



RESEARCH ARTICLE

OPEN ACCESS

NON-COMMUNICABLE CHRONIC DISEASES IN ELDERLY AND ITS ASSOCIATION WITH CLINICAL AND PSYCHIATRIC MORBIDITIES

Magda Almeida Freire¹, Eliany Nazaré Oliveira², Paulo César de Almeida³, Francisco Rosemiro Guimarães Ximenes Neto⁴, Roberta Magda Martins Moreira⁵, Lorena Saraiva Viana⁶, Lycélia da Silva Oliveira⁷, Ivan Gabriel Sousa Feijó⁸, Heliandra Linhares Aragão⁹, Marcela Almeida Freire¹⁰ and Ludmilla Alves Santos¹¹

^{1,2,4}Estate University of Vale do Acaraú (UVA), Sobral - Ceará, Brasil

³Estate University of Ceará (UECE) – Fortaleza, Ceará, Brasil

^{5,6,7,8}Federal University of Ceará (UFC) – Sobral, Ceará, Brasil

^{9,10}Health Secretariat of Sobral, Ceará, Brasil

¹¹Viscount of Savoy School of Public Health (ESPVS) - Sobral, Ceará, Brasil

ARTICLE INFO

Article History:

Received 27th June, 2019

Received in revised form

03rd July, 2019

Accepted 14th August, 2019

Published online 28th September, 2019

Key Words:

Elderly, Depression,
Noncommunicable Chronic Diseases.

ABSTRACT

Objective: To know the scientific production about the association between noncommunicable chronic diseases and clinical and psychiatric morbidities in the elderly. **Method:** Integrative literature review from the Latin American and Caribbean Health Sciences Literature (LILACS), Nursing Database (BDENF), Medical Literature Analysis and Retrieval System Online (PubMed / MEDLINE) and Scientific Electronic Library Online (SCIELO). The descriptors Chronic Diseases and Depression were used. We selected the articles in Portuguese available in full, from 2009 to 2019 that addressed the theme, totaling 10 articles for analysis. **Results:** Women, older people with lower education had lower functional capacity, which directly compromise the independence in the basic and instrumental activities of daily living of these elderly people that, together with clinical and psychiatric multimorbidities, as chronic noncommunicable diseases potentiate the risks for depressive signs and symptoms, high stress levels and negative self-perception of health. **Conclusion:** Therefore, there is a direct association between chronic diseases and the development of depression, making it necessary to carry out care according to the new model of attention to chronic conditions with emphasis on health promotion and quality of life actions of this population group, by the use of light and light-hard technologies.

Copyright © 2019, Eliana Lessa Cordeiro et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Magda Almeida Freire, Eliany Nazaré Oliveira, Paulo César de Almeida, Francisco Rosemiro Guimarães Ximenes Neto, et al. 2019. "Non-communicable chronic diseases in elderly and its association with clinical and psychiatric morbidities", *International Journal of Development Research*, 09, (09), 29837-29842.

INTRODUCTION

Population aging in recent years is unquestionable and has been occurring rapidly. This demographic transition represents according to projections of the World Health Organization (WHO), a population jump of the elderly. According to the Brazilian Institute of Geography and Statistics (IBGE), in 2016, individuals over 65 years old represented 8.1% of the population in Brazil and the estimate for 2030 is that they will represent 13.4% 2 (Brazil, 2017).

*Corresponding author: Magda Almeida Freire,
Estate University of Vale do Acaraú (UVA), Sobral - Ceará, Brasil.

The main consequence of population aging is the increased prevalence of noncommunicable chronic diseases (NCDs), which are the leading causes of disability and mortality worldwide. These diseases account for 70% of deaths worldwide, with 38 million deaths annually. Of these deaths, 16 million occur in children under 70 years old and almost 28 million in low- and middle-income countries. This fact may be associated with the difficulties of access to preventive health and restriction of treatment of these diseases, contributing to a shorter life expectancy (WHO, 2015). In addition to chronic diseases, other aspects should be considered in the health assessment of elderly individuals, such as the presence of multimorbidities (presence of two or more morbidities),

polypharmacy (use of 5 or more medications), dependence on Basic Activities of Daily Living (BADLs) and Instrumental Activities of Daily Living (IADLs), physical activity practice, alcohol and other drug use, falls and hospitalizations (Santos *et al.*, 2013; Sousa-Munoz *et al.*, 2013; Gauterio *et al.*, 2013; Batista, 2014; Marques *et al.*, 2014), in addition to vulnerability. Mental illnesses are among the most prevalent NCDs that degenerate quality of life directly causing disability, with great impact also on family members (Whiteford *et al.*, 2015). Among them, the most prevalent in the elderly is depression, which can be characterized as an affective or mood disorder and when it affects the elderly can lead to loss of autonomy and aggravation of previous comorbidities (Nobrega *et al.*, 2015).

In relation to depression, there is a strong bidirectional association with NCDs, and depression is considered a risk factor for a worse prognosis of chronic diseases, such as diabetes and coronary syndrome, or as a consequence of the disease worsening, such as, for example, the high prevalence. depression after a stroke, which greatly impacts the individual's disability, quality of life and mortality (Lichtman *et al.*, 2014; Ayerbe *et al.*, 2013). The Family Health Strategy is fundamental for the care of people with chronic diseases, as it is in a privileged position to accompany the elderly because it is considered the gateway and acts directly with the community. Territorialization and reception foster the establishment of bond, affection and trust between people and / or families assigned and professionals / teams important for the continuity and resoluteness of health actions (Garuzi *et al.*, 2014). However, the attention to these chronic conditions is still a challenge, considering that the FHS needs to overcome the care centered on the acute conditions and to qualify the attention to the chronic conditions, in a resolute and integral way, enabling the bonding and co-responsibility of users. In this context, this study aims to know the scientific production about the association between non-communicable chronic diseases and clinical and psychiatric morbidities in the elderly.

MATERIALS AND METHODS

The methodological process has a descriptive character, developed through an integrative literature review. Studies of this nature are important to raise the state of the information produced on the subject, the gaps in this production and provide a synthesis of knowledge according to levels of evidence that facilitates the transposition of this evidence into clinical practice. For the elaboration of the study, we followed the process of construction of the integrative review present in the study by Souza *et al.* (2010) that presents six steps that seek the optimization of information collection. Once the theme was defined, the following guiding question was elaborated: What are the outlines of the published works and the studied themes about the association of chronic diseases and depression in the elderly? Outlining is understood as the characteristics of the studies, such as type of study, place of study, type of sample, instruments used and approach, as well as the main findings.

The literature search and the selection of publications were carried out in June and July 2019. Regarding the bases, the publications were collected from the Virtual Health Library (VHL), which gathers scientific journals and journals, such as: Latin American and Caribbean Health Sciences Literature (LILACS), Nursing Database (BDENF), Medical Literature

Analysis and Retrieval System Online (PubMed / MEDLINE) and Scientific Electronic Library Online (SCIELO). It is important to note that such databases are recognized by the wide scientific discussion. The descriptors used for the search were selected from the structured vocabulary Descriptors in Health Sciences (DeCS), in Portuguese: Chronic Diseases and Depression, with the help of the Boolean operator AND. For the selection of the investigations, the following inclusion criteria were adopted: to be available in full, presentation in the Portuguese language, published in the databases mentioned, from 2009 to 2019, and addressing the proposed theme. Those articles repeated in more than one database and not related to the objectives were excluded.

10,661 productions have been found in the last 10 years. Refining the search using the inclusion criteria: "Elderly" limit, "Portuguese" language, "Article" study type, and the period from 2009 to 2019, the query resulted in 33 studies. The title and abstract of the 33 publications were read, considering the inclusion and exclusion criteria defined. After this stage, 10 articles remained that met the search criteria. Then, the full reading of the publications was performed and a form was constructed to give visibility to the main attributes of each production. Thus, the articles were evaluated individually, as well as comparatively, in order to evaluate the trends and design of the studies included in the review. The items analyzed in the form were: year of publication, journals, research region, title, methodology used and main results, facilitating the checking and reducing errors of analysis.

RESULTS

The selected articles were summarized in the instrument for data collection. Initially, a descriptive analysis of the articles was carried out covering the following items: journal in which published, title, year of publication, objectives and main research results. These are present in Table 1. Regarding the year of publication, from a total of 10 articles, it was found that 2 (20%) were published in 2010, 2 (20%) in 2013 and 2014 and 2 (20%) in the year. 2017. The largest concentration of articles occurred in 2018 with 30% and 1 (10%) was published this year, in January. Regarding the region where the productions of this review are concentrated, the Southeast region is presented as a scenario of 7 (70%) studies, followed by the South region with 2 (20%). The Midwest region was cited in only one survey (10%) during the review study. Regarding the methodology used in these studies, 10 (100%) had the quantitative approach, and 7 (70%) cross-sectional studies, of which 7 (70%) used the geriatric depression scale as a data collection instrument. Through the analysis and interpretation of the results, three thematic categories emerged: Association between decreased functional capacity in the elderly with chronic diseases and depression, How sociodemographic factors, chronic diseases and stress contribute to the mental illness of the elderly and light and hard technologies in the treatment of depressive symptoms in the elderly with chronic diseases.

Association of non-communicable chronic diseases in elderly with clinical and psychiatric morbidities: Considering the changes in the Brazilian epidemiological scenario, where there is a relative fall in acute conditions and a relative increase in chronic conditions, Mendes (2012) developed a model of chronic conditions care (MCCC) that could be applied to the Brazilian public health system.

Chart 1. Systematization regarding the journal, title, year of publication, objective and main results of the selected articles.

Periodical	Title	Year	Objectives	Main Results
Public Health Magazine	WHODAS 2.0-BO: normative data for disability assessment in the elderly .	2019	To examine WHODAS 2.0-BO standardization data (instrument that assesses disability for activities and participation in the elderly) and its distribution according to gender, age, subjective health perception, mobility test performance, and the presence of chronic diseases and depression. .	A score of 12 points in the 90 percentile was observed on a scale from zero to 40, which suggests severe disability. The WHODAS 2.0-BO score increased with advancing age, as well as in the presence of comorbidities, poor subjective perception of health, depression, high blood pressure, difficulty seeing and listening, and impaired mobility.
ABCS health sci	Factors associated with negative self-evaluation of health in the elderly enrolled in Basic Health Units.	2018	To verify the association of sociodemographic, health and functionality indicators with negative self-evaluation of health (NSEH) in the elderly.	Negative self-evaluation of health (NSEH) is associated with sociodemographic, health and functionality factors, indicating chronic diseases (especially depression) as the highest odds ratio for a negative self-evaluation of health, while NSEH is considered a risk factor for developing depression.
Brazilian Journal of Geriatrics and Gerontology	Use of digital therapeutic game in elderly in dialysis treatment: cognitive aspects and depressive symptoms	2018	To assess the presence of depressive symptoms and cognitive impairment before and after an intervention program with a therapeutic digital game in elderly on hemodialysis.	Regarding depressive symptoms, the average pre-intervention was 3.9 (\pm 3.0) and post-intervention was 2.8 (\pm 2.9), presenting a statistically significant difference ($p = 0.005$). There was a statistically significant difference in the mean scores of depressive symptoms, being smaller after the intervention.
Kairós magazine	Analysis of the neurogeriatric profile of a group of elderly people belonging to a health plan in the city of São Paulo, Brazil.	2018	Analyze cognitive function and the occurrence of depressive symptoms in a group of elderly people linked to a health plan in the municipality of São Paulo, Brazil.	Almost one third of the sample had symptoms indicative of depression after application of EDG15 and it was observed that 66.2% used polypharmacy, as they had NCCDs, 62.6% SHBP and 19.2% DM.
Brazilian Journal of Geriatrics and Gerontology	Sociodemographic profile, family aspects, health perception, functional capacity and depression in institutionalized elderly in the North Coast of Rio Grande do Sul, Brazil.	2017	To describe sociodemographic, family characteristics, health status, depression and functional capacity degree in institutionalized elderly in 11 long-term care facilities for the elderly, in the North Coast region of Rio Grande do Sul, Brasil.	The vast majority (95%) reported having two to three chronic diseases and daily use of three or more medications. Although 55% had depressive symptoms and morbidity, the elderly presented values compatible with functional independence according to the Barthel index and rated their health as good.
Brazilian Journal of Psychiatry	Noncommunicable chronic diseases and sociodemographic factors associated with symptoms of depression in the elderly	2017	To investigate the association of chronic noncommunicable diseases and sociodemographic factors with symptoms of depression in the elderly.	Approximately 81% reported at least one non-communicable chronic disease. Depressive symptoms were associated with female gender, coronary artery disease, heart failure and stroke. The most important findings related to chronic diseases are the independent associations, in which elderly people who reported coronary disease, stroke and heart failure had a prevalence of depression 1.94, 1.40 and 1.33 times higher..
RENE Magazine	Stress index assessment in elderly residents at home	2014	To evaluate the stress level of the elderly assisted by Primary Health Care in the municipality of Piumhi, in the Midwest of Minas Gerais.	Regarding NCDs, heart problems were present in 81.3% of the elderly. Depression was reported by 29.7% elderly. The elderly generally presented a good physical and mental state. A low stress index was identified in the elderly participants of the research. In the elderly with chronic diseases the stress level was higher.
Journal of the Brazilian Society of Medical Clinics	Evaluation of functional capacity, cognition and depressive symptomatology in elderly attended at a geriatric outpatient clinic.	2013	To evaluate the functional capacity, cognition and depressive symptoms in elderly with multiple comorbidities assisted in a Geriatric Outpatient Clinic.	A high degree of changes in functionality was found, which indicates that elderly people with multiple comorbidities require a broader assessment in order to prevent loss and preserve quality of life. 32% of the sample had depressive symptoms.
Journal of the Nursing School of USP	Effectiveness of Therapeutic Touch on pain, depression and sleep in chronic pain patients: clinical trial	2010	To verify the effectiveness of Therapeutic Touch in decreasing pain intensity, depression self-assessment scores and sleep quality improvement.	Data analysis showed a significant decrease ($p < 0.05$) in pain intensity, depression self-assessment scores and sleep quality index. It was concluded that Therapeutic Touch was effective in decreasing pain intensity, depressive attitudes and symptoms and improving sleep quality.
Science and Collective Health Journal	Functional capacity, socioeconomic and health conditions of the elderly attended by Family Health teams of Goiânia (GO, Brazil)	2010	To evaluate functional capacity and identify factors associated with dependence on daily living activities (DLA) and instrumental of daily living (IDL) and describe the socioeconomic, demographic and health profile of the elderly.	The sample consisted of 388 elderly. 70.9% reported chronic diseases. It was found that 34.8% needed help in one or more DLA and 60.6% in IDL. Factors most frequently associated with this dependence in both activities were impaired balance and mobility, depression, cognitive impairment, and age > 80 years.. These results show that the elderly are experiencing aging characterized by comorbidities and dependence to perform daily activities.

It is understood that from this point and growing, research should be presented focused on attention to chronic conditions in order to improve it. Thus, greater scientific production is needed in this context, considering the minimum number of articles selected in this study. Despite the launch of the National Health Policy for the Elderly in 2006, there was a jump of research related to the theme only in 2017, with a peak in 2018, showing that there is a constant concern about the consequences of the inversion of the age pyramid and that the Unified Health System must be prepared to take care of chronic health conditions. The data found on the distribution of articles by research sites corroborate the research by Ravelli *et al.* (2009), which shows that the South and Southeast regions also lead in research on aging, not necessarily in this order. It soon appears that there is a need for greater research productivity on this subject in other regions of the country. The Geriatric Depression Scale (GDS) was the most used instrument in the studies analyzed, both in the 30-item (1 article) and 15-item (6 articles) versions. Developed by Yesavage *et al.* (1983), is one of the most frequently applied tools because it includes a small variation of responses (yes / no), does not require a mental health professional for its application and can be self-applied or applied by a trained interviewer. Its original 30-item version has been giving way to the short 15-item version because it significantly reduces the time spent on the application and is reliable and valid among the elderly in various situations. The following are the thematic categories resulting from the analysis and interpretation of the results of these articles.

Association between reduction of functional capacity in elderly with chronic diseases and depression: Functional capacity is an indicator of health and well-being in the elderly. It means that the elderly can take care of themselves by planning and carrying out their Basic Activities of Daily Living (ADL), Advanced Activities of Daily Living (AADL) and Instrumental Activities of Daily Living (IADL), necessary and sufficient for a life with autonomy and independence (SILVA *et al.*, 2014). Analyzing three articles that make up this category, it was concluded that women, the older and less educated elderly were the majority in the researches and presented decreased functional capacity. The frequency of depressive symptoms was higher among the elderly with dependence on basic and instrumental activities of daily living. This may be related to the presence of clinical and psychiatric multimorbidities, considering that more than half of the elderly had two or more chronic diseases. For Tavares *et al.* (2016), the association of longevity with NCDs may prevent the elderly from performing their tasks independently, affecting functional capacity. The sum of these factors with poor social conditions and cognitive impairment leads to the onset of depression, which is a serious public health problem because it is among the most common NCDs and increases the likelihood of developing functional disability (Graeff, 2014). Functional impairment is an important risk factor for depression, and depression affects the functionality of the elderly, becoming one of the leading causes of disability due to loss of independence and autonomy (Frank; Rodrigues, 2016; Bretanha *et al.*, 2015). Elderly people without depression have a better perception of successful aging (Jeste *et al.*, 2013). Only one study showed that although most older adults were functionally independent, 53% had moderate levels of depression. Thus, other factors such as chronic pain, decreased social contact, communication difficulties and history of depression could justify such an event (Tiong *et al.*, 2013).

How socio-demographic factors, chronic diseases and stress contribute to mental illness of the elderly: Regarding to sociodemographic data, most studies have observed high prevalence of depressive symptoms in women, in older adults, among those who did not live with a partner, in the least educated, with lower income, who had clinical and psychiatric comorbidities and who had worst self-rated their health conditions. Gender studies that include mental disorders indicate that women are more susceptible to depression due to social, psychological and biological factors such as social isolation, deprivation of family relationships, overload of women's functions, especially for family issues and estrogen deprivation (Gulich; Duro; Cesar, 2016). Moreover, it is recognized that low education and illiteracy seem to be more associated with depressive symptoms corroborating the study by Gonçalves *et al.* (2018) who verified a similar relationship with the occurrence of the outcome, that is, the lower the education level, the greater the probability of occurrence of depression. Stopa *et al.* (2015) report that education and poverty may be a determinant of depression rates, as they are associated with social conditions such as poor quality of life and housing, unemployment, housing and inadequate nutrition. Studies have shown that the presence of chronic diseases among the elderly may be directly associated with a depressive state of these individuals, a fact that impacts on their negative self-rated health. Belem *et al.* (2016), in a household-based cross-sectional study designed to assess factors associated with negative self-rated health in individuals enrolled in Paraíba Family Health Strategies, found a positive association between chronic diseases, depressive feeling, and negative self-rated state of health in individuals enrolled in the Family Health Strategies of Paraíba State found a positive association between chronic diseases, depressive feeling and negative self-rated health in the elderly.

According to Borim *et al.* (2014), the prevalence of chronic diseases in the elderly tends to increase considerably with advancing age reaching approximately 70% of individuals over 70 years of age, and the presence of more than one morbidity negatively impacts the quality of life, life and self-rated health of these individuals. According to Alves and Rodrigues (2010), the elderly who present an association of chronic diseases with negative self-rated health tend to have a higher prevalence of depression, as the coexistence of chronic diseases and depression among the elderly can impact negative self-rated health among the elderly. Another study conducted with 218 institutionalized elderly in Rio Grande do Sul showed that the vast majority of participants reported having at least two to three diseases (the most cited: Systemic Arterial Hypertension, Type II Diabetes mellitus and Osteoarthritis) and a picture of depression in 53.3% of these elderly (Güths *et al.*, 2017). In relation to depression, there is a strong bidirectional association with NCDs, and depression is considered a risk factor for a worse prognosis of chronic diseases, such as diabetes and coronary syndrome, or as a consequence of the disease worsening, such as, for example, the high prevalence of depression after a stroke, which greatly impacts the individual's disability, quality of life and mortality (Lichtman *et al.*, 2014; Ayerbe *et al.*, 2013). Peyrot, Burns and Davies (2013) report that the biggest challenge of medicine in this 21st century is comorbidity, the clinical condition in which two or more diseases occur simultaneously in the same person. He points out that depression is a common comorbidity that accompanies both diabetes 1 and diabetes 2, and both diabetes and depression influence each other in a bidirectional manner,

leading to a decrease in the quality of life of those suffering from both pathologies. This complex relationship has important implications for both chronic disease management and the treatment of depression.

Potentials of the use of light and hard technologies in the treatment of depressive symptoms in elderly chronic diseases:

Currently, it has been widely discussed about the use of technologies in the health field, making it necessary to elucidate the theory through conceptual analysis and attributions in practice. Thus, the concept of technology can be perceived as a process, that is, formation and structure of didactic-pedagogical materials, and, as a product, through the creation of artifacts and new formations (Silva; Ferreira, 2017). Interventions with digital games as a complementary tool for rehabilitation have been a frequent focus of research (Martel; Colussi; Marchi, 2016). A literature review with meta-analysis found that benefits can be obtained from computerized interventions for cognition, depression and anxiety in individuals with dementia (García-Casal *et al.*, 2017). In hospital environments the use of digital games provides pleasure and alleviates anguish, anxiety, sadness and isolation (Neves; Alves; Gonzalez, 2015). The study analyzed was conducted with 26 elderly with chronic kidney disease. Of these, 69.2% had no depressive symptoms, 26.9% mild depressive symptoms and 3.8% severe depressive symptoms. After the application of the digital game "Playing is also good" with the help of life professionals aiming at the treatment of depressive symptoms and cognitive stimulation, there was a decrease in the average score of GDS, where 80.8% had no depressive symptoms, 14, 4% mild depressive symptoms and 3.8% (n = 1) severe depressive symptoms (Bento *et al.*, 2018). These data corroborate the authors mentioned above. Therapeutic touch was also effective in reducing the intensity of chronic pain in the elderly and the self-rated depression scores in the sample studied. This finding is of particular importance, given the scarcity of studies on the effectiveness of Therapeutic Touch in depression. Therefore, understanding that Therapeutic Touch is a low cost treatment approved by the Unified Health System (SUS), standardized by the guidelines of the National Policy of Integrative and Complementary Practices (Caires, *et al.*, 2014), it is believed that Positive results from this treatment improve the quality of life of chronic disease patients.

Final considerations

This review reiterates the importance of more effectively programming care for the new model of care for chronic conditions, considering that the association of chronic diseases with the development of depression was evident. Sociodemographic factors, decreased functional capacity, high stress levels and negative self-perception of health significantly contributed to the increase of depressive signs and symptoms in the elderly, making the development of health promotion actions to improve the quality of life for this population group. The literature showed positive points associated with the application of light and hard technologies, such as digital games and therapeutic touch, reducing depression scores and relieving symptoms related to chronic diseases. Considering the existing knowledge gap in the scientific literature, it is suggested to broaden and deepen the research that includes the elderly and analyze the association of chronic diseases and depression, so that knowledge production can contribute to public policy formulations. health

care aimed at preventing diseases, enhancing the quality of life of the elderly, ensuring that people over sixty can achieve longevity with health, vitality and above all aware of their role in contributing to the success of active aging. The limitations found to conduct this study permeate the fact that few articles related to the theme were found for not considering languages other than Portuguese. However, it allowed an analysis of the scientific production on the association of chronic non communicable diseases with depression and proposes to deepen the theme in further studies, as well as coping strategies for depressive symptoms.

REFERENCES

- Alves LC., Rodrigues RN. 2005. Determinantes da auto percepção de saúde Ayerbe *Let al.* 2013. Natural history, predictors and outcomes of depression after stroke: systematic review and meta-analysis. *Br J Psychiatry.* 202 (1):14-21.
- Bardin L. 1997. Análise de conteúdo. Edições 70ª. Lisboa.
- Batista SR. 2014. A complexidade da multimorbidade. *J ManagPrim Health Care*, 5 (1): 125-126.
- Belém PLO *et al.* 2016. Autoavaliação do estado de saúde e fatores associados em idosos cadastrados na Estratégia Saúde da Família de Campina Grande, Paraíba. *Rev. Bras. Geriatr. Gerontol*, 19 (2): 265-276.
- Bento SRet *al.* Uso de jogo digital terapêutico em idosos em tratamento dialítico: aspectos cognitivos e sintomas depressivos. *Rev. Bras. Geriatr. Gerontol.* Rio de Janeiro, 21 (4): 447-455.
- Borin FSAet *al.* 2014. Dimensões da autoavaliação de saúde em idosos. *Rev Saúde Pública*,48(5): 714-722.
- Brasil. 2017. Projeção da população do Brasil e das unidades da Federação. Rio de Janeiro: IBGE.
- Bretanha AF *et al.* 2015. Sintomas depressivos em idosos residentes em áreas de abrangência das Unidades Básicas de Saúde da zona urbana de Bagé, RS. *Rev. Bras. Epidemiol.*, 18: 1-12.
- Caires JSet *al.* 2014. A Utilização das Terapias Complementares nos Cuidados Paliativos: Benefícios e Finalidades. *Cogitare Enfermagem*, 19 (3): 514-520.
- Dapp.Uet *al.* 2014. Long-term prediction of changes in health status, frailty, nursing care and mortality in community-dwelling senior citizens: results from the longitudinal urban cohort ageing study. *BMC. Geriatr.*, 14:141.
- entre idosos do Município de São Paulo, Brasil. *Rev. Panamericana de Salud Pública*, 17: 333-341.
- Fernandes MGM, Nascimento NFS, Costa KNFM. (2010). Prevalência e determinantes de sintomas depressivos em idosos atendidos na atenção primária de saúde. *Rev. Rene. Fortaleza*,11(1): 19-27.
- Frank MH., Rodrigues NL. 2016. Depressão, ansiedade, outros distúrbios afetivos e suicídio. In: Freitas, E. V, &Py, L. (Orgs.). *Tratado de Geriatria e Gerontologia*, 391-403. (4ª ed.). Rio de Janeiro, RJ: Koogan.
- García-Casal JA *et al.* 2017. Computer-based cognitive interventions for people living with dementia: a systematic literature review and meta-analysis. *Ageing & mental health*, 21(5): 454-467.
- Garre-Olmo J *et al.* 2013. Prevalence of frailty phenotypes and risk of mortality in a community-dwelling elderly cohort. *Age Ageing*, 42 (1): 46-51.
- Garuzi M, Achitti O, Sato CA, RochaAS, Spagnuolo RS. 2014. Acolhimento na Estratégia Saúde da Família: revisão integrativa. *Rev. Panam. Salud Públ.*, 35: 144-149.

- Gauterio DP *et al.* 2013. Uso de medicamentos por pessoas idosas na comunidade: proposta de ação de enfermagem. *Rev. Bras. Enferm.*, Brasília, 66(5).
- Goncalves AMC *et al.* 2018. Prevalência de depressão e fatores associados em mulheres atendidas pela Estratégia de Saúde da Família. *J. Bras. Psiquiatr.*, Rio de Janeiro, 67(2): 101-109.
- Graeff B. 2014. The relevance of the notion of urban ambiances to the theme of the rights of the elderly: Brazilian perspectives. *Rev. Bras. Geriatrgerontol*, 17(3): 611-625.
- Gulich I, Duro SMS, Cesar JA. 2016. Depressão entre idosos: um estudo de base populacional no Sul do Brasil. *Rev. Bras. Epidemiol.*, 19: 691-701.
- Güths JFS *et al.* 2017. Perfil sociodemográfico, aspectos familiares, percepção de saúde, capacidade funcional e depressão em idosos institucionalizados no Litoral Norte do Rio Grande do Sul, Brasil. *Rev. Brasileira de Geriatria e Gerontologia*, 20(2): 175-185.
- Jeste DV *et al.* 2013. Association Between Older Age and More Successful Aging: Critical Role of Resilience and Depression. *Am J Psychiatry*, 170 (2): 188-196.
- Lichtman JH *et al.* 2014. Depression as a risk factor for poor prognosis among patients with acute coronary syndrome: systematic review and recommendations: a scientific statement from the American Heart Association. *Circulation*, 129(12): 1350-1369.
- Marques AP *et al.* 2014. Internação de idosos por condições sensíveis à atenção primária à saúde. *Rev Saúde Pública*, 48(5): 817-826.
- MartelMRF, ColussiEL, Marchi A BD. 2016. Effects of a video game-based intervention on the attention and functional independence of older adults after cerebrovascular accident. *Fisioterapia e Pesquisa*, 23 (1): 52-58.
- Mendes EV. 2012. O cuidado das condições crônicas na atenção primária à saúde: o imperativo da consolidação da estratégia da saúde da família. Brasília: Organização Pan-Americana da Saúde.
- Neves I, Alves L, Gonzalez C. 2016. Jogos digitais nas classes hospitalares: desbravando novas interfaces.
- Nobrega IRAP *et al.* 2015. Fatores associados à depressão em idosos institucionalizados: revisão integrativa. *Rev. Saúde em Debate*, 39: 536-550.
- Nogueira EL *et al.* 2014. Screening for depressive symptoms in older adults in the Family Health Strategy, Porto Alegre, Brazil. *Rev.Saude. Pública*, 48: 368-377.
- Ravelli *et al.* 2009. A produção do conhecimento em enfermagem e envelhecimento: estudo bibliométrico. *Texto Contexto Enferm.*, 18(3): 506-12.
- Santos AS *et al.* 2013. Atividade Física, Álcool e Tabaco entre idosos. REFACS (online), 2(1): 6-12.
- Silva PCS *et al.* 2014. Assessment of depression in elderly with systemic hypertension. *Rev. da Rede de Enfermagem do Nordeste*, 15 (1).
- Silva RC, Ferreira MA. 2014. Tecnologia no cuidado de enfermagem: uma análise a partir do marco conceitual da Enfermagem Fundamental. *Rev. Bras. Enferm.*, 67(1): 111-118.
- Sousa-Muñoz RL. *et al.* 2013. Impacto de multimorbidade sobre mortalidade em idosos: estudo de coorte pós-hospitalização. *Revista Brasileira de Geriatria e Gerontologia*, 16 (3): 579-589.
- Stopa, SR *et al.* 2015. Prevalência do autorrelato de depressão no Brasil: resultados da Pesquisa Nacional de Saúde. *Rev. Bras. Epidemiol.*, São Paulo, 18 (supl. 2): 170-180.
- Tavares DMS. *et al.* 2016. Functional disability and associated factors in urban elderly: a population-based study. *Rev. Bras. Cine. Antropom. Desempenho. Hum.*, 18 (5): 499-508.
- Tiongs WW. *et al.* 2013. Prevalence and risk factors of depression in the elderly nursing home residents in Singapore. *Aging Ment Health*, 17 (6): 724-731.
- Whiteford HA. *et al.* 2015. The global burden of mental, neurological and substance use disorders: an analysis from the global burden of disease study 2010. *PlosOne*, 10 (2).
- World health organization (WHO). 2015. No communicable diseases prematurely take 16 million lives annually, WHO urges more action.
- Yesavage JA *et al.* 1982. Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res.*, 17 (1): 37-49.
