



Late-Life Depression: Portuguese Research Trends over the last Decade (2007-2017)

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Abstract

Background: Depression is the second major mental health concern in older people and it is generally accepted that it highly contributes to diminished wellbeing and worse general health. Population aging has raised the need to enlarge depression research in older adults so that it may be properly prevented, diagnosed and treated. In Portugal, the extent of research conducted on geriatric depression is unknown.

Goals: This study aims to explore the scope of depression research with elderly population in Portugal, and to provide insights on the prevailing research topics that have been considered, highlighting possible trends and research gaps.

Methods: A scope review was conducted. Research papers having “older people” (or similar words) AND “Portugal” AND “Depression” in their title, abstract or keywords were screened across main international scientific databases (SCOPUS, Web of Science, PsycINFO and PUBMED) for a ten-year period [2007-2017].

Results: A total of 50 papers were selected and analysed. Six main categories were distinguished: depression, health status and social conditions; late life depression and its characteristics; assessment of late life depression; intervention outputs; attitudes towards depression and help seeking behaviors; and sociodemographic characteristics of people with depression.

Discussion: The considerable expressiveness of geriatric depression in our country and the lack of attention it is given as a primary research topic (rather than as an associated variable to other conditions) suggest the need for a greater investment by Portuguese researchers in order to improve accurate diagnosis and adequate psychological interventions.

Keywords: Depression; Systematic review; Geriatric; Older adults; Portugal.

Introduction

Depression is a common and disabling psychiatric condition. Recent global health estimates presented by the World Health Organization (WHO, 2017) point that the proportion of the global population with depression in 2015 is likely to be 4.4% (more common among females than males, 5.1% and 3.6% respectively), and that depression is ranked as the

single largest contributor to global disability (7.5% of all years lived with disability – YLDs - in 2015), being also the major contributor to suicide deaths (WHO, 2017). The Global Burden of Disease in 2010 showed that mood disorders were the second leading cause of YLDs, accounting for 8.2% of global years lived with disability (Ferrari et al., 2013).

According to the World Federation for Mental Health (WFMH, 2010) that compiled evidence from the

association of depression with the most common diseases, about 15% of patients with cardiovascular disease and 20% of those that had undergone coronary bypass graft surgery experience major depression; and the continued presence of depression after recovery increased the risk of death to 17% within 6 months after a heart attack (vs. 3% of patients who did not have depression). The same report showed that depression increases 30% the risk of mortality in people with diabetes, and that mortality in cancer patients is 25% higher for those feeling depressed and 39% higher in those who received a diagnosis of depression. Similar data could be presented for patients with respiratory diseases and depression, and obesity and depression, showing clearly the relevance that should be paid to this mental disorder.

Late-life depression, also termed geriatric depression, is traditionally defined as depression occurring in individuals older than 64 years, although other age cutoffs have been considered, such as 60 and even 55 years (Selbaek & Borza, 2015). It can be part of a previously established mood disorder or arise for the first time in late life, and constitutes a debilitating health problem. Compared to the younger group of older adults, depression seems to be more common among the oldest old (85+), though the association between depression and increasing age may disappear when adjusting for physical disease and increased disability in older age (Selbaek & Borza, 2015). Higher prevalence rates are found among individuals living in nursing homes, and in individuals with somatic disease, particularly brain disorders. Late onset depression is often linked to cognitive impairment and may presage the appearance of Alzheimer's disease or vascular dementia, being also commonly comorbid with other physical and mental disorders (Fiske & Jones, 2005).

In later life, both major depression and sub-threshold depression (i.e., presence of symptoms that do not meet diagnostic criteria, sometimes referred to as subsyndromal depression) are often linked to poor health, and substantially add to the morbidity of many severe medical disorders (Baldwin, 2010).

As age can substantially influence the presentation of depression, namely its symptomatology (e.g. minimized complaint of depression, somatic grievance), depression in older adults can often go unrecognized and thus undertreated. In fact, the diagnosis of geriatric depression is a major challenge due to the physical symptoms that can exist independently of depression (Hegerman, Kok, van der Mast, & Giltay, 2012), and due to the ageism stereotype that can lead relatives, professionals, and old people themselves to devalue depressive signs and symptoms, perceiving them as a "normal status" mixed up with aging and its common losses (Karel, Ogland-Hand, Gatz, & Unutzer, 2002). Moreover, reasons for oversight late-life depression can also relate to the actual complexity of diagnosing mood disorders in some medically or neurologically ill elders. Given its potential devastating effects (e.g. hospitalization and suicide), depression is considered a relevant public health concern, and a challenge for those professionals who work directly with older adults in more vulnerable conditions.

In Portugal, according to the 2011 population census, the percentage of people aged 65 and over is 19.1% (2 022 504 individuals) (Instituto Nacional de Estatística (INE), 2012). Recent data from a national report on mental health stressed out the relevance of major depression in our country as it was among the leading pathologies that contribute the most to incapacity for productive activities and overall psychosocial functioning (Direção-Geral da Saúde (DGS), 2013); the same report stressed out the need for early detecting and treating late-life depression, as it is highly linked to suicide. Notwithstanding the available data suggesting the existence of relevant levels of psychiatric morbidity and unmet needs for care throughout the country, there is lack of updated and detailed figures about the prevalence of psychiatric disorders in Portugal (Xavier, Baptista, Mendes, Magalhães, & Caldas-de-Almeida, 2013). Specifically for geriatric depression, although there is a considerable body of evidence on depression at an international level (Byrne & Pachana, 2010), the extent of Portuguese data, either on prevalence and incidence, comorbid physical diseases, or associated

factors, is unwell recognized though there are recent efforts in obtaining epidemiological data regarding community dwelling elderly people (Gonçalves-Pereira et al., 2016). The first report of the National Epidemiological Study of Mental Health that is part of the World Mental Health Survey Initiative shows that the prevalence major depression in people aged 65 and over in Portugal is 12% (Caldas de Almeida et al., 2014).

The aim of this study is to explore the extent of depression research among elderly population in Portugal; it intends, by means of a scoping review, to provide insights on the prevailing research topics within geriatric depression that have been considered by Portuguese researchers, and highlight possible trends and research gaps.

Methods

This scope review was conducted using the methodological framework of Arksey and O'Malley (2005). A search of the electronic databases SCOPUS, Web of Science, PsycINFO and PUBMED was conducted. After November 2nd of 2017 no more papers were added to the analysis. The terms "Depression" AND "Older people OR Elderly OR Older adults" AND "Portugal" were searched in the title, abstract and keywords across the databases; "Portugal" was also indicated as affiliation country in order to ensure the focus on specifically Portuguese researchers/studies. The search was repeated with Portuguese terms "Depressão" AND "Idoso OR Idosos OR Idosa" AND "Portugal". Only papers published in the last 10 years (2007-2017) and written in English or Portuguese were considered. For selecting the studies, titles, keywords, abstracts, and, in some cases, the full papers were read. The first author searched the papers in the databases, and decisions on their selection were made together with the second and third co-authors. Disagreements were handled case-by-case through group discussions and overall consensus was reached in all cases, both within the selection and analysis phases. After papers duplication was removed, a total of 65 papers were identified (see Figure 1).

The following exclusion criteria were applied: papers that had considered samples of individuals younger than 50 years old to an extent of more than 50% of the sample ($n=6$), papers that had not considered older population (65+ years old; $n=3$), or papers that were not about depression ($n=4$). In the cases where the percentage of participants older than 50 years old was not clear, the authors of the papers were contacted.

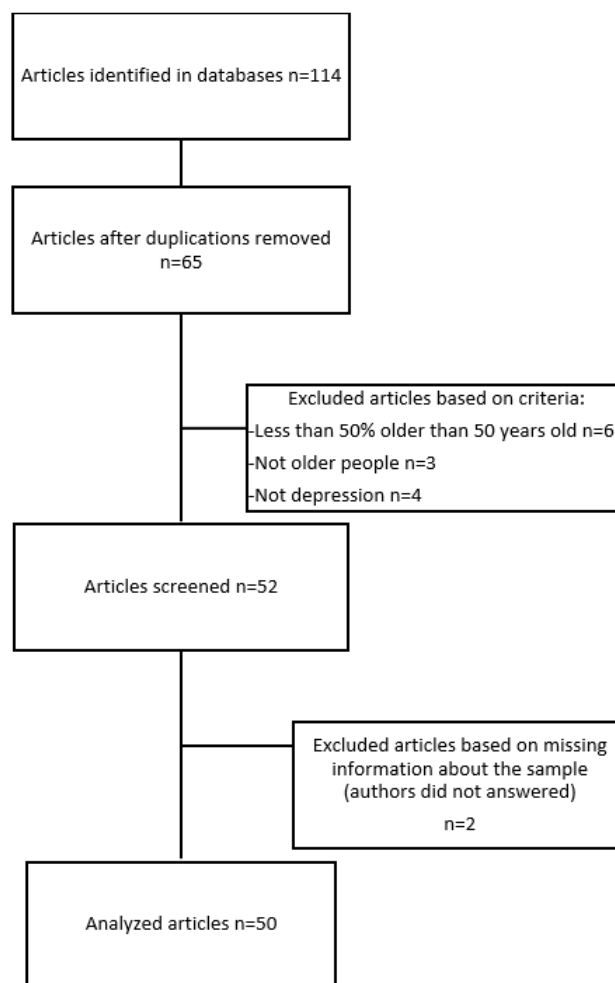


Figure 1. Search and selection of papers included in the review

Two papers were excluded because of insufficient information about the research samples, with authors' absence of reply. Few exceptions of inclusion criteria were applied due to its relevance to the review outcome: one paper in which the total sample of participants older than 50 years old was less than 50% but the results of older and young participants were analyzed and presented separately (Monteiro, Canavarro, & Pereira, 2016); and one paper analyzing public attitudes towards depression and help-seeking

behavior whose sample of older participants was not sufficient for inclusion criteria (Coppens et al., 2013). This last paper was included as it was ought to provide valuable insights on the Portuguese society regarding this matter, which is important for the integral image of late-life depression research trends and implications at a societal level. No more exceptions were made.

Results

Descriptive information about each paper's publication year, sample size and participants' age range, as well as study design and instruments used for data collection are presented in Table 1.

Table 1. Study design/type, sample size, age and instruments of included papers

Ref. Nr.	Year	Study design/type and sample	Sample size	Age	Instruments
Monteiro et al.	2016	Cross-sectional	N = 1194	50-81. Mean age: 40.74	BDI
Coppens et al.	2013	Cross-sectional	N = 4011 N = 1009 for Portugal ^a	18-69+. Mean age: 47.80	DSS
Laires et al.	2017	Cross-sectional	N = 197	50+. Mean age: 67.00	Diagnose
Gonçalves et al.	2016	Cross-sectional	N = 504	60-100. Mean age: 70.90	GDS15
Gomes et al.	2017	Cross-sectional	N = 19298 ^a	55+. Mean age: 67.80	EURO-D
Laureano et al.	2014	Cross-sectional	N = 229	65-95. Mean age: ≈74.00	Scale (POMS-SF)
Araújo et al.	2016	Cross-sectional	N = 97	65-101. Mean age: 82.20	CES-D
Noronha et al.	2015	Cross-sectional	N = 84	65-101. Mean age: 82.10	CES-D
Correia & Ravasco	2014	Cross-sectional	N = 127	18-81 >50 (53%)	Diagnose
Nogueira & Reis	2013	Cross-sectional	N = 272	Mean age: 82.00	GDS15
Passos et al.	2017	Cross-sectional	N = 306	65-89. Mean age: 74.01	GDS15
Gil et al.	2015	Cross-sectional	N = 510	60-80+. Mean age: 70.70	GDS5
Melchiorre et al.	2013	Cross-sectional	N = 4467 ^a	60-84.	HADS
Soares et al.	2014	Cross-sectional	N = 4467 ^a	60-84.	HADS
Martin, de Oliveira & Duarte	2013	Cross-sectional	N = 48	Mean age: 78.80	GDS4 EASYcare; CES-D ^b
Eiras et al.	2016	Cross-sectional	N = 747	65-84+.	Diagnose
Rosa et al.	2017	Cross-sectional	N = 586	50-90. Mean age: 67.60	GDS15
Nunes et al.	2010	Cross-sectional	N = 1146	55-79. Mean age: 54.20 (rural) ; 50.20 (urban)	GDS4
Ginó et al.	2010	Cross-sectional	N = 946	18-92. Mean age: 54.20	GDS, CERAD
Carreiro-Martins et al.	2016	Cross-sectional	N = 887	65+. Mean age: 84.00	GDS15
Ponte, Almeida & Fernandes	2014	Cross-sectional	N = 75	65-88. Mean age: 72.80	GDS30
Bajin et al.	2014	Broad theoretical review with vignette ^a	(b)	(b)	(b)
Prazeres & Santiago	2015	Cross-sectional (cluster analysis)	N = 2027	18-65+. Mean age: 56.30	Diagnose

^a Data are not only for Portugal

^b Not reported in the paper

Table 1. Study design/type, sample size, age and instruments of included papers (Continued)

Ref. Nr.	Year	Study design/type and sample	Sample size	Age	Instruments
Simões et al	2017	Cross-sectional (cluster analysis)	N = 23752	18-80+. >50 (54.4%)	Diagnose
Sousa, Pereira & Costa	2015	Cross-sectional	N = 620	55-96. Mean age: 74.04	GDS30
Santos et al.	2014	Cross-sectional	N = 1051	50-97. Mean age: 67.20	GDS30
Bastos et al.	2015	Cross-sectional	N = 162	65-85+. Mean age: 74.60	GDS15
Gonçalves et al.	2015	Cross-sectional	N = 164	16-94. Mean age: 71.00	Diagnose
Leal et al.	2014	Cross-sectional	N = 553 (N = 342 for Portugal) ^a	60-90+. Mean age: 82.22	GDS15
Almeida & Quintão	2012	Cross-sectional (prevalence)	N = 155	64+.	GDS15
Gustafson et al	2013	Broad theoretical review with vignette ^a	(b)	(b)	(b)
Julião, Nunes & Barbosa	2016	Cross-sectional (validation)	N = 80	28-90. Mean age: 66.10	HADS; The Structured Clinical Interview for the DSM-IV
Simões	2012	Theoretical review (instruments)	(b)	(b)	(b)
Gonçalves-Pereira et al.	2016	Cross-sectional (methodology)	N = 1481	65-85+.	GMS-AGECAT
Julião et al.	2016	Cross-sectional (instrument properties)	N = 100	36-95. Mean age: 66.10	HADS; Single question "Está deprimido?" ("Are you depressed?")
Vilar et al.	2016	Cross-sectional (validation)	N = 921	60+. Mean age: 74.05	GDS30
Bárrios et al.	2013	Cross-sectional (validation)	N = 126	50+. Mean age: 77.30	GDS15
Araújo et al.	2015	Cross-sectional (validation)	N = 207	Mean age 77.20	GDS15
Pinto-Gouveia et al.	2015	Cross-sectional (validation)	N = 769	50-81. Mean age: ≈63.00	BDI; DASS-21
Carvalho et al.	2014	Cross-sectional (validation)	N = 708	50-83. Mean age: 63.38	BDI; DASS-21
Figueiredo & Santos	2017	Cross-sectional (validation)	N = 100	60+. Mean age: 74.27	HADS
Ferreira et al.	2015	Cross-sectional (validation)	N = 166	50+. Mean age: 80.90	GDS30
Freitas et al.	2012	Cross-sectional (instrument properties)	N = 650	25-91. Mean age: 55.84	GDS30
Ribeiro et al.	2011	Cross-sectional (validation)	N = 217	59-92. Mean age: 73.90	GDS30
Fernandes et al.	2009	Cross-sectional (validation)	N = 79	62-95. Mean age: 74.00	GDS15
Alves-Apóstolo et al.	2016	Intervention	N = 45	63-92. Mean age: 75.29	GDS15
Branco et al.	2015	Intervention	N = 26	60+. Mean age: 65.50	GDS30

^a Data are not only for Portugal^b Not reported in the paper

Table 1. Study design/type, sample size, age and instruments of included papers (Continued)

Ref. Nr.	Year	Study design/type and sample	Sample size	Age	Instruments
Julião et al.	2014	Intervention	N = 80	28-90. Mean age: 66.10	HADS
Gamito et al.	2010	Intervention	N = 10	Mean age 63.50	BDI
Afonso & Bueno	2009	Intervention	N = 90	65-94. Mean age: 76.00	CES-D

The selected papers were published between 2009 and 2017 (no papers were selected for the period between 2007 and 2008); most papers are from 2014-2016. The majority (n=42) are cross-sectional studies; five focused on interventions, and three constitute theoretical reviews. The sample size of research studies varied from 10 to 90 individuals in intervention studies, and from 48 to 23752 in cross-sectional studies. The mean age of the samples varied between 40.74 and 84 years old. In seven papers, Portuguese data were analyzed together with different countries.

Information about depression was gathered from different sources such as medical records via electronic databases, psychological measurements, or directly from professional staff. The most commonly used instrument for assessing symptoms of depression was the Geriatric Depression Scale (shorter version - GDS15, and full version - GDS30), used in 13 and 8 papers, respectively. The Hospital Anxiety and Depression Scale (HADS) was used in 6 papers. Other instruments include the Beck Depression Inventory (BDI), the Epidemiologic Studies Depression Scale (CES-D), and the Depression, Anxiety and Stress Scales (DASS-21). One of the studies (Monteiro et al., 2016) used the Depression Stigma Scale (DSS) not as a depression indicator but for the measurement of attitudes towards depression and health seeking behaviors. Study participants were most often community-dwelling and/or recruited in health care centers; only a few studies included older adults who were living in institutions (nursing homes).

Most papers reported studies conducted by teams of multiple researchers from the fields of epidemiology and health sciences, as well as psychology or social sciences. The dominant background of the researchers seemed to influence the constructs that

were being researched: when psychological aspects were the minor focus, the researchers were mainly from health sciences.

In overall, the papers had distinct objectives: from looking at the association between depression with other variables that were often set out as primary research topics (e.g., physical status, nutrition), exploring potential explanatory features of late-life depression (e.g. cognition), its symptoms (e.g. suicidality) and prevalence in several settings (e.g. nursing homes), to report about outcomes of interventions (e.g. dignity therapy) among others. These results can be organized in six major categories: (i) depression, health status and social conditions; (ii) late life depression and its characteristics; (iii) a focus on assessment; (iv) intervention outputs; (v) attitudes towards depression and help seeking behaviors; (vi) sociodemographic characteristics of people with depression.

Depression, health status and social conditions

A group of 23 papers analyzed the association of depression with other health or social-conditions indicators. Some of those papers analyzed correlation between depression and pain (Gonçalves Silva, Queirós, & Pacheco Rocha, 2016; Laires et al., 2017), physical inactivity (Gomes et al., 2017), functional fitness (Laureano et al., 2014), nutritional status (Araújo et al., 2016; Noronha et al., 2015), weight changes (Correia & Ravasco, 2014), swallowing disorders (Nogueira & Reis, 2013), and global needs of older adults with mental health problems (Passos et al., 2017). A significant correlation was found with all the variables although the strength varied. Other papers analyzed the correlation of depression with variables such as family violence (Gil et al., 2015), social support (Melchiorre et al., 2013), abuse (Soares

et al., 2014), in-home care services (Martin, de Oliveira, & Duarte, 2013), drug consumption and inappropriate medication prescription (Eiras et al., 2016). A significant correlation was found with all the variables except for in-home care services; depression was not associated with type of services of in-home care, the duration of the services (i.e., how long the services were provided in months) and the average hours per week spent on in-home care services. Dementia (Rosa et al., 2017), cognitive impairment without dementia (Nunes et al., 2010), subjective memory complaints (Ginó et al., 2010), and quality of life (in older adults with chronic respiratory diseases (Carreiro-Martins, 2016), with HIV (Monteiro et al., 2016), or with suicidal ideation (Ponte, Almeida, & Fernandes, 2014)) were also found as significantly associated with depression.

One paper presented a theoretical review about hearing loss in old age, including its association with depression (Bajin et al., 2014). Two papers presented cluster analysis: prevalence of multimorbidity in older adult population (Prazeres & Santiago, 2015) and multimorbidity patterns from chronic noncommunicable diseases (Simões et al., 2017). In overall, findings point out that older people had higher likelihood of having multimorbidity, which was operationalized as having two or more chronic health problems. Mental problems were the most common problems, together with cardiometabolic disorders, and formed the anxiety-depression cluster, from six identified cluster categories (Prazeres & Santiago, 2015). The second analysis distinguished four clusters. It was found that depression co-occurred together with rheumatic and musculoskeletal diseases (RMDs) and osteoporosis, forming a separate cluster (Simões et al., 2017).

Late-life depression and its characteristics

A second group of studies consisted of papers that took an in-depth approach in the analysis of late-life depression characteristics (n=8). Three papers presented prediction of depression prevalence by other variables: subjective memory complaints and MMSE scores were found to explain almost 63.4% of depression variance (Sousa, Pereira, & Costa, 2015), gender and school years directly predicted 16% of depression variance (Santos et al., 2014), while marital

status predicted 14% of the variance, and marital status together with social resources explained 18% of depression variance (Bastos et al., 2015).

Another three papers analyzed the prevalence of symptoms of depression and its associated factors in different groups: within a sample of patients in palliative care, in which 65% had depression/sadness symptoms, being the second main symptoms after fatigue (Gonçalves et al., 2015); among Portuguese and Brazilian residents in long-stay institutions, being that the first ones presented a higher prevalence of depressive symptoms (61.4%) when compared to the second ones (49.76%) (Leal et al., 2014); and among older adults living in nursing homes who did not present higher risk of depression when compared with older adults living in the community (Almeida & Quintão, 2012). In this last paper, the respondents from Alentejo had higher depression scores than the ones living in Lisbon, with respondents from Algarve presenting the lowest depression scores; a positive correlation was found between depression and suicidal thoughts, self-perceived health and loneliness, and negative correlation with autonomy.

One paper presented a theoretical review about the epidemiology, screening, diagnosis and management of depression in old age in four European countries; it also provided a clinical vignette of an old depressed person and actions that would be taken in different countries (Gustafson, 2013). In the specific case of Portugal, the paper highlights the scarceness of epidemiological data about geriatric depression (presenting findings from a community-based study from the 80's, data from the 2001 Portuguese Psychiatric Census revealing a prevalence of 14.9% for the general population, and a study from 2010 based on a primary care setting that presented a surprising 42% prevalence), the way depression is usually diagnosed (essentially by means of specific clinical criteria described on international classifications, as in the DSM-IV and in the ICD-10), and the lack of available data concerning the use of specific antidepressants. Authors also underline that the diagnosis of depression is usually made by primary care physicians, who also prescribe the initial psychopharmacological treatment, and that although

such treatment has been slightly improved over the last years, due to educational programs for enhancing basic psychiatric skills, early recognition of depressive symptoms in later life is still a major issue.

Lastly, one study focused on the demoralization syndrome (Julião, Nunes, & Barbosa, 2016), and exposed not being clear if depression and the demoralization syndrome are two distinct psychological features.

A focus on assessment

Within this category, a set of three papers presented different depression instruments: one (Simões, 2012) provided a review of validated instruments that are used with older adults in the Portuguese context (including the GDS versions of 30, 20, 15, 10, 4 and 1 item, as well as the CES-D); another article (Gonçalves-Pereira, 2016) describes the assessment protocol and survey methodology of the 10/66-Demetina Research Group study for the prevalence of dementia and geriatric depression in community Portuguese samples. This paper highlights the international validity of the used methodology, which allows international comparisons with data from other centres around the world. Finally, a third paper (Julião et al., 2016) analyzed the screening properties of a single question, “*Está deprimido?*” (“*Are you depressed?*”) in terminally ill patients, which appeared to be poor.

In another set of papers (n=10), depression was used as a way to measure several instruments’ validity within a broad scope of constructs: quality of life (Bárrios et al., 2013; Vilar, Sousa, & Simões, 2016), attachment to life (Araújo et al., 2015), trauma-related psychological (in)flexibility (Pinto-Gouveia, 2015), combat severity (Carvalho et al., 2014), fear of falling (Figueiredo & Santos, 2017), neuropsychiatric symptoms (Ferreira et al., 2015), milder forms of cognitive impairment (Freitas et al., 2012), anxiety (Ribeiro et al., 2011) and needs for the elderly (Fernandes et al., 2009). Of these, most (n=7) found strong correlation with depression, but three (Carvalho et al., 2014; Ferreira et al., 2015; Freitas et al., 2012) presented weak correlations.

Interventions

Some papers presented different interventions and their effects on depression or symptoms of depression (n=5). These include a cognitive stimulation program (Alves-Apóstolo et al., 2016), the Portuguese National Walking Program (Branco et al., 2015), dignity therapy (Julião et al., 2014), virtual reality exposure therapy (VRET) (Gamito et al., 2010), and a reminiscence program (Afonso & Bueno, 2009). All interventions were related with decreased symptoms of depression. More details about the programs can be found in Table 2.

Table 2. Summary of main results of interventions

Ref. Nr.	Intervention	Design / Outcomes	Results
Alves-Apóstolo et al., 2016	'Making a Difference' (cognitive stimulation program) in retired community members	One group with baseline, post-test, and follow-up (after 3 months) measurements.	Decreased depression symptoms from baseline to post-test. It explained 21% of the variance. No difference from post-test to follow-up in depression scores.
Branco et al., 2015	'National Walking Program' (program for depression)	One group with pre- and post-intervention measurements.	Decreased depression symptoms.
Julião et al., 2014	Dignity therapy in inpatients with a terminal illness (palliative care unit)	Intervention and control groups. Assessments at baseline, day 4, day 15, and day 30 of follow-up.	Intervention group showed decreased depression symptoms in day 4 and day 30 but not in day 15. Control group showed increased depression symptoms in all assessment periods.
Gamito et al., 2010	Virtual reality exposure therapy (VRET) to reduce PTSD symptoms in war veterans	3 groups: VRET, exposure in imagination (EI), and waiting list (WL).	The VRET group showed decreased of depression in pretreatment and post treatment scores. Depression in other groups was not measured.
Afonso & Bueno, 2009	Reminiscence program	Intervention, control and placebo-control groups.	Intervention group showed decreased depression symptoms in pre- and post-test scores. Placebo-

			control group also showed decrease but there was less difference than in intervention group. Control group showed increased depression symptoms.
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Attitudes towards depression and help seeking behavior

One specific paper (Coppens et al., 2013) focused on the attitudes towards depression and help-seeking behavior in general population (mean age 48 years old, SD 17.6) in four European countries: Germany, Hungary, Ireland and Portugal. It draws upon data from Optimizing Suicide Prevention Programs and their implementation in Europe (OSPI-Europe), and focuses on the findings of this baseline survey. Portuguese data was obtained from participants living in Amadora and Almada regions. In overall, the Portuguese sample was the most open to seek professional help, while Hungary was the least open. Among Portuguese respondents, 65.2 % had the experience of depression in close family members or friends, which was the highest among all countries. Results also showed that both Hungarians and Portuguese considered people with depression as being weak and dangerous, and that individuals with depression could snap out of their situation if they really wanted to. In overall, considering the four countries, the respondents who had higher personal stigma were less likely to search for professional help as well as they see the help as less valuable. While the majority of respondents showed openness to seek professional help, a much smaller number perceived the help as valuable. Taking into account sociodemographic characteristics and other variables, being male, older age and lower education were associated with having more personal stigma and more negative attitudes towards help-seeking behavior. Older people also perceived professional help as less valuable. People living with a partner had better attitudes towards treatment than people who lived alone. In the cases where respondents reported about their own history of depression, there was less personal and perceived stigma. It was also reported the same about people who had experience of relatives having depression or deliberate self-harm problems.

Sociodemographic characteristics of people with depression

Some of the reported papers in these four major categories present information about the association of depression with sociodemographic characteristics of the samples, namely gender, age, educational level, marital status, and economic situation. Although these associations were not their major focus of research, such findings are worthwhile mentioning within this review.

Considering age, different links with depression were found. Older age was linked to higher depression rate (Sousa et al., 2015), the age of higher risk varying from 70 (Leal et al., 2014) and 80 (Bastos et al., 2015) years old. Moreover, older adults had significantly more somatic depression symptoms than younger adults (Monteiro et al, 2016; Gonçalves Silva et al, 2016). However, no link with depression and age were found in some papers (Almeida & Quintão, 2012; Santos et al., 2014). In what regards the education level, higher education was linked to less symptoms of depression (Sousa et al., 2015) and more school years were linked to decreased risk of depression (Almeida & Quintão, 2012; Santos et al., 2014). The education was the third strongest associated factor in one of the studies (Leal et al., 2014). As for gender, some studies found strong associations between female gender and depression prevalence. Men had less symptoms of depression than women (Noronha et al., 2015; Santos et al., 2014). Pattern cluster “RMDs (rheumatic and musculoskeletal diseases) and Depression” had strong association with the female gender (Simões et al., 2017). In accordance with it, depressive disorder was the third most common chronic health problem among females (22.8%), but it was the least common among males (Prazeres & Santiago, 2015). Anyway, one paper (Sousa et al., 2015) found no link between gender and depression.

In what concerns marital status, not being married (i.e. single, divorced, widowed) was related with a significant increased risk of depression (Noronha et al., 2015) while being widowed was associated with even higher risk of depression than being married or living as a couple (Almeida & Quintão, 2012). It was

also found that a bad economic situation was related with higher risk of depression (Almeida & Quintão, 2012).

Conclusions

This review showed that despite the wide consensus on the large amount of burden caused by depression in terms of quality of life and medical comorbidities in later life, very little research has been conducted in order to understand geriatric depression in the Portuguese context. Just after the end of this review, a large-scale study on anxiety and depression in Portuguese older adults was published (Sousa et al., 2017). Based on a sample of 1680 participants aged over 64 years old (44% aged 75+), authors estimated a prevalence of depression on 11.8% of participants and reported that old people with depression have a higher probability to self-report higher levels of physical disability and lower levels of quality of life. The variables associated with depression were low educational level, physical inactivity and drinking alcohol daily or occasionally.

Worthwhile mentioning is one of the papers included in the review here presented (Gustafson, 2013), which refers to a study from 2010 that was based on a primary care setting and found a surprising 42% prevalence of depression, being the female gender, lower education achievement, and unmarried status the main factors associated with depression (Sousa et al., 2010). These findings are somewhat in line with an official document published in 2009 reporting data from 2005/06 concerning the Portuguese National Health Survey that point out to a prevalence of psychological distress as assessed by MHI-5 (Mental Health Inventory), reaching up to 41% in the group aged 75 years old and over (INE & Instituto Nacional de Saúde Doutor Ricardo Jorge (INSA), 2009). Nevertheless, data from the National Health Survey 2014 (INE, 2016) showed that the prevalence of individuals with symptoms of depression as assessed by the PHQ-8 (Patient Health Questionnaire Depression Scale) was 14.8% in those aged 65-74,

17.6% in those aged 75-84, and 19.7% in those aged 85+. These disparate though rather expressive numbers demand further attention not only in terms of the instruments used for assessing depression at these ages (that lead to different prevalence numbers), but also to the consideration of clinical and subclinical diagnoses of depression and psychological distress in older adults. Further efforts for obtaining information on community dwelling vs. institutionalized elderly are also to be considered, as some research has exposed high prevalence rates in these last settings. This is the case of a study recently conducted in Northern Portugal (Bragança) involving 14 residential homes that observed that 47% of the residents included in the study (n=186) had depression, and that it was more prevalent in women (51%) than men (40%), and that it was related to lower cognitive levels, lower adjustments to institutional life, reduced participation in leisure activities, higher rates of loneliness and greater dependency in activities of daily living; the same study found that depression was predicted by three main variables: gender (women), loneliness, and less importance given to leisure activities (Vaz & Gaspar, 2011).

Although the above-mentioned study focusing on Bragança's nursing homes constituted an important contribution as it highlighted the expressive prevalence of symptoms of depression, most of the studies included in this review look at depression as a condition associated with other adverse health and social conditions that are often the main research topic, or even as a concurrent validity measure for several psychological constructs. In fact, only a few studies assumed an approach of looking with greater detail at late life depression characteristics. While continuous efforts made on the assessment of depression are crucial, and the validation of existing tools to Portugal is mandatory, studying the variables associated with depression in later life is very relevant so that we are attentive to the conditions and circumstances that may contribute to poor mental health and quality of life in advanced ages. Gaining deeper insights on changes in the pattern of symptoms of depression, and on the adequacy of assessment techniques developed for different age

cohorts (often accompanied by a misuse of psychometric instruments and deficits in complimentary areas of assessment) are of crucial importance for the field of geropsychology in Portugal, since such aspects are often identified as major problems in the assessment of symptoms of depression in later years (Gonçalves et al., 2009). Overcoming such constraints would benefit the development of tailored interventions and improve recovery rates, which should also be of great interest among academics in this area.

A word on this review regards to its limitations. First, the restriction to a specific number of electronic databases of scientific papers used as sources, as it may have excluded important research that was published in non-indexed Portuguese journals and that may have covered the topic of late-life depression; secondly, in line with this, the exclusion of information that could have been found in books and grey literature on this topic. Also, the review did not account for study quality, relying on peer review. Despite these limitations, we hope that this review may stimulate more research in the field of geriatric depression by psychologists, both in terms of its assessment and intervention, so that better identification and services to old people can be achieved.

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The authors declare no conflicts of interest with respect to the research, authorship, and/or publication of this article.

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