classification* demonstrated that the highest *grade of disability* was detected in the *multibacillary operational classification*, amounting to 8 cases with Grade 2, representing 8% of the people studied. With Grade 1 there were 13% of multibacillary cases. The analysis of all of the cases allowed for the realisation that 53% of the participants were classified as multibacillary and 42% were classified as paucibacillary, demonstrating that the disease's diagnosis happens far too late. Despite the late diagnosis, there is an assessment of the patients' disability grade at the time of diagnosis, at the time of treatment and at the time of discharge. However, and because at the time of diagnosis paucibacillary patients have already been identified as having Grade 1 disability, it is important to highlight the need for continued monitoring and the importance of health education for this population.

3 - DISCUSSION

The *operational classification of Hansen's disease* in this study revealed a more significant incidence of multibacillary cases (those with more than five skin lesions). This type of Hansen's disease patient has an increased risk of transmitting the disease to its close contacts, given that transmission occurs with intimate and prolonged contact with the diseased, untreated person. It is known that 90% of people have a natural defence against the bacillus of Hansen's disease and that this defence is genetically influenced (Minuto biomedicina, 2015). Among the multibacillary, the highest prevalence was in people of the male gender, as demonstrated in the study by Lima and Aguiar (1015, p.6) in which the epidemiologic behaviour of this occurrence was predominant in the male gender and in the age group of those who were economically active, because diagnosis is still very late despite the constant public policies attempting to eradicate this disease.

The difference in prevalence regarding gender might be explained by the fact that men are not in the habit of caring for their own health or of adopting simple behaviours like observing their own body, which might facilitate early diagnosis and avert unwanted sequelae, thus improving their quality of life.

A study carried out in Santa Catarina, Brazil, demonstrated that the clinical form with the highest prevalence in the male gender was Virchowian leprosy with 39.1% of cases. Among the female gender it was likewise verified that the Indeterminate and Dimorphic forms were more frequent, representing 28.5% each, and within the multibacillary, 55.6% represented the Virchowian form and 29.6% the Dimorphic form". (Lima & Aguiar, 2015, p. 6).

The most prevalent *clinical form* was the Dimorphic with 33 cases, followed by the Tuberculoid with 27 cases. 18 cases were not classified as to clinical form, yet the operational classification revealed a prevalence of multibacillary cases. There was only one case of Indeterminate or Tuberculoid and the remaining 17 cases were distributed under either Dimorphic or Virchowian, which demonstrates the disease's endemicity in the municipality, especially of the presence of Virchowian cases which have a high bacillus load.

In a study on the prevalence of the clinical forms of Hansen's disease in the city of Anápolis-GO, the notifications carried out supported the ascertaining of a higher prevalence of Dimorphic Leprosy with 367 cases (69.91%), followed by Virchowian

Leprosy with 96 cases (18.29%), Indeterminate Leprosy with 27 cases (5.14%) and Tuberculoid Leprosy with 9 cases (1.71%) (Lima, Martins, Honorato, Lopes, Moura, Nogueira, Gonçalves, 2012, p. 55-67).

According to another study, there was also a predominance of the Dimorphic clinical form in the diagnosed cases operationally classified as multibacillary, corresponding to 57.1% of the total of new cases. The year 2009 is worthy of note, seen as it had the largest number of detections, corresponding to 33% of the total of diagnosed cases in that period. Emphasis should also be given to 2010, marked by a larger proportion of dimorphic cases when compared to the other years under study. It is important to stress that within the paucibacillary cases the Indeterminate clinical form was predominant, corresponding to 22% of the total number of cases (Ribeiro, Fabri, Amaral, Machado & Lana, 2014, p.728-35).

The clinical presentation of Hansen's disease in the study by Mesquita (2014) revealed that 11 patients (21.6%) had the Tuberculoid form; 10 (19.6%) had the Dimorphic form; and 9 (17.6%) had the Virchowian form. That information was not available for 21 patients (41.2%).

The *prevalence* of the patients' *Physical Disability Grade* assessed at the time of diagnosis was of 73 cases (70.20%) with *PDG 0*, which supports the possibility of there being less physical damage when the prevention of physical disabilities is guaranteed by a qualified professional at the beginning, middle and end of treatment. In 30 cases within the municipality there were no records in the assessment's information system at the time of cure. Conversely, there was a prevalence of physical disability with *PDG 0* in 63 cases (60.57%) at the time of cure.

In the study by Alves, the Disability Grade prior to treatment was 0 (PDG 0) in 35% of patients, PDG 1 in 34% of patients and PDG 2 in 26% of patients. In 5% of cases no data for assessment was found (Alves et al, 2010, p. 460-461).

In a research study involving 11 municipalities of Paraná, it was observed that a part of the population was in its working age, out of which 79.8% had some degree of disability. The sequelae were more frequent in the lower limbs, with the occurrence of claw feet, dryness of the skin, fissures, plantar lesions, etc. (Sobrinho, Mathias, Gomes & Lincoln, 2007, p. 1125-1130).

According to another study, Sobrinho, Silva de Freitas, Gomes, Alves; Lincoln and Barbosa (2007), 20.2% of cases were of Grade 0 disability; 41.4% were of Grade 1 disability, followed by 38.4% with Grade 2 disability, which demonstrates that most participants were already developing disabilities at the beginning of the treatment.

In the analysis of the epidemiologic profile of Hansen's disease in a study carried out in Maricá, it was ascertained that 157 (85.8%) out of 183 registered patients were examined and 51 (27.9%) had either Grade 1 or 2 of Physical Disability (PDG). There were no cases with PDG 2 during the years 2000 to 2002, 2007 and 2008; and the proportion of cases of Hansen's disease with PDG 2 at the time of diagnosis was considered average (5 to 9.9%) for the period between 2004 to 2006, while for the period between 2009 and 2013 it was high (equal to or higher than 10%). In that study, 157 (85.8%) patients were graded for their PDG for all the years under study, and it was reported that all of them presented either Grade 1 or 2 of PD (de OliveiraI, Leão & Britto, 2014, p. 819).

The percentage of cure in the cohorts is an indicator of results of the activities of spotting cases and measures the services' effectiveness in ensuring adherence to treatment until the discharge date. In 2008 that indicator's result was of 81.3% for the country, a figure that increased in 2009 to 82.1% (85% in PB cases and 80% in MB cases). The irregularity in treatment reduces the chances for Brazil to increase the percentage of cure in the cohorts of new cases of Hansen's disease. In this manner, in order to increase the percentage of cure in the cohorts, improvements in the distribution and actual application of medication, as well as the timely update of the Notification System regarding the patient's type and date of exit (OPAS, 2015) will be necessary.

Furthermore, it is also urgent to begin the assessment and record of disabilities, an essential procedure for the education and promotion of self-care and in order to prevent the development of physical disabilities after medication therapy. (Rodini, 2010, p.157-166).

CONCLUSIONS

Hansen's disease is an infecto-contagious curable. Thus, managing this illness should not be solely restricted to controlling the large number of cases, but conversely, it should also include the consideration of its high debilitating potential which generates economic losses and psychologic traumas and may influence the patient's job and social life.

This research allowed to assess patients of Hansen's disease diagnosed in the municipality of Cabo de Santo Agostinho, Recife, Brazil. It was further ascertained that this nosologic entity still presents a considerable amount of late diagnosed cases in the municipality, given that we found multibacillary cases with a high bacillus load which were prevalent during the period under study. Most patients were diagnosed with the dimorphic clinical form. However, the largest occurrence was of individuals without any deformities and Grade 0 of Physical Disability was prevalent, despite there being patients with confirmed disabilities. The chain of transmission and children's early exposure to high bacillus load increases the population's risk of falling ill. In this study, we also observed that there were children and adolescents diagnosed with the disease, which demonstrates endemicity in the municipality. This reality was verified in the State of Pernambuco, Brazil, where the coefficient of detection of new cases in the population under the age of 15 classifies it as hyperendemic, placing it in the 6th position in coefficient and in the 3rd position in absolute number of cases, reflecting the existence of hidden endemicity in the state. Cases are distributed in most municipalities of the 12 Health Regions, with 40% concentrated in the 1st Health Region, where the municipality is located (Pernambuco, 2013). Accordingly, decisions concerning the measures that should be implemented should consider the epidemiologic singularities of the disease in relation to age group and geographical context. It is also worth stressing the fact that men are more affected by severe forms of the disease and present a higher grade of physical disability than women.

The Enhanced Global Strategy for Further Reducing the Disease Burden Due to Leprosy: 2011-2015, establishes concrete objectives for the fight against Hansen's disease, wherein it lists a series of strategies and guidelines for the managers regarding their role and highlights the urgency of an equitable and socially just access to health services. This is indeed a guidebook worth following, seen as it addresses issues like the importance of an effective reference system capable of integrating the remaining basic services and contributing to an effective backup system for the professionals who seek support. The active search of cases within the community, the correct examination of the contacts in the diagnosed cases, the systematic monitoring of patients in the healthcare units, as well as the use of health education strategies (OMS, 2010), are all examples of possible strategies.

Knowing that Hansen's disease develops causing disabilities and also leads to problems of psychological origin and lack of family support, prejudice and stigma in the social memory, exclusion from social life of the people suffering from this disease (Carvalho, 2013, p. 47-55), it is important to deepen scientific knowledge about the best way to control the disease nowadays. Carrying out the assessment is as important as its maintenance and the reinforcement of self-care in all the consults, seen as both clinical practice and evidence show that patients with severe lesions, even when cured of the illness are not cured from their disability.

Other studies must be carried out so as to assess the influence of health policies in clarifying issues pertaining to the epidemiologic singularities of the disease in this region and in the specificity of the environmental context.

The data of the patients who are diagnosed, included the Notification Form, should be adequately filled in so as to supply the notification system (SINAN) which still shows some weaknesses because of lack or failure in information, whether because data are absent or due to nullity of procedures carried out by the several professionals, such as disability assessments which are often carried out by trained professionals but not kept in record. We further highlight the need to improve work processes, raising awareness among the professionals for the effective assessment of results in clinical practice and of the completion and delivery of the monthly Bulletins and Notification Forms in Epidemiologic Surveillance which should be improved seen as any delays in delivery hinders data update and the monitoring of patients. An adequate and reliable record will allow building safe indicators in the areas of clinical practice, epidemiology, and policy making with management and research potential in the future.

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CARACTERIZAÇÃO FÍSICO-QUÍMICA E SENSORIAL DE DOCES DE FRUTOS DE S. TOMÉ E PRÍNCIPE

PHYSICO-CHEMICAL AND SENSORY CHARACTERIZATION OF FRUIT JAMS OF S. TOMÉ AND PRÍNCIPE

CARACTERIZACIÓN FISICOQUÍMICA Y SENSORIAL DE MERMELADAS DE FRUTAS DE S. TOMÉ Y PRÍNCIPE

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RESUMO

Introdução: São Tomé e Príncipe tem uma grande variedade de árvores frutíferas, sendo a maioria dos frutos consumida em fresco. Em certos períodos do ano, os frutos estão disponíveis em quantidades significativas, não sendo comum usar o excedente. Assim, o excedente de frutos pode ser usado na preparação de outros produtos (ex. doces), para aumentar a diversidade de produtos e permitir o consumo anual desses frutos sazonais.

Objetivos: Avaliar as características dos frutos de S. Tomé e Príncipe.

Métodos: Preparação de doces de banana, cajá-manga, goiaba (escura e clara) e mamão, com diferentes teores de açúcar, e posteriormente proceder à sua caracterização físico-química (cor, pH, teor de humidade e acidez) e sensorial, através de testes de preferência e aceitabilidade.

Resultados: Os doces preparados apresentaram diferentes cores e valores de acidez, humidade e cinza, demonstrando a possibilidade de elaboração de diferentes produtos pela modificação da formulação. Quanto à preferência dos doces, 60% dos consumidores preferiram os menos doces no caso da banana e goiaba (clara), enquanto mais de 67% dos participantes preferiram o doce de cajá- manga mais doce. Quanto à goiaba escura e papaia, as percentagens foram semelhantes para ambos os teores de açúcar. Para todos os atributos analisados (aparência, cor, sabor, acidez, doçura e avaliação global), a maioria dos participantes gostou ligeiramente de todos os doces.

Conclusões: A produção de doces em S. Tomé e Príncipe apresenta-se como uma atividade promissora. A qualidade dos atributos analisados deve ser monitorizada, para satisfazer os consumidores.

Palavras-chave: Doces; banana; cajá-manga; goiaba; mamão.

ABSTRACT

Introduction: São Tomé and Príncipe has a wide variety of fruit trees, being most of the fruits consumed in fresh. In certain periods of the year, fruits are available at significant amounts; however, it is not common to use the surplus of those fruits. Thus, this excess may be used in the preparation of other fruit based products (ex. jams), in order to increase product diversity and allow the annual consumption of these seasonal fruits.

Objetives: To evaluate the characteristics of the fruits of S. Tomé and Príncipe.

Methods: Preparation of jams of banana, ambarella, guava (dark and light) and papaya, with two levels of sugar, and perform their physico-chemical characterization (color, pH, moisture and acidity). Furthermore, sensory analysis was also done, through preference and acceptability tests.

Results: The jams prepared had different colours, acidity values, and moisture and ash contents, demonstrating the possibility of producing different products by changing the formulation. Regarding jams preference, 60% of the consumers preferred the less sweet in the case of banana and guava (light), whereas, over 67% of the panellists preferred the sweetest ambarella jam. Concerning dark guava and papaya, the percentages were similar for both sugar contents. For all attributes analysed (appearance, colour, taste, acidity, sweetness and global evaluation), most of the panellists liked slightly all jams.

Conclusion: The production of jams in S. Tomé and Príncipe presents itself as a promising activity. The quality of the attributes analyzed must be monitored to satisfy consumers.

Keywords: Jams; banana; ambarella; guava; papaya.

RESUMEN

Introducción: S. Tomé y Príncipe tiene una gran variedad de árboles frutales, siendo la mayoría de los frutos comidos en fresco. En ciertos períodos del año, los frutos están disponibles en cantidades significativas, no siendo común el uso de los excedentes. Por lo tanto, este excedente se puede utilizar en la preparación de otros productos y permitir el consumo anual de la fruta de temporada.

Objetivos: Evaluar las características de los frutos de Santo Tomé y Príncipe.

Métodos: Preparación de mermelada de plátano, caja-mango, guayaba (clara y oscura) y papaya con distintos contenidos de azúcar, y proceder à su caracterización físico-química (color, pH, contenido de humedad y acidez) y sensorial, a través de pruebas de preferencia y aceptabilidad.

Resultados: Las mermeladas preparadas tenían diferentes colores y valores de acidez, humedad y cenizas, lo que demuestra la posibilidad de producir diferentes productos. En relación à la preferencia de las mermeladas, 60% de los consumidores prefiere la menos dulce en el caso del plátano y guayaba (clara), mientras más del 67% de los participantes prefiere la mermelada de caja-mango más dulce. En cuanto a la guayaba oscura y papaya, los porcentajes fueron similares para ambos niveles de azúcar. Para todos los atributos analizados (aspecto, color, sabor, acidez, dulzor y evaluación global), la mayoría de los participantes les gustó un poco todas las mermeladas.

Conclusións: La producción de mermelades en Santo Tomé y Príncipe se presenta como una actividad prometedora. La calidad de los atributos analizados debe monitorearse para satisfacer a los consumidores.

Palabras Clave: Mermeladas; plátano; caja-mango; guayaba; papaya.

INTRODUCTION

S. Tomé and Príncipe is a small country with two islands, São Tomé and Príncipe, located in Gulf of Guinea. The climate is equatorial type, favourable to the development and production of a wide variety of fruit trees. With rare exceptions, the majority of fruits is of seasonal occurrence and is consumed fresh. Thus, in certain periods of the year fruits are in significant amounts unlike others, where fruit is not available. In S. Tomé and Príncipe it is not common to use the surplus of fruits in the abundance period; however, during this period there is high availability of raw material for preparing other fruit based products (ex. jams) that may increase product diversity and allow the annual consumption of these seasonal fruits.

Among fruits with the highest distribution and importance in S. Tomé and Príncipe, banana (*Musa* spp.), papaya (*Carica papaya*), ambarella (*Spondias dulcis* (syn. *Spondias cytherea*)) and guava (*Psidium guajava*) must be highlighted. Ambarella and guava are seasonal fruits, whereas papaya and banana can be eaten at any time of year. So far, some studies conducted in jams and jellies of tropical fruits have already been made. Concerning banana, jellies have been prepared from banana peel (Lee, Yeom, Ha, & Bae, 2010; Borges et al. 2011), due to its richness in pectin. Regarding ambarella, Lago-Vanzela et al. (2011) observed that jelly prepared from skin showed satisfactory acceptance. Relatively to guava, two kinds are found in S. Tomé, namely, dark and light. Guava is usually consumed fresh or in the form of jam, called “goiabada”. Also common are candies, jellies and juices; however, in S. Tomé and Príncipe these forms are uncommon. Regarding guava, there are few studies published on this topic until now. López, Ramírez, & Farinas (2000) characterized guava jams of different batches of three brands sold in Venezuela, finding significant differences between batches of each brand in relation to acidity, total soluble solids, reducing sugars and colour, suggesting a lack of control in the preparation of guava jam. Fernandes et al. (2013) characterized sensorially guava jellies prepared with brown sugar and refined sugar, finding that colour and sweetness are important attributes in the choice of jellies by consumer. Regarding papaya and due to its quick ripening and ability to reduce blood cholesterol, Rajarathnam (2010) suggests the preparation of papaya based products.

Although there are already some studies made in jellies of banana, ambarella and guava, few works have been made on jams of these fruits and no study has been done so far on tropical fruits of S. Tomé and Príncipe. Thus, in the present work we intended to: (i) perform the physico-chemical characterization of four types of tropical fruits, namely, banana, ambarella, guava (dark and light) and papaya of S. Tomé and Príncipe; (ii) prepare fruit jams with different sugar contents; and (iii) characterize them in physico-chemical and organoleptic terms.

1. METHODS

1.1 Sample

Banana, ambarella, guava (light and dark) and papaya were harvested at the proper state of maturity in various localities of the district of Mé-Zochi of S. Tomé and Príncipe: 30 ambarellas were collected in Trinity Chapel, 30 light guavas in Bobô Forro, and 30 dark guavas, 10 papaya and 21 bananas in Gramechele at Quinta das Palmeiras. After harvest, the fruits were transported to the laboratory under refrigeration. Upon arrival, the fruits were washed with deionized water and stored under refrigeration (24 hours max.) until analysis.

1.2 Physical characterization of fruits

The axial dimensions of fruits were measured with a calliper and ruler. In ambarella, papaya and guavas, the height and width of fruits were determined. In the case of banana the diameter at the middle of the fruit and length were measured. All fruits were weighed on an analytical balance (Kern, ACJ 220-4M, Germany). Finally, the various constituents of fruits (peel, pulp and seeds) were separated and weighted (with the exception of banana that seeds and pulp were not separated).

1.2 Preparation of the jams

For each type of fruit, two types of jams were prepared, namely: (i) 1 kg of fruit pulp + 600 g of sugar (sucrose); and (ii) 1 kg of pulp + 800 g of sugar, following the requirements of the Portuguese Law-Decree No. 230/2003. After mixing the pulp with sugar, the mixture was let to boil until obtaining a jam with the desired consistency.

1.3 Physico-chemical characterization of the jams

In all jams the following parameters were evaluated: colour, ash, pH, moisture and acidity. The colour was evaluated with a colorimeter Minolta CR-400 (Japan) in the CIELab mode (L^*, a^* and b^* coordinates). L^* (lightness) varies between 0 (completely black) to 100 (completely white), a^* -60 (green) to +60 (red), and b^* -60 (blue) to +60 (yellow). pH was measured directly with a potentiometer (Jenway, model 370 pH Meter, England). Moisture was determined by weight loss at 105 ºC to constant weight and ash by the AOAC Method 940.26 (AOAC, 1940). Acidity (% citric acid) was determined by titrimetric analysis with NaOH 0.1 M (Eq. 1):

$$Citric\ Acid\,(g/100g\ \ sample) = \frac{[NaOH](mol/dm^3)\times v(dm^3)\times (MM\,(C_6H_8O_7)(g/mol)/3)\times 100}{m_{sample}(g)} \quad (1)$$

1.4 Sensory analysis

In order to evaluate the preference and acceptance of the jams prepared, a consumers' panel was used (n=40). The sensory analysis took place in consecutive days, due to the high number of samples. In each day the jams with the two sugar contents of the same fruit were analysed. Each jam was identified with a random number with three digits, being given approximately 15 g to each panellist. The panellists were asked to indicate the preferred jam, following its evaluation in terms of acceptance. A 9-point hedonic scale was used: 1–disliked extremely, 2-disliked very much, 3–disliked moderately, 4–disliked slightly, 5–neither liked nor disliked, 6-liked slightly, 7-liked moderately, 8–liked very much, 9–liked extremely. The attributes evaluated were appearance, colour, taste, acidity, sweetness and overall evaluation.

1.5 Statistical Analysis

Statistical analysis was performed in SPSS (v.19, SPSS Inc., Chicago) software. To evaluate the effect of fruit and sugar ratio on the physico-chemical properties of jams, a two-way ANOVA was carried out to determine if there were significant differences ($p < 0.05$) between both samples. In the sensory analysis, the nonparametric Wilcoxon-Mann-Whitney test was applied in order to compare the sweetest and less sweet jams of each tropical fruit. In order to evaluate the role of gender on jams preference, the chi-square or Fisher's exact tests were applied.

2 RESULTS AND DISCUSSION

2.1 Physical characterization of fruits

The axial dimensions and weights of the skin, pulp and seeds of the tropical fruits are described in Table 1. Papaya had the highest weight, followed by banana and ambarella. On contrary, guavas were the lightest fruits. Concerning seeds, ambarella and papaya were the only fruits that had seeds of considerable weight. Regarding axial dimensions, papaya was the fruit that presented the highest values of height and width. In terms of pulp yield, ambarella and dark guava were those that showed the highest values; however, it was found that all fruits showed a pulp yield higher than 70%, demonstrating to be suitable for jams' formulation.

Table 1 - Physical characterization of the fruits

Fruit	Weight [g]	Height [mm]	Width [mm]	Skin Weight [g]	Seeds Weight [g]	Pulp Weight [g]	Pulp yield [%]
Ambarella	126.6±15.6	70.0±4.3	55.9±2.6	14.0±2.3	10.3±2.8	102.3±14.2	80.7±2.4
Banana	143.3±34.4	18.3±1.0[a]	36.4±6.1[b]	41.6±6.9	-	101.6±28.3	70.6±2.4
Dark Guava	36.7±12.4	41.9±4.6	38.1±4.1	7.5±2.4	Aprox. 3.7	29.2±10.4	79.1±3.6
Light Guava	47.0±12.7	47.0±4.6	42.2±3.9	11.9±2.4	Aprox. 5.2	35.1±10.7	74.0±3.5
Papaya	552.9±178.9	112.5±11.5	98.4±11.7	97.7±24.6	55.5±33.2	399.7±125.6	72.4±2.2

Mean ± Standard Deviation (SD). [a]The value refers to fruit length. [b]The value refers to fruit diameter measured at the middle.

2.2 Physico-chemical characterization of jams

Firstly it was found that the effect of sugar on the physico-chemical parameters analysed was influenced by the fruit used on jam formulation due to the significant interactions observed between the two factors (Table 2). By analysing the different jams prepared (Table 3), ambarella jams presented the lowest pH values (2.59 and 2.62); however, no significant differences were found between jams prepared with the two sugar proportions. On contrary, among the two papaya jams (with the highest pH) significant differences were detected between them. Our pH values were similar to those determined in a dietetic ambarella jam (2.42 to 2.92) (Mamede et al. 2013) and guava jams prepared with sugar (3.80 and 4.02) (Marquina, Araujo, Ruíz, Rodríguez-Malaver, & Vit, 2008; Correa et al. 2011) and sweetener (3.75) (Correa et al. 2011). Conversely, the pH values determined in this work for guava jams were slight higher than the value reported by López et al. (2000) (3.28) when analysing three commercial guava jams. According to Mamede et al. (2013), a pH of 3.2 is a reference value for gel formation and to obtain suitable consistency, since a pH lower than 3.2 will yield a jam with high consistency, whereas a high pH will decrease it. When considering this reference value, it was found that only the ambarella jams showed mean pH values lower than 3.2, explaining their firmness. On contrary, the banana and papaya jams showed lower consistency due to their high pH. Regarding acidity, no significant differences were found between jams formulated with both sugar contents, with the exception of ambarella. According to Mamede et al. (2013), acidity values greater than 1% will cause syneresis. All jams prepared in our work had lower acidity values than 1%, not being observed this phenomenon. Regarding guava jams, our acidity values were identical to the mean (0.59% of citric acid) determined by López et al. (2000) for three commercial guava jams, but higher than 0.12% determined for guava jams formulated with and without sugar by Correa et al. (2011).

Table 2 – Physico-chemical characterization of the jams.

	pH	L*	a*	b*	Acidity [% citric acid]	Moisture content [%]	Ash content [%]
Jam							
Ambarella	2.61±0.03^{a}	31.60±0.46^{a,b}	0.72±1.21^{b}	15.34±0.47ª	0.70±0.18^{c}	52.86±1.02^{c}	0.12±0.11^{a}
Banana	4.82±0.05^{e}	40.90±0.64^{d}	0.84±0.41^{b}	16.97±0.35^{b}	0.16±0.03^{a}	51.75±2.67^{b}	0.38±0.03^{e}
Dark Guava	3.76±0.02^{c}	31.69±1.05^{b}	11.31±0.64^{d}	14.95±0.87^{a}	0.60±0.05^{c}	55.62±3.14^{d}	0.33±0.10^{c}
Light Guava	3.88±0.02^{d}	34.54±1.95^{c}	4.15±0.04^{c}	17.77±1.09^{c}	0.38±0.01^{b}	56.28±4.08^{e}	0.40±0.04^{e}
Papaya	4.96±0.04^{b}	31.42±1.60^{a}	0.50±1.56^{a}	21.40±2.37^{d}	0.31±0.03^{b}	48.44±2.44^{a}	0.25±0.10^{b}
p-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Proportion [Pulp:Sugar]							
1:0.6	4.01±0.00	34.86±3.88^{a}	3.49±4.74^{a}	18.05±3.14^{a}	0.39±0.16^{a}	54.37±4.34^{a}	0.36±0.08^{a}
1:0.8	4.01±0.89	33.20±3.91^{b}	3.52±4.10^{b}	16.52±1.80^{b}	0.47±0.25^{b}	51.61±2.87^{b}	0.23±0.13^{b}
p-value	0.864	<0.001	0.027	<0.001	<0.001	<0.001	<0.001
Jam × Proportion [Pulp:Sugar]							
p-value	<0.001	<0.001	<0.001	<0.001	0.006	<0.001	<0.001

Values followed with different letters in each column are significantly different ($p < 0.05$).

Table 3 – Physico-chemical parameters determined in São Tomé and Príncipe jams produced in the present work.

Jams[a]	pH	Acidity [% citric acid]	Colour			Moisture content [%]	Ash content [%]
			*L**	*a**	*b**		
Ambarella (1:0.6)	2.59±0.01^{a}	0.58±0.04^{a}	31.19±0.22^{a}	1.72±0.11^{a}	14.94±0.53^{a}	53.72±0.25^{a}	0.22±0.01^{a}
Ambarella (1:0.8)	2.62±0.01^{a}	0.83±0.13^{b}	31.97±0.13^{b}	-0.31±0.06^{b}	15.59±0.21^{a}	52.00±0.32^{b}	0.03±0.00^{b}
Banana (1:0.6)	4.80±0.04^{a}	0.15±0.03^{a}	41.38±0.18^{a}	0.47±0.09^{a}	17.18±0.19^{a}	49.44±0.25^{a}	0.40±0.00^{a}
Banana (1:0.8)	4.86±0.01^{b}	0.17±0.00^{a}	40.29±0.14^{b}	1.19±0.02^{b}	16.61±0.13^{b}	54.06±0.00^{b}	0.36±0.00^{b}
Dark Guava (1:0.6)	3.76±0.01^{a}	0.56±0.03^{a}	32.62±0.06^{a}	11.83±0.05^{a}	15.69±0,03^{a}	58.34±0.12^{a}	0.42±0.02^{a}
Dark Guava (1:0.8)	3.77±0.01^{a}	0.64±0.01^{a}	30.77±0.01^{b}	10.77±0.08^{b}	14.18±0.03^{b}	52.90±0.00^{b}	0.24±0.01^{b}
Light Guava (1:0.6)	3.88±0.01^{a}	0.36±0.02^{a}	36.21±0.03^{a}	4.19±0.02^{a}	18.70±0.03^{a}	59.81±0.03^{a}	0.44±0.00^{a}
Light Guava (1:0.8)	3.86±0.01^{a}	0.39±0.01^{a}	32.83±0.04^{b}	4.14±0.04^{a}	16.78±0.08^{b}	52.75±0.06^{b}	0.37±0.00^{b}
Papaya (1:0.6)	5.00±0.01^{a}	0.29±0.03^{a}	32.70±0.31^{a}	-0.94±0.22^{a}	23.18±0.49^{a}	50.55±0.08^{a}	0.33±0.04^{a}
Papaya (1:0.8)	4.93±0.01^{b}	0.32±0.02^{a}	29.79±0.45^{b}	1.91±0.11^{b}	19.39±0.08^{b}	46.32±0.09^{b}	0.17±0.02^{b}

Mean ±SD. For each jam values followed with different letters in each column are significantly different ($p < 0.05$). [a]Values in parentheses indicate the proportion of pulp and sugar (w:w).

Colour is another important parameter for future acceptability of the product. Banana jams were those that showed the highest L* values (Table 3). With the exception of ambarella, the jams prepared with more sugar consistently reported lower L* values than those prepared with less sugar, due to sugar caramelization and subsequent formation of hydroxymethylfurfural that is an intermediate product, capable of undergoing polymerization and able to produce melanin, compound responsible for the darkening of the product (Mamede et al. 2013). Regarding a* parameter, the ambarella (1:0.8) and papaya (1:0.6) jams showed negative values, suggesting greenish colour. On contrary, the highest positive values were determined in dark guava, followed by light guava jams, due to their intense reddish colour. Moreover, the light and dark guava jams prepared with less sugar had a* values higher than jams with more sugar, as a result of the greater proportion of pulp present in the former jams. In terms of b*, this parameter was always higher than a* for all jams, indicating the importance of the yellow colour in the jams prepared. The papaya jams had the highest b* values, followed by light guava and banana. Generally, the jams with less amount of sugar (1:0.6) had significantly higher mean values of b* than those prepared with more sugar, due to the yellow colour of the fruit pulps.

The moisture contents varied between jams with different sugar contents, decreasing with sugar content (Table 3). Our values were higher than those reported by Mamede et al. (2013) for ambarella jams (26.27 to 31.98%), but lower to Correa et al. (2011) who determined mean moisture contents of 75.00 and 71.24% for guava jams prepared with and without sugar in their formulation, respectively. Marquina et al. (2008) also obtained lower mean moisture content for guava jams, 23.21%, than ours.

Concerning ash content (Table 3), the mineral content decreased with sugar concentration because refined sugar was used in jam formulation, being its mineral content low. Our ash contents were similar to Mamede et al. (2013) for ambarella jams, 0.2 and 0.3%. On contrary, Correa et al. (2011) and Marquina et al. (2008) found higher ash contents of 0.60 and 0.50%, respectively, for guava jams prepared with sugar than ours.

2.3 Sensory analysis

It was observed that the choice of jam by sugar content was not dependent on gender ($p > 0.05$). When considering the preference of the panellists by one of the two sugar contents of each jam, it was found that for banana and light guava more than 60% of consumers preferred the jams with less sugar (65 and 75%, respectively). On contrary, over 67% of the panellists preferred the sweetest ambarella jam. In the case of dark guava and papaya, the percentages of preference were similar for both jams, with slight preference for the less sweet in the case of dark guava (52%) and for the sweetest in the case of papaya (55%). The results obtained for dark guava jam were similar to those described by Fernandes et al. (2013) for guava jellies prepared with brown sugar and refined sugar, being the less sweet jelly the preferred.

Regarding jams acceptability (Table 4 and Figure 1), no significant differences between both sugar levels for each fruit jam were observed for all parameters analysed. All jams had means greater than 6, indicating that the panellists liked slightly them. In terms of overall evaluation, the mean varied between 7.31 and 7.92, suggesting good future acceptance of these jams by consumers and indicating the potential of tropical fruit jams' industry in S. Tomé and Príncipe.

Table 4 – Acceptability test of the jams

	Ambarella		**Banana**		**Dark Guava**		**Light Guava**		**Papaya**	
	Less sweet (1:0.6)	More sweet (1:0.8)	Less sweet (1:0.6)	More sweet (1:0.8)	Less sweet (1:0.6)	More sweet (1:0.8)	Less sweet (1:0.6)	More sweet (1:0.8)	Less sweet (1:0.6)	More sweet (1:0.8)
Appearance	7.62±0.96^{a}	7.63±1.39^{a}	6.58±1.42^{a}	6.93±1.00^{a}	7.32±0.78^{a}	7.40±0.68^{a}	7.67±0.96^{a}	7.80±1.14^{a}	7.68±1.06^{a}	7.78±0.90^{a}
Colour	7.77±0.83^{a}	7.81±1.21^{a}	5.92±1.79^{a}	7.00±1.30^{a}	7.50±0.80^{a}	7.70±0.98^{a}	7.53±0.97^{a}	7.30±1.06^{a}	8.05±0.91^{a}	7.65±0.71^{a}
Taste	7.77±1.09^{a}	7.48±1.37^{a}	7.35±1.09^{a}	7.64±0.93^{a}	7.36±1.53^{a}	7.30±0.92^{a}	7.93±0.98^{a}	7.40±1.71^{a}	7.00±1.80^{a}	7.17±1.72^{a}
Acidity	7.08±1.50^{a}	7.15±1.59^{a}	7.38±1.17^{a}	6.86±1.79^{a}	7.00±1.57^{a}	7.10±1.25^{a}	7.40±1.25^{a}	7.20±1.55^{a}	7.05±1,61^{a}	6.65±2.01^{a}
Sweetness	7.38±1.19^{a}	7.22±1.40^{a}	7.23±1.11^{a}	7.64±1.08^{a}	7.23±1.69^{a}	7.05±1.28^{a}	7.93±0.78^{a}	7.30±1.16^{a}	6.89±1.73^{a}	6.65±1.70^{a}
Overall evaluation	7.92±0.95^{a}	7.59±1.39^{a}	7.31±1.26^{a}	7.57±0.76^{a}	7.50±1.18^{a}	7.35±1.04^{a}	7.80±0.89^{a}	7.50±1.35^{a}	7.79±0.85^{a}	7.35±0.65^{a}

Mean±SD. For each jam values followed with the same letter in each row do not differ significantly ($p > 0.05$).

CONCLUSIONS

Our results suggest that the formulation of jams from tropical fruits of S. Tomé and Príncipe can be an excellent option to use the surplus of these fruits, allowing the introduction of jams produced in this country in national and international markets, which is not a common practice. It was found that for banana and light guava the consumers preferred the jams with less sugar, while for ambarella they preferred the sweetest jam. In the case of dark guava and papaya, both jams (with less and more sugar) were accepted almost equally, with slight preference for the less sweet in the case of dark guava and for the sweetest in the case of papaya. Nevertheless, as a suggestion for future work, food safety and product stability issues shall be addressed.

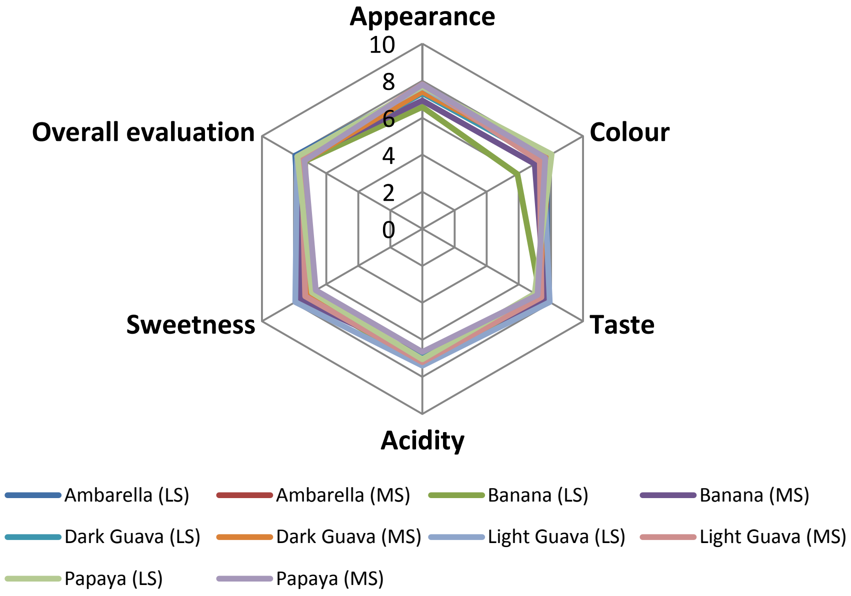

Figure 1 – Sensory characteristics of the less sweet (LS) and more sweet (MS) ambarella, banana, dark guava, light guava and papaya jams.

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UM OLHAR SOBRE O CENTRO APOIO ALZHEIMER VISEU

A LOOK AT THE ALZHEIMER SUPPORT CENTER VISEU

UNA MIRADA AL CENTRO APOYO ALZHEIMER VISEU

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RESUMO

Introdução: Em todo o mundo é diagnosticado um novo caso de demência a cada 3 segundos, perfazendo cerca de 9,9 milhões de novos casos em 2015 (Prince, *et al*., 2015). A demência é uma síndrome orgânica adquirida, geralmente crónica, caracterizada pela perda progressiva de capacidades cognitivas e funcionais devido à degeneração gradual das diversas zonas cerebrais. Compromete a vida pessoal, familiar, profissional e social do indivíduo, afetando severamente a sua autonomia e independência.(Nunes, 2014).

Objetivos: Divulgar o trabalho desenvolvido pelo Centro de Apoio ao Alzheimer Viseu (CAAV); Caraterizar o perfil e as necessidades dos cuidadores que o procuram os serviços do CAAV.

Métodos: Estudo exploratório desenvolvido tendo por base os dados de uma amostra de 166 cuidadores de pessoas com demência que recorreram ao do CAAV entre 2014 e 2017. São maioritariamente cuidadores informais (137), que em algum momento prestaram apoio a tempo inteiro ao doente, sem qualquer ajuda externa, prevalecendo a procura por parte do sexo feminino, com 128 pedidos de apoio, contra 38 cuidadores do sexo masculino.

Resultados: Os serviços mais procurados no CAAV são: apoio técnico, social/médico/jurídico, bem como o apoio psicológico e o grupo de suporte. A maior parte das pessoas que solicitam estes serviços são mulheres, nomeadamente filhas/os dos pacientes (49%), seguindo-se os conjugues (27%), sendo a demência de Alzheimer a patologia mais frequentemente referenciada.

Conclusões:

Os resultados mostram que o CAAV se assume uma entidade com impacto individual e social, pelo que tendo por base o modelo de Atenção Centrado na Pessoa, o CAAV pretende a curto e médio prazo criar novos serviços de suporte às necessidades e exigências das pessoas com demência e seus cuidadores.

Palavras-chaves: Alzheimer; Demência; Cuidadores; Intervenção.

ABSTRACT

Introduction: Every 3 seconds, a new case of dementia is diagnosed around the world, amounting around 9.9 million of new cases in 2015. (Prince, *et al*., 2015) Dementia is an acquired organic syndrome, usually chronic, characterized by the progressive loss of cognitive and functional capacities due to the gradual degeneration of the several cerebral zones. It compromises the personal, family, professional and social life of the individual, severely affecting their autonomy and independence. (Nunes, 2014)

Objective: To disseminate the work developed by the *Centro de Apoio ao Alzheimer Viseu (CAAV);* To characterize the profile and needs of caregivers who seek the services of *CAAV.*

Methods: An exploratory study developed based on data from a sample of 166 caregivers of people with dementia who recruited the CAAV between 2014 and 2017.

They are mostly informal caregivers (137), who at some point provided full-time support to the patient without any outside help, with female demand prevailing with 128 requests for support against 38 male caregivers.

Results: The most sought after services in CAAV are: technical, social / medical / legal support, as well as psychological support and support group. Most of the people who request these services are women, especially the patients' daughters (49%), followed by the spouses (27%), with Alzheimer dementia being the most frequently referred pathology.

Conclusions: The results show that the CAAV assumes an entity with individual and social impact, so based on the Person Centered Care model, CAAV intends in the short and medium term to create new services to support the needs and demands of people with dementia and their caregivers.

Keywords: Alzheimer; Dementia; Caregivers; Intervention.

RESUMEN

Introducción: En todo el mundo es diagnosticado un nuevo caso de demencia cada 3 segundos, un total de 9,9 millones de nuevos casos en 2015 (Prince, *et al*., 2015). La demencia es un síndrome orgánico adquirido, generalmente crónica, caracterizado por la pérdida progresiva de la capacidad cognitiva y funcional, debido a la degeneración gradual de numerosas áreas cerebrales. Comprometida con la vida personal, familiar, profesional y las condiciones sociales del individuo, lo que afecta gravemente su autonomía e independencia. (Nunes, 2014).

Objetivo: Divulgar el trabajo desarrollado por el Centro de Apoyo al Alzheimer Viseu (CAAV); Caracterizar el perfil y las necesidades de los cuidadores que buscan los servicios del CAAV.

Métodos: Estudio exploratorio desarrollado teniendo como base los datos de una muestra de 166 cuidadores de personas con demencia que recurrieron al del CAAV entre 2014 y 2017. Son mayoritariamente cuidadores informales (137), que en algún

momento prestaron apoyo a tiempo completo al paciente, sin ninguna ayuda externa, prevaleciendo la demanda por parte del sexo femenino, con 128 solicitudes de apoyo, contra 38 cuidadores del sexo masculino.
Resultados: Los servicios más buscados en el CAAV son: apoyo técnico, social / médico / jurídico, así como el apoyo psicológico y el grupo de apoyo. La mayoría de las personas que solicitan estos servicios son mujeres, en particular hijas / os de los pacientes (49%), seguido de los conjugues (27%), siendo la demencia de Alzheimer la patología más frecuentemente referenciada.
Conclusiones: Los resultados muestran que el CAAV se asume una entidad con impacto individual y social, por lo que teniendo como base el modelo de Atención Centrado en la Persona, el CAAV pretende a corto y medio plazo crear nuevos servicios de soporte a las necesidades y exigencias de las personas con demencia Y sus cuidadores.

Palabras Clave: Alzheimer; Demencia; Cuidadores; Intervención.

INTRODUCTION

The dementia are one of the leading causes of disability and dependence among the older people all over the world. According to the Alzheimer's disease International there are currently approximately 46.8 million people with dementia worldwide, it is expected that this number could double in the next 20 years (Prince et al., 2015).
Dementia designates an acquired organic syndrome, usually chronic, characterized by the progressive loss of cognitive abilities and functional, due to the gradual degeneration of various areas of the brain. This results in different symptoms and disabilities of the subject to make the most diverse family activities, social, labor and daily, producing a personal maladaptation to their environment. As the dementia progresses, there is an overall loss of independence and autonomy, requiring an aid and a constant supervision (Peña-Casanova, 1999).
Alzheimer's disease is the most common - 50% to 70% of cases of dementia (Bridges, 2016), and although not a normative pathology to the aging process, is often labelled as a "disease of the elderly".
Although age is the risk factor most referenced to the emergence of dementia, other factors can interconnect to provide your appearance, including genetic factors, oxidative stress, factors of vascular nature, traumatic brain injury, toxic environment, tobacco, sleep apnea, low education, among others (Nunes, 2014).
In the wake of several studies, we believe that there is no one factor that is the cause in particular, deriving from a set of factors that affect each subject, developing over the years upon their individuality (U.S. Department of Health & Human Services, 2006).
In spite of the investment that has been made in the search for the cure of the disease, it is still irreversible and the pharmacological treatments combined with cognitive techniques for rehabilitation, so widely disseminated in these cases only allow an improvement and a reduction in the behavioural changes, a stabilization of cognitive deficits for some time, as well as the improvement of the quality of life of patients and their families (Bottino et al., 2002; Marksteiner & Schmidt, 2004).
In the absence of cure, one of the priorities lies about looking for strategies to help caregivers to deal properly with these patients, as well as the identification of symptoms and risk factors to reduce the prevalence and impact of the pathology (U.S. Department of Human Health & Human Services, 2008).
In the absence of specialized responses at the support levelfor caregivers, patients and their families in the municipality of Viseu, the Obras Sociais do Pessoal da Câmara Municipal e dos Serviços Municipalizados de Viseu (IPSS) developed the project Alzheimer Support Center Viseu (CAAV).
The initial purpose is to provide psychological and social support to families and caregivers - both formal and informal - of people who suffer with the Alzheimer's disease (AD) or other dementias. Currently focuses its activities on four fundamental pillars - Prevention, Diagnosis, Monitoring the course of the disease and in the Mourning process-, while offering a range of services directed to the patient as well as for the general population.

1. THEORETICAL FRAMEWORK

The Alzheimer disease is characterized by a total change and persistent cognitive functioning, severe enough to have an impact on the patient's life. Of degenerative character, associated to an organic process, with a slow and insidious start, evolving progressively and gradually (Peña-Casanova, 1999). It begins with an asymptomatic or pre-clinic phase in which the disease is not yet sufficiently developed to cause changes in cognitive functioning. There are changes in the verbal memory, difficulty to distinguish the changes in memory of normal aging. The symptoms of early dementia, will steadily deteriorated, starting to interfere in a person's life. The deterioration of cognitive disorders and psycho-behavioral disorders lead to loss of autonomy and independence, and subsequently, to death, a process that can last between 8/12 years (Nunes, 2014).
Even though the signs, symptoms and the development of the manifestations of Alzheimer's disease are different for each person, there are common traits in its temporal evolution which allow you to define some stages of progression. The World Health Organization (2012) has established three stages:

1- Initial - difficulties in language, memory, disorientation in time and space, difficulty in making decisions, lack of initiative and motivation to start tasks (both more familiar or pleasant as new ones) or conversations, manifestation of signs of depression and aggressiveness and loss of interest in the work or hobbies;
2- Intermediate - serious changes in memory (forgetfulness of recent events, the name of familiar people, etc.), inability to live and play alone activities of daily living (ADL), prominent communication difficulties, ambulation, disorientation in familiar environments, systematic repetition and hallucinations;
3- Late - total dependence and inactivity, apathy and silence, serious memory problems, physical deterioration, difficulty in feeding, non-recognition of relatives or friends or known objects, total disorientation, inability to understand and correctly interpret the situations, difficulties in walking, appearance of urinary incontinence and fecal matter, travel is only possible in a wheel chair or even be settled, total loss of communication between the brain and the body.

It is mainly the changes of functionality (performance in activities of daily living - ADL - which are the set of activities that a person performs daily to live independently and integrated in its environment and to fulfill their social role) which determine the time at which the person with dementia begins to need the help of others (Figueiredo, 2007; Pimentel, 2001).

The caregiver is the person providing care to someone who need them, being a complex activity that include psychological dimensions, ethical, social, clinical, technical and Communitarian aspects (Luders & Scott, 2000). The provision of care involves three main dimensions: responsibility for others; responding to the needs and interests of those who take care (Squire, 2005). The caregiver may be formal (provides care in the context of their professional functions), or informal (provides care on a regular basis, without receiving any economic contribution) (Feldberg et al., 2011; Figueiredo, 2007). Informal caregivers performs tasks such as promoting adequate surveillance of the state of health of the person cared; extend their independence and autonomy; promote a safe environment in order to avoid accidents, and comfortable to provide a proper sleep; the supervision and guidance of the activities performed; encourage communication, socialization, physical activity and the interest of leisure and social activities; help to remember their history and life project; provide other types of care recommended by health professionals; among others (Sequeira, 2007).

In most cases, especially in southern European countries, this care come from the family (Figueiredo, 2007). The role of main caregiver is made naturally by a member of the family, and is in most cases the only source of help for the patient (Fernández-Casaccone & Crespo, 2011). Within the family the role of main caregiver is assumed based on some factors, in particular the degree of kinship and gender (female), physicaland affective proximity. Therefore they are, as a general rule, the spouses to assume that role, followed by the daughters and daughters-in-law (Figueiredo, 2007).

The family plays this role, by social and moral duty, for altruism, by obtaining social approval or avoidance of censorship, by feelings of gratitude and reciprocity in relation to the person cared, or even for material reward (Figueiredo, 2007). The institutionalization is usually the last resort, only when the main caregiver and others (who provides care occasionally, without the responsibility of caring) are no longer able to provide all necessary care or when its provision entails a suffering and a wear so strong that the caregiver feels unable to continue to perform (Pimentel, 2001; 2007). The functions of the caregiver are intrinsically linked to the degree of dependency of the patient, while the responsibilities of this constantly changes through the progression of the disease (Figueiredo, 2007). In an initial phase, care focuses mainly on supervision with vigilance and constant attention. With the progression of the disease, supervision gives place to the replacement of the person in their own activities. The final phase represents a total dependence on the caregiver (Ferreira, 2008).

The assumption of the role of caring brings negative impacts to the life of the caregiver, being one of the most studied the overburden. Defined by George & Gwyther (1986) (cit in Figueiredo, 2007, p. 53) as "the physical, psychological, emotional, social and financial problems that can be experienced by family members who take care". The burden of caregivers presents itself as taking them to reach their limit, with references to the extent of physical and emotional exhaustion on the part of these, as well as feelings of guilt by the difficulty in responding to all the needs of the patient (Garriga, 2007). It also contributes to a lower sense of well-being and an increased health problems (Figueiredo, 2007). Is often associated with the tasks that the person has never before had to play, the ignorance about the manifestations of the disease and the best strategies to cope with the changes, in particular related to the changes and psychopathological behavioral, as well as the growing difficulties of communication, and the style or coping strategies adopted (Sequeira, 2007).

Like other negative consequences, it is often the caregiver who feels the loss of freedom (inability to enjoy leisure time), social isolation (ceases to carry out social and communitarian activities), financial difficulties (greater need of resources), the implications at the level of their mental health (higher risk of development of psychopathological disorders, particularly depression, anxiety, and stress) and physical morbidity (due to excessive physical effort), changes in family relationships (with the dependence there are changes of power within the household, the history of life and the interaction of its components over time will influence more than ever the quality of their interaction), constraints at the level of the labor activity (work and provide care may be two activities almost incompatible, since both require a lot of time and mental availability, although due to financial constraints and lack of social support on the part of state agencies, the caregiver is obliged to keep working in order to support the expenses) (Figueiredo, 2007; Sequeira, 2007).

The provision of care to the patient, presents itself as a source of chronic stress, representing serious consequences both for the health of the caregiver such as for the whole family (García-Calvente, Mateo-Rodríguez, & Maroto-Navarro, 2004). According to Moreira

(2001) (cit in Carvalho & Augustus, 2002, p.108), "The family needs emotional support, and essentially to be heard, making easier the expression of their feelings and of their weariness, while being informed about the care and the reactions of the patient."

According to this, the monitoring of families and caregivers should be part of a multidisciplinary intervention of the disease. Having as its main focus the stress reduction of the caregiver, help families to cope with the burden of care and although it does not allow any changes in the course of the disease, can bring significant benefits to care for the patients and therefore, positive impact on their behavior (Marriott, Donaldson, Tarrier, & Burns, 2000; Bottino et al., 2002).

On this intervention, psychoeducation and information about the diseaseare fundamental, but essentially a reflection about the consequences that this will bring long term (Marriot et al, 2000).

In addition, it is still necessary for the intervention with the caregivers to meet other needs, including: support in domestic tasks (through the use of social responses); assess their need in financial terms and enable state mechanisms which can provide this type of aid; to provide psychosocial support in individual terms and from support groups; allow the caregiver to have moments of rest and perform activities that provide welfare and provide more information and training related to dementia and provision of care (Rodríguez, 2010a; Figueiredo, 2007).

2. METHODS

An exploratory study developed based on data from a sample of 166 caregivers of people with dementia who recruited the CAAV between 2014 and 2017.

They are mostly informal caregivers (137), who at some point provided full-time support to the patient without any outside help, with female demand prevailing with 128 requests for support against 38 male caregivers.

This article has the main objective to make the CAAV known and the work that has been done since 2014, as well as present the profile of caregivers to people in need. In this study will be described all the services that this institution(CAAV) has been developing, to caregivers and people with dementia.

The data needed for this study were collected from the database containing information regarding the Contact Form that is filled individually or for each service requested from some part to the CAAV. On this database, we have the biographical data of each subject, information concerning the clinicalcase of the patient and also information related to the services the Center is providing or provided to each person. These data were analyzed through the use of the software Microsoft Excel ™.

3. RESULTS

As previously mentioned, the CAAV started his activity with a set of targeted services for caregivers, since these are the base references in the lives of the patients and for who is at their side most of the time and constantly available for the patient and is suffering from physical and psychological burden from this condition that sets in around the family system (Figueiredo, 2007; Sequeira, 2007). Caregiver often forget his own life and the need to take care of himself, which can lead to a downward spiral in terms of life quality, well-being and decline of their own physical and mental health (Figueiredo, 2007). Having this is mind, the CAAV offers a set of services, considering the support of caregivers and improving their care practices:

- Psychological Support: service directed to the caregiver and the patient, which aims to provide emotional support, to facilitate the adjustment and acceptance of the disease and emotional regulation, focusing on prevention of depression and anxiety disorders resulting from this process. Regarding the caregiver, there are three moments: diagnosis, evolution of the disease, grieving process. It intends to work aspects as Resilience and Emotional Intelligence, including personal aspects such as: self-esteem, empathy, autonomy, humor, self-control, self-care, among others. These concepts have been mentioned in several studies, as being relevant for caregivers to acquire personal skills to take care of people with dementia (Fernández-Lansac & Crespo, 2011);
- Social, Medical and Legal Support: Forward to other services, such as looking for external care responses; inform the rights and support provided by social policies to the patient and the caregiver; forward to other health professionals, with the purpose of obtaining a diagnosis to clarify other medical questions; and finally, to provide legal services through established protocols with lawyers;
- Technical Support: focuses on Psychoeducation, looking to provide patients more knowledge/information about the disease and to enable the improvement of strategies/best care practices;
- Support Groups: Meeting point, exchange of experiences, expressing feelings, ideas and opinions offered to formal or informal caregivers. Through this interaction (in a secure and confidential environment) participants have the opportunity to reflect on their care practices, looking for strategies to adapt to changes, as well as to overcome difficulties, empowering self-control and self-esteem. Also providing a social environment for caregivers, offering emotional support and promotes self-care, preventing physical and emotional burden;
- Memory Café: informal meeting space, which occurs once a month. Aiming caregivers, people with dementia or with memory problems. In a cosy, quiet and secure environment, promotes sharing of experiences and mutual support between the participants, sharing useful information, encouraging participation with funny and stimulating activities, and giving emotional

support, contributing to the reduction of social isolation and increasing quality of life; this initiative has the support of health or social professionals who guide the lecture or activity sessions.

The CAAV has also interventions for people with dementia or other neurological/neuropsychological problems:

- Neuropsychological Assessment: through the administration of Neuropsychological battery testing, questionnaires and interviews, this allows to define a neuropsychological profile of the person, providing information about the cognitive areas preserved and those that have some kind of commitment, as well as information about the emotional/psychological state. Beside the importance as an instrument of diagnosis to help other health professionals, this is crucial to plan the cognitive stimulation sessions.
- Cognitive Stimulation: This service is intended for patients with dementia or other neuropsychological affectations and takes place in combination with rehabilitation techniques, training, learning, educational and fun activities, in order to develop, improve or maintain the cognitive abilities of the individual looking to improve or preserve his functionality, autonomy and independence, reduce symptoms of neuropsychiatric disorders (anxiety, depressive symptoms, sense of inability, disruptive behaviours), increase self-esteem and positivity towards life, and reduce the disconnection with the environment.

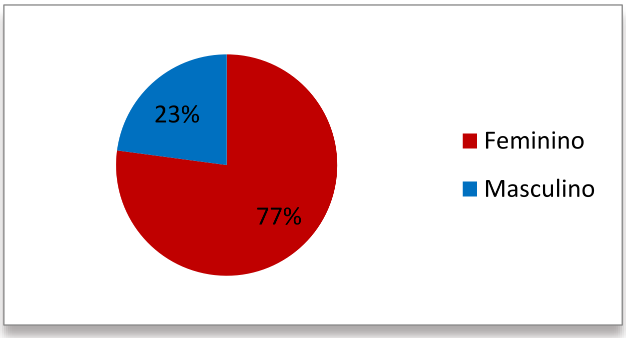
Focusing on prevention, the CAAV also developed the Memory Space, this group sessions, have the purpose to optimize cognitive functions of the elderly with memory changes or mild cognitive impairment. It seeks to enhance occupational and functional performance, improve personal performance, self-esteem and self-confidence, stimulate the reminiscences and promote social participation.

At the same time, since the beginning, in order to developed Awareness and sensitize the community about the problem of dementia, we promote Information and Dissemination Actions, in partnership or collaboration with various entities. This service comprises seminars, conferences, presence at fairs and other events which make it possible to reach more people.

Since 2014, the CAAV has been experiencing a growing demand for its services, having received 166 caregivers and people with dementia to this date, 137 are informal caregivers, who at some moment provided full-time support to the patient without any outside assistance, by nursing homes or formal care.

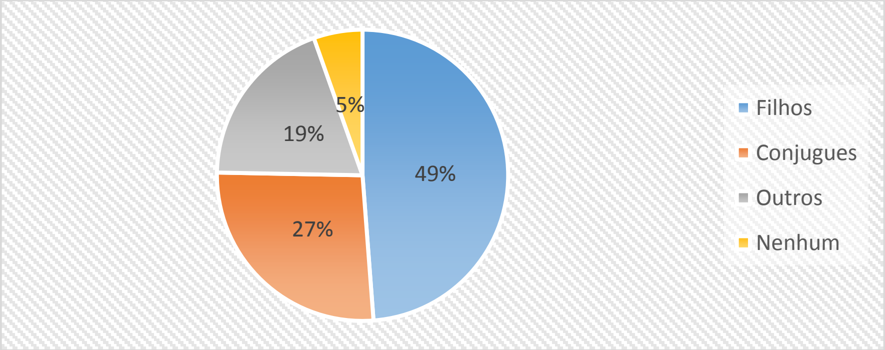
From the 166 caregivers, prevails the female demand, with 128 support requests, against 38 male caregivers (Graphic 1).

Graphic 1: Gender of Caregivers



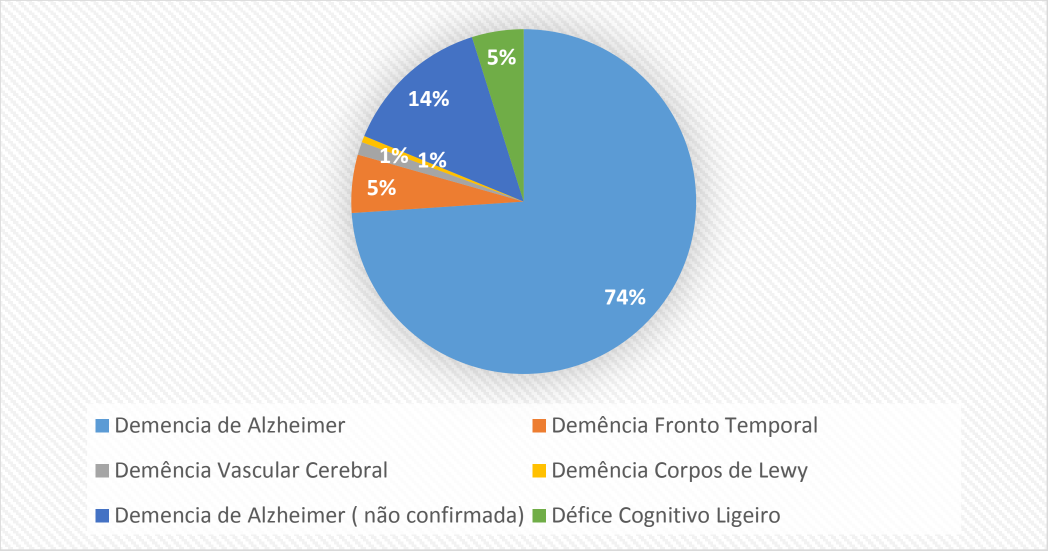
Forty nine percent (81) of the caregivers who looked for the CAAV are children, followed by the spouses which represent twenty seven percent (44 caregivers) as shown in Graphic 2.

Graphic 2: Degree of Kinship of the Caregiver towards the Person with Dementia



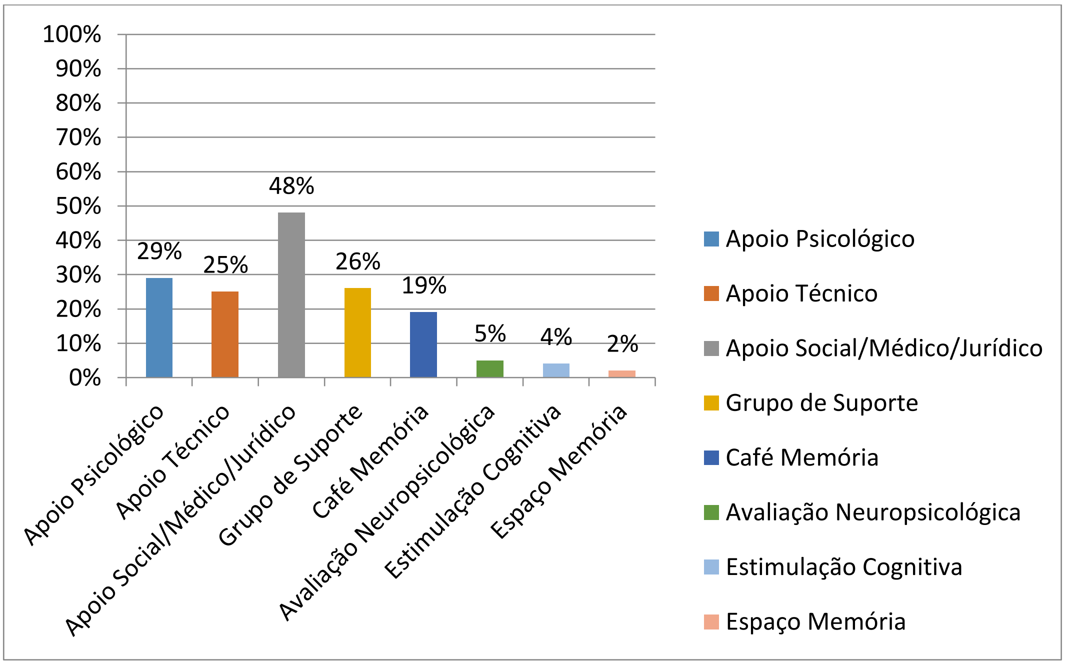
Considering the types of dementia in presence, AD is the most prevalent, representing 78% of dementia cases (122 patients), but this number may be even higher, 14% of the total of cases are referenced as suspicion of AD, without confirmed diagnosis (Graphic 3).

Graphic 3: Types of Dementia Registered



The various services that the CAAV offers have been used in different percentages from who is demanding them, as reflected in Graphic 4.
It is important to note that the vast majority (79 caregivers), comes above all in search of social, medical and legal support, as well as technical support (42 caregivers), requesting later on other services that the Center offers.

Graphic 4: Percentage of Clients Attending the CAAV Services



It stands out the adherence to psychological support (48 caregivers) and the support group (43 caregivers), which allows to understand, in addition to the informational issues and referrals to other services, there is a great need of caregivers for emotional support, a space where they can share their challenges and needs, and speak about strategies that improve the cares, as well as having the feeling that they are not alone facing this situations.

4. DISCUSSION

The data collected about types of dementia referenced above, which were cases followed by the CAAV are accordingly also met by Alzheimer Europe (Pontes, 2016) that demonstrate that the AD is the most prevalent dementia, representing approximately 50% to 70% of all types of dementias in Europe, and also in the whole world (WHO, 2012).

When dementia comes up, it does not only change the individual's life but it has repercussions in the whole family system, either professional or social, forcing an adaptation that in general is difficult for all that are involved (Figueiredo 2007; Sequeira, 2007). Over time in the CAAV this reality has emerged, it's not just the family members most directly involved in care (main informal caregivers) that are seeking for this services, but there is also a demand on part of the extended family, neighbours or friends. It turns out that especially daughters (usually secondary or even tertiary caregivers) who come to the Centre in search for help having the main caregiver in mind (spouse of the person with dementia) referring to the overload in need of psychological/emotional support. As unanimously described (Figueiredo, 2007; Sequeira, 2007), there is a prevalence of female (77%) in the provision of care, which matches with the data from the WHO (2012) that shows that 76% of informal caregivers in Europe are women. In the case of registered male caregivers, the search for external support did not come from the primary caregiver, but of a third person, there is a certain resistance on their behalf to search and receive any kind of support, which relates to the stigma associated with these disorders, as well as cultural and gender issues.

In general, the search comes from the Social/Medical/Legal and Tecnical Support, despite the visible fatigue and emotional weaknesses of caregivers.

The shared information about existing services leads many caregivers to adhere to the available services, namely the Psychological Support and the Support Group, which have proved to be extremely useful for caregivers, finding a space for themselves, where they can share their anguish, doubts and difficulties in search of answers to their needs and desires, helping to decrease social isolation, their sense of overload and symptoms of depressive and anxious problems (Sequeira, 2007).Optimizing its own internal resources, improves not only the well-being and quality of life of the caregiver, but also the person with dementia (Figueiredo, 2007).

Regarding the intervention with people with dementia, we acknowledge today that the most effective for optimization of cognitive functioning and great enhancer of autonomy and independence of individuals is the combination of pharmacological and non-pharmacological interventions (Sequeira, 2007; Taborda & Melo, 2014).We noticed that people with dementia followed by the CAAV, were just on drug therapy (in absence of any other type of intervention),the need arose to implement services of Neuropsychological Assessment and Cognitive Stimulation. Those services have demonstrated a growing interest on the part of caregivers and targeted persons, because there is a growing awareness that may contribute to the maintenance of their cognitive abilities, well-being and quality of life, allowing them to get out of a spiral of withdrawal, hopelessness that does not contribute to the improvement of their condition. In this sense, there are more and more people to join this service.

As in general the population has been aware to the need to prevent situations of dementia and that greater cognitive activity decreases in 47% the risk of suffering from Alzheimer's disease by promoting improvements in the performance of several cognitive functions (Franco-Martín & Orihuela-Villameriel, 2006), emerged the need to create a new service that offers anyone older and with a normal aging a moment of cognitive stimulation. This leads to creation of the latest service, the Memory Space, whose implementation is now being initiated.

CONCLUSION

With the tendency towards ageing of population and the increase of people with dementia, in particular AD, it is becoming urgent to promote

situations to ensure physical, psychological and social health of these patients, as well as their caregivers.

The AD affects not only the patient, but causes adverse changes around the nuclear family, which validates the need for special attention to this group. Assuming that these patients should be on behalf of their families as long as possible, to give continuity to their personal and social identity and to promote the security and stability that only a familiar environment can offer, the informal caregiver represents the central pillar in the promotion of life quality for the patient, therefore, a plan of intervention for people with dementia must always take into special consideration the needs of caregivers, investing on their assistance.

It is in this sense that the CAAV has developed its activity and in this article you can realize that the demand by caregivers (which reflect their needs) are the Social/Medical/Legal Support, Psychological Support, the Support Group and the Technical Support. In terms of profile, caregivers that mainly come to CAAV are women, in general, daughters of patients with AD (majority).

Despite all the efforts made in order to promote the services provided by the CAAV, there is clearly still a long way to go for the awareness of society in general and of professionals for the problems associated with this issue. Based on the Model of Integral Attention Person-Centered (Rodriguez, 2010) it is intended not only to continue current services, as well as in a short or medium term to create new services and answers that enrich this work, meeting the needs and requirements of this population.

Currently we are making efforts for the creation of a Life Quality Center for people with dementia and for starting up specialized training related to dementias for formal, informal caregivers and healthcare professionals.

Furthermore some manual/practical guides on the dementia and associated themes are being designed, and through participation in the project “Nas Freguesias para Lembrar” do CLDS 3G – Viseu Igual, we expect to get closer to the population through the creation of various Support Groups, Cognitive Screening and Awareness Actions focusing on prevention to support the caregiver.

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CENTRO DE ESTUDOS EM
EDUCAÇÃO, TECNOLOGIAS E SAÚDE