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Review Articles

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Institutionalized old people, depressive disorders, and dental issues: what is the state of the art?

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Abstract

Objective: To map and discuss scientific knowledge involving the research object Oral health conditions and depression in institutionalized old people. *Method:* Scope review of the literature mapping type. The mapping of the selected data was done using the data systematization technique through the Summative Content Analysis from the perspective of Manifest Themes in the texts. After the exclusions, 27 articles were selected. *Results:* With the analysis of the articles it was possible to divide them into two themes. All continents have publications on the topic. Regarding its methodology, a lot of research with the design of deductive studies was carried out and few researches were developed with inductive methods. *Conclusion:* The present study identified that there is a communication between some oral health conditions (xerostomia and tooth loss) and the prevalence of depressive disorders in institutionalized old people.

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INTRODUCTION

The last 30 years have presented a scenario of significant changes in the Brazilian family composition. There was a decrease in the fertility rate and the consequent reduction in the average size of families[1]. In addition, the Brazilian age pyramid revealed phenomena such as the increase in life expectancy and, therefore, the trend of an aging population. According to the 2018 estimates of the Brazilian Institute of Geography and Statistics (IBGE)[2], there has been an 18% increase in the old people population in the last decade. As a consequence of these changes in the characteristics of the population, the profile of the most prevalent diseases in the country also changes, leading to a greater pattern of chronic diseases[3].

Among chronic diseases, depression can be highlighted, which affects approximately 264 million people worldwide. Depressive disorders in old people appear in the context of other chronic illnesses, disabling illnesses and family problems[4]. In addition, factors such as personal or family history of psychiatric disorders, likewise, can contribute to development, as pointed out by data revealed by the World Health Organization, which show that depression affects about 7% of the old people population, which includes people above 60 years old[4]. It is known that there is a difference between the prevalence of depressive illnesses in non-institutionalized and institutionalized old people, and institutionalized old people have a higher prevalence of depressive illnesses[5]. Depressive disorders in old people can lead to weight loss, worsening quality of life, altered self-esteem, in addition to increasing the use of health services and worsening oral health[6,7].

Oral health of old people, institutionalized or not, is fundamental for a satisfactory quality of life for this population[8,9]. The maintenance of remaining teeth and the ability to occlude are important to prevent functional disabilities and maintain a satisfactory quality of life[10]. Depressive symptoms in old people can be determinant of cavities which shows that depression can affect the oral health of old people[11,12]. Institutionalized old people are more affected by depressive disorders and, in this process, it is believed that the prevalence of oral problems in institutionalized old people is an important indicator related to depression in this group of old people[13,14,15].

Given the assumption that conditions related to oral health may be associated with conditions suggestive of depression in old people who are institutionalized, it is essential to map the available evidence to contribute with scientific knowledge in the field of geriatrics and gerontology. Thus, the objective of this scope review was to map and identify scientific production involving the following research object: "Oral health conditions and depression in institutionalized old people".

METHOD

To carry out the present study on the state of the art[16], involving the intersection of subjects such as oral health conditions and depression in institutionalized old people, it is essential to develop a dense bibliographic search due to the amplitude of the theme. In this way, the present study proposes to develop a Systematic Scope Review of the literature mapping type[17,18]. In a scope review, the focus is on the search for the state of scientific knowledge on a topic, carried out through analysis and general discussion of the scientific research carried out and published[17]. Thus, the present literature review proposes to answer the following research question: What is the state of the art involving the interface between questions about oral health and depression in old people who are institutionalized?

The mapping of the data selected for the research, developed by the technique of systematizing the Summative Content Analysis data, was organized in the perspective of Manifest Themes in the texts[19]. In sequence, the synthesis, presentation and description of the results were carried out in a discursive and thematic way[17] organized as shown in Chart 1.

Chart 1. Construction of themes involving the state of the art. Oral health and suggestion of depression in institutionalized old people. 2020.

Themes	Subthemes
1-Oral health condition: LTCF, depressive disorders and pluralities	Xerostomia, dysphagia, mucosal lesions and chewing depression, oral condition and cognitive impairment, dysphagia, need for multiprofessional training and access to dental care
	Cortisol in saliva, depression diagnostic tools
	Life histories, oral health needs of institutionalized old people
	Masticatory skills, implants, oral health conditions and quality of life
2-Depression in institutionalized old people: medicalization, oral health conditions and subjectivities	Medications, dysphagia, depression and behaviors
	Depression in life transition to a care facility
	Interprofessional care, recreational activities, physical exercise, nutritional intervention and depression care
	Social activities and care and reduction of institutionalization
	Depression prevention actions
	Access to oral health services
	Cancer, tooth loss and depression

A bibliographic search was carried out in national and international databases with free access through the Virtual Health Library (VHL) platform with free access via https://pesquisa.bvsalud.org/portal/decs-locator/?lang=pt. This platform includes the following literature databases: Latin American and Caribbean Literature in Health Sciences (LILACS), Spanish Bibliographic Index in Health Sciences (IBECS), Medical Literature Analysis and Retrieval System Online (MEDLINE) e Scientific Electronic Library Online (SciELO). In all the databases accessed, the Boolean operator AND is used in descriptors controlled via Medical Terms (MeSH) for the access of scientific events on a worldwide level.

The search took place from March 12 to April 22, 2020. Similar to the study by Mota et al.[20], controlled descriptors in Portuguese were used, since the VHL search platform retrieves publications in any language through descriptors in Portuguese, English or Spanish. In this process, it is worth noting that the selection of the material was carried out by two researchers, individually and independently, and there was a consensus regarding the selected articles. The search and selection process for the studies in this review is presented in the flowchart (Figure 1), according to a checklist adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[21].
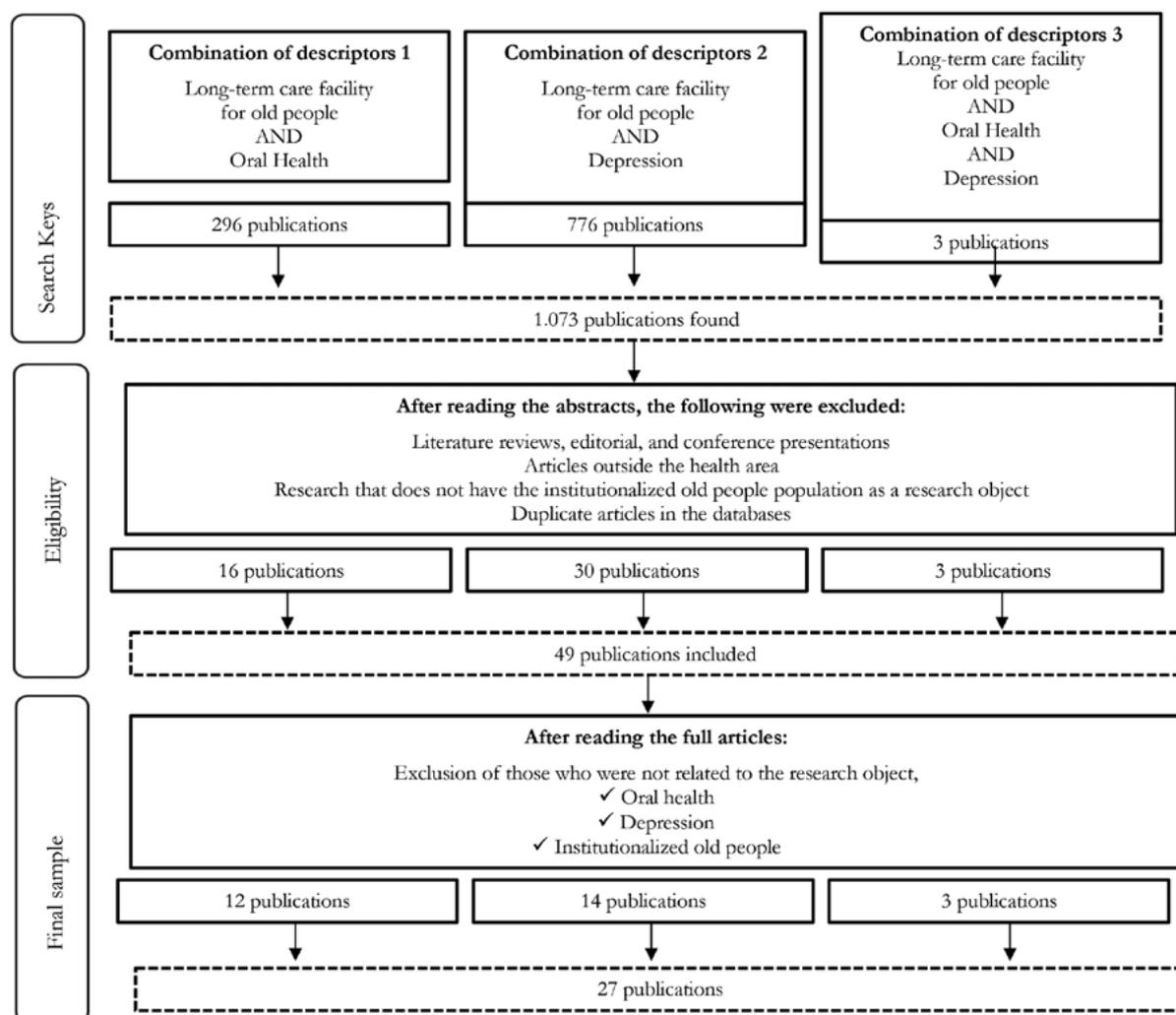
Figure 1. Institutionalized old people, dental issues and depressive disorders. Flowchart of the study selection process, adapted from PRISMA[21], 2020.

Thus, articles were included: with year of free publication, to register the first published evidence on the topic; articles that had their titles, abstracts, and full articles available in Portuguese, English or Spanish; articles that were related to the proposed theme, and that were accessed by the descriptors used. Literature review articles, case reports, editorials and manuals, clinical care reports and protocols were excluded. From the final sample, production characterization data were analyzed, such as: year of publication; country of conduct of the research; study objective; methodological approach; subject related to depression and oral health.

The search strategies allowed to identify 1,073 articles. The reading with analysis of the 49 titles and abstracts, to select the articles that were pertinent to the research question, resulted in the maintenance of 27 articles, which had as a phenomenon of interest the study of institutionalized old people themes, dental issues and depressive disorders. Each article was read in full by peers and was structured on the following themes: Oral health condition: Long-term Care Facilities (LTCF), depressive disorders and pluralities and Depression in institutionalized old people: medicalization, oral health conditions and subjectivities.

RESULTS

In response to the question of the present research, it was observed that there was a heterogeneity in the subthemes of the articles accessed, as well as in the characteristics of the published studies.

The first study accessed was published in 2009 and is Brazilian. The last publication was in the year 2019 and has Brazil and the United States as origins of the research. In this context, it is possible to point out that among all the studies analyzed, six studies originate in Brazil and, of these, three bring the dialogue on the subjects of depression and oral health in institutionalized old people (Tables 1 and 2).

Among the studies, several objectives were observed, such as the description of the oral health condition and the status of dental implants in institutionalized old people, up to objectives more associated with the analysis of the risk of dementia with the use of anticholinergics. (Tables 1 and 2). As for the methodologies used in the analyzed studies, it was observed that many researches with deductive study design were carried out and few researches were developed with inductive methods. In addition to these aspects, only one study, of Australian origin, uses a mixed methodology, which shows that little has been researched with such a method (Table 2).

Table 1. Mapping of the studies included in the scope review categorized in Theme 1, in increasing chronological order based on the year of publication, 2009-2020.

Year of Publication / Author(s) / Country of origin of the research	Objective of the study	Methodological approach	Depression-related issue addressed	Oral health-related issue addressed
2009/De Mello ALSF, Padilha DMP/ Brazil[22]	To identify the characteristics of oral health care for institutionalized old people.	Qualitative/ Thematic analysis	-	Oral hygiene, dental care.
2009/Ferreira RC, et al. / Brazil[23]	To describe the oral health of the institutionalized old people regarding dental cavities, oral hygiene and periodontal disease.	Quantitative / Descriptive study	-	Oral hygiene, coronary and root tooth decay and periodontal disease.
2009/Haumschild MS, Haumschild RJ/ USA[24]	To assess the importance of long-term oral health care and its relationship to maintaining general health.	Qualitative / Narrative analysis	-	Oral hygiene and periodontitis.
2009/Isaksson R, et al. / Sweden[25]	To investigate oral health and the status of oral implants in patients who receive long-term care or who are institutionalized, all with prostheses.	Quantitative / Cohort study	-	Stomatitis, dental care for old people, edentulism, dental prosthesis supported by implant and dental plaque.
2009/Kim HY, et al. / South Korea[26]	To assess the association between masticatory capacity and quality of life related to oral health, associating it with other factors.	Quantitative / Descriptive study with secondary data	-	Masticatory capacity, edentulism and self-perception in oral health.
2010/Bush HM, et al./ USA[27]	To assess the oral health status of old people.	Quantitative / Descriptive study with secondary data	-	General oral health status (pain, bleeding gums and tooth loss, use of dentures) and access to dental services.

to be continued

Continuation of Table 1

Year of Publication / Author(s) / Country of origin of the research	Objective of the study	Methodological approach	Depression-related issue addressed	Oral health-related issue addressed
2010/De Visschere L, et al. J./ Belgium[28]	To compare a supervised versus an unsupervised implementation of an oral health guideline.	Quantitative / Randomized clinical trial	-	Oral hygiene.
2011/Ozkan Y, et al / Turkey[29]	To determine the health status, in addition to treatment needs, in institutionalized old people.	Quantitative/ Descriptive study	-	Access to dental services, current dental status, use and status of prostheses, oral hygiene and edentulism.
2012/Mozafari PM, et al/ Iran[30]	To determine the prevalence of lesions of the oral mucosa in institutionalized old people.	Quantitative/ Analytical study	-	Lesions of the oral mucosa.
2014/Pretty IA/ England[31]	To address the assessment of oral health needs based on the course of life and vulnerability in institutionalized old people.	Quantitative/ Descriptive study	Depression as a comorbidity	Use of prostheses, presence of pain, access to oral health services, self-care in oral health.
2018/Cocco F, et al/ Italy[32]	To assess the prevalence and severity of tooth loss in institutionalized old people and associate other data.	Descriptive observational quantitative sectional study with primary and secondary data	Depression as a comorbidity	Tooth Loss
2018/Machado ACB/ Brazil[33]	To analyze the salivary cortisol concentrations of institutionalized and non-institutionalized old people and verify the conditions of oral health and physical dependence.	Cross-sectional, descriptive and analytical study	Depression as a central object	Use and need of dental prosthesis
2019/Recker E, et al/ Brazil and USA[34]	To describe and compare xerostomia and general health in institutionalized old people.	Descriptive quantitative study with secondary data	Depression as a comorbidity	Xerostomia

Table 2. Mapping of the studies included in the scope review categorized in Theme 2, in increasing chronological order based on the year of publication, 2009-2020.

Year of Publication / Author(s) / Country of origin of the research	Objective of the study	Methodological approach	Depression-related issue addressed	Oral health-related issue addressed
2012/Cassie KM, Cassie WE./ USA[35]	To analyze the effect of culture and climate on depressive symptoms among institutionalized old people.	Quantitative / Descriptive study with secondary data	Depression as a central object	-
2012/Davison TE, et al./ Australia[36]	To examine the use of the Cornell Scale in care facilities in Sydney and Melbourne, Australia, for depressed residents.	Quantitative / Descriptive study	Depression as a central object	-

to be continued

Continuation of Table 2

Year of Publication / Author(s) / Country of origin of the research	Objective of the study	Methodological approach	Depression-related issue addressed	Oral health-related issue addressed
2013/Bomfim FMS, Chiari BM, Roque FP/ Brazil[37]	To identify the factors associated with signs suggestive of oropharyngeal dysphagia in institutionalized old women.	Quantitative / Descriptive study	Depression as a comorbidity	Number of teeth in mouth
2013/Drageset J, Eide GE, Ranhoff AH/ Norway[38]	To analyze the hypothesis that anxiety or depression is related to the survival of patients with and without cancer.	Quantitative / Cohort study	Depression as a central object	-
2013/Underwood M, et al./ United Kingdom[39]	To test the hypothesis that an exercise program would reduce depressive symptoms.	Quantitative / Randomized clinical trial	Depression as a comorbidity	-
2014/Miller LM, et al./ USA[40]	To determine the role of physical activities in the risk of placement in LTCF.	Quantitative / Cohort study	Depression as a comorbidity	-
2014/Van Schaik DJ, et al./ Netherlands[41]	To assess the effects of an intensive care program to prevent the onset of depression in institutionalized old people.	Quantitative / Randomized clinical trial	Depression as a central object	-
2015/Chesler J, et al./ Australia[42]	To investigate an intervention program designed to promote relationships between old people in care.	Mixed study	Depression as a comorbidity	-
2016/Bali V, et al./ USA[43]	To analyze the risk of dementia with anticholinergic use in old people with depression living in nursing homes.	Quantitative / Case control study	Depression as a central object	-
2016/Menezes AV, et al./ Brazil[44]	To verify the effectiveness of physical therapy intervention on cognition, mobility and functional independence of institutionalized old people.	Quantitative / Randomized clinical trial	Depression as a comorbidity	-
2016/Mountford CG, et al./ United Kingdom[45]	To establish the prevalence of malnutrition and investigate the effectiveness of a nutritional intervention program	Descriptive quantitative observational cohort study	Depression as a comorbidity	-
2018/Byers AL, Lui et al./ USA[46]	To determine the association between cumulative burden of depressive symptoms and risk of placement in LTCF.	Analytical quantitative observational cohort study	Depression as a central object	-
2019/Ozaki T, Katsumata Y, Arai A/ Japan[47]	To investigate the association between changes in the use of psychotropic drugs and psychological symptoms of dementia.	Analytical quantitative observational cohort study	Depression as a comorbidity	-

DISCUSSION

This scope review mapped themes with institutionalized old people, dental issues and depressive disorders in national and international databases of interest. According to the 2019 World Population Prospects report, it is estimated that by 2050, one in six people in the world will be over 65 years old[4]. On the European continent and in North America, on the other hand, estimates are different. In these places, one in four people may be 65 or older. Still, according to the report, poorer countries will have their population with life expectancy seven years lower than the world average[4]. By relating the estimates of the world's population aging to the data obtained in the current study, it is possible to analyze that the 27 selected articles were published in 14 countries in total. And, of these countries, nine are among the 25 most developed in the world and, therefore, have a longer life expectancy and a higher projection of an aging population compared to the least developed ones[35].

In the nine countries mentioned above, the number of Long-Term Care Facilities for Old People is greater in absolute and relative numbers than the number of other countries of origin of the articles[37]. With this, one can relate the great scientific production of developed countries on this subject with the high percentage of its old people population. In this context, it is important to emphasize the relevance and the Brazilian lead in the construction of scientific knowledge on the observed themes. In general, all the continents originated studies on the theme; and in Latin America, only Brazil published studies on the topic.

In the articles in which oral health was addressed, the most prevalent oral problems in old people were cited, among which tooth loss, periodontitis, xerostomia, lesions in the oral mucosa and dental cavities stand out. The control of these diseases, in addition to bringing benefits to oral health, also provides improvement in general health[15]. However, the epidemiological pattern of oral diseases in old people is changing as the population ages.

In a study carried out with 75 old people from a long-term care facility for old people in Egypt, oral health education was approached as an important factor for expanding the quality of life of residents. The study participants in which the education tools were applied demonstrated a significant improvement in self-care of oral hygiene. The data in the referenced article demonstrate that institutionalized old people have, in fact, the potential to have greater autonomy in relation to their own oral hygiene care, since, in some articles of the sample, the old person's oral health care is considered the sole responsibility of the institution or their family[43].

Considering the theme 'Oral health condition: LTCF, depressive disorders and pluralities' it can be seen that the oral health condition of an old person reveals a lot about their general health condition as well as their mental health[13]. Elucidating oral health in mental health issues and institutionalized old people, twelve studies were found that constituted the content of the present theme. The literature often points out poor oral health conditions for institutionalized old people and, as a reflection of this aspect, the consequent vulnerability of institutionalized old people.[22,23,27,31]. The literature also shows that there is a communication of findings on the oral health conditions of institutionalized old people, such as xerostomia, tooth loss and the prevalence of depressive disorders in this same population[24,29,32,34]. Studies that point to findings about precarious oral conditions are linked, in a way, to the scientific evidence on depressive disorders in this population. Thus, it is believed that the relationship between depressive disorders and oral health is a subject to be investigated for the old people population in LTCF, as the state of the art points out gaps to be investigated. In addition, the literature shows the importance of including the dental surgeon in care to prevent mental health problems in old people[13].

When addressing the plurality of subjects and research topics involving the issue of oral health and depressive disorders, it is worth noting that depression can affect the oral health of old people, as this disease leads to negligence in hygiene procedures and cariogenic feeding, which leads to an increased risk of cavities and periodontal disease[6]. In this context, old people with depression report dry mouth and oral pain in a higher prevalence than old people without depressive disorder[9].

The present literature review points out that depressive disorders can be diagnosed through the oral cavity. By identifying the concentration of cortisol in saliva, the diagnosis of depression is possible[33]. More broadly, it was also possible to notice that the improvement in masticatory ability with the use of implants directly affects the quality of life[25,26,30].

A study by Cocco et al.[32], which used tools to assess number of functional teeth, presence and types of dental restorations, presence and types of prostheses, caries lesions and systemic factors such as body mass index, mental health conditions and nutritional status. Thus, qualitative studies are not being used frequently, in the scientific approach of this topic. In qualitative studies, the author seeks to interact directly with the object of study, in order to make an analysis without statistical data on the subject, individually analyzing the responses and making a reflection considering their initial hypothesis and the results obtained[17]. Therefore, it is believed that subjective factors that may alter objective and statistical data can be carefully analyzed by answering the question in the present study. Therefore, it is suggested that qualitative methodologies can be further explored with respect to the topic under study.

The results of Machado's study[33], point to higher concentrations of cortisol in the saliva of institutionalized old people with negative self-perception of oral health. Taking into account that cortisol is associated with stress levels, it was realized that high levels of cortisol can lead this population to the development of depressive disorders.

The theme "Depression in institutionalized old people: medicalization, oral health conditions and subjectivities", brings the institutionalized old person to the focus of the discussion between depressive disorders and issues involving oral health, as depression in institutionalized old people can lead to functional impairments and loss of autonomy for self-care[14]. In addition to these aspects, institutionalized and depressed old people have a high prevalence of tooth loss, lack of preventive care and lack of access to dental treatments, which leads to worse oral health[15].

It is observed that, unlike the previous theme, this theme has examples of studies that explore research methods to explore quantitative data and subjectivities. The study by Cassie et al.[47] stands out as an example, which addressed the values, beliefs and expectations of workers in institutions as factors that could directly affect the quality of life and depression of residents. This study obtained as one of its results greater depressive symptoms in institutionalized old people in institutions with a healthy work environment. One of the authors' considerations about this result was the fact that, in more pleasant environments, the individual characteristics of residents are observed by professionals with greater attention and care, thus, depressive symptoms become more evident in these places.

In this theme, the subject of medicalization was directly addressed in two studies, but it is recurrent as an additional factor associated with other objects in studies of themes 1 and 2. In the study by Ozaki, Katsumata and Arai[48], psychotropic drugs, especially anxiolytics and hypnotics, are associated with increased symptoms of dementia in residents of long-term care facilities. Bali et al.[49], also sought to associate mortality among institutionalized old people with the concomitant use of anticholinergic and depressive drugs. In this case, no associations were found. The large number of studies in the literature on medicalization in institutionalized old people can be due to the high number of drugs consumed by this population, compared to a younger age group. However, it is worth emphasizing the importance of making constant comparisons between institutionalized and non-institutionalized old people, in order to understand whether these studies could be applied to the entire population of a region. It is important to investigate the differences in the way that drugs can interact in different depressive conditions and vulnerabilities.

The only subject addressed regarding oral health in the aforementioned Theme 2, was the number of teeth in mouth[50]. Oral health and depression can be associated and the reduced number of teeth is a reflection of this association[6,15,23]. Studies that address the mental health of institutionalized old people and their relationship with the oral health of this population do not seem to be representative in the world literature. It is suggested that the low number of studies on this topic is due to this fact.

Thus, the question arises: in studies whose central theme is depression, shouldn't the topic of oral health be further studied?

It was observed that, regarding the two themes presented in the present study, the association between socioeconomic aspects and cognitive capacity or depression appears recurrently. The study by Ozkan et al.[29], addresses these two issues emphatically. Its objective was to determine the state of oral and general health, in addition to the needs, of institutionalized old people in the city of Istanbul. It is interesting to highlight the results obtained in this case, taking into account that oral health in this population was considered deficient. One of the relevant factors for the oral health status of this population was the price of the procedures and, therefore, the lack of access to dental care for this population. Like Brazil, Turkey is an emerging country, that is, a country in economic development, with average human development indexes, large population and with exports, mainly, of raw material[24]. In general, emerging countries share the characteristic of being nations with great social inequalities. These characteristics can not only affect the nation's economy, but also the quality of life and health of its population. It is suggested that lower socioeconomic indicators are considered limiting factors for good oral health conditions in a population.

It is important to highlight the limitations of the present study, starting with the inclusion of studies accessed through descriptions in English, Spanish and Portuguese simultaneously and not just access in English. Despite this limitation, the results of the present study were not invalidated, as scientific articles published in indexed journals were used.

There was also a restriction of bases and terms used. However, this research was based on internationally recognized references, such as *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA)[21]. Thus, the result of the mapping on oral health conditions and depression in institutionalized old people may contribute to scientific knowledge in the field of geriatrics and gerontology.

CONCLUSION

The knowledge that has been produced about oral health and mental health in institutionalized old people is relatively recent, reflecting the contemporary nature of the theme. In addition, the construction of this knowledge is associated with the diversity of epidemiological and qualitative studies seeking to answer questions that involve technical and subjective plurality involving mental health and oral health of institutionalized old people.

The present study identified that there is a communication between oral health conditions such as xerostomia and tooth loss and the prevalence of depressive disorders. The relationship between depression and oral health needs studies with longitudinal designs to identify possible mechanisms involved in this association in institutionalized old people. It is suggested that further studies be carried out with other data sources and with different descriptors to expand knowledge in the area. Furthermore, it is essential to develop new public policy agendas with measures for prevention, promotion and assistance encompassing oral and mental health.

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