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Study of scientific publications (2002-2017) on suicidal ideation, suicide attempts and self-neglect of elderly people hospitalized in Long-Term Care Establishments

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Abstract *This is a study on scientific work on the ideation, suicide attempt and self-neglect of elderly residents in LTCEs from 2002 to 2017. Documents were retrieved from the following sources: BVS/SP, SciELO, Scopus, PubMed and Web of Science, with the following descriptors: suicide attempt, suicidal ideation, self-neglect, elderly, long-term care establishment, and their correspondents in Portuguese, Spanish and French. Twenty-six papers on the subject were found. There is a consensus among the authors, whose texts are analyzed here, concerning the factors that lead the elderly to suicidal behavior: depression, illness and pain, complicated and traumatic mourning, anxiety and despair after recovery from depressive episode, poor living conditions, death of close relatives, friends, family conflicts, family history of self-inflicted events. The protection factors found are religiosity, optimistic lifestyle, satisfaction with life and investment in the autonomy and power of relationships and communication and monitored drug therapy for mental disorders such as depression.*

Key words *Suicidal behavior, The elderly, Long-term care establishments, Risk diagnosis, Protective factors and preventive measures*

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Introduction

This study aims to present national and international publications on suicidal ideation, suicide attempt and self-neglect in older adults living in Long-Term Care Establishments (LTCE). In his classic book, "Suicide", Durkheim[1] states that the moral constitution of society determines the contingent of voluntary deaths. He adds that every people has a collective force of determined energy that drives people to kill themselves. The author focuses the social macrostructure within which the act of taking one's life is inserted. After Durkheim, suicide has advanced, and sociological analyses of self-inflicted death have been added, as well as other, sometimes opposing, theories addressing this event as a complex and multiple causal phenomenon. In this text, the subject is addressed in its micro-social, interpersonal, psychological, environmental and health complexity, through the contribution of several authors, especially Shneidman[2]; Joiner[3]; Forsell et al.[4]; Osgood and Thielmann[5].

Based on the psychological needs of the human being, Shneidman[2] considers suicide and suicidal behavior as the result of the confluence of maximum pain, disturbance and pressure, which is expressed in the way of life. Also, Joiner[3] says that the desire to die is a function of three constructs: the feeling of non-belonging, the feeling of being a burden to the family or others, and the absence of the instinctive fear of death. Forsell et al.[4] found a peculiar link between suicidal behavior, acts and thoughts with depression, and between ideation and multiple dependencies, institutionalization, severe visual problems and use of psychotropic drugs. Osgood and Thielmann[5] recall that the relationship between suicidal ideation, attempted suicide and suicide is expressed in verbal communications, in behaviors and in a set of signs that can be detected, such as neglecting medication, organizing belongings, naming their future destination, not showing interest in the things of life, suddenly seeking some religion, visiting the doctor verbalizing vague symptoms, among others.

Attempted suicide, suicidal thoughts and self-neglect are analyzed here within public or private Long-Term Care Establishments for the Elderly (LTCE), which in Brazil aim to provide supervision and care to older adults in daily activities and nursing services when necessary. They are regulated by the National Health Surveillance Agency (ANVISA)[6] and, to comply with the Statue of the Elderly, are included in the Social Assistance System (SUAS) in the category of highly complex social protection services. They are defined as "Institutional Reception Services" aimed at serving seniors with broken or weakened family ties and aim to give them full protection in facilities inserted in the community and with residential characteristics, welcoming environment and adequate physical structure. Regarding attempted suicides, the Resolution of ANVISA[6] requires their immediate compulsory notification the local health authority.

Study design

This is one of an integrative review of the national and international literature on self-neglect, suicidal ideation and suicide attempt in seniors that reside in LTCEs. According to Souza et al.[7], the integrative review is the most extensive methodological approach to revisions, allowing the inclusion of experimental and non-experimental studies for a comprehensive understanding of the analyzed event. We follow the following steps to perform this study[8,9]:

1. Elaboration of the guiding question, i.e. identification of the theme and selection of the hypothesis or research question. The motivation to carry out this study, in the Brazilian case, is because, together with the hospitals, the LTCEs are where 26.1% of the older adults' suicides occur, right after their residences or surroundings[10,11]. Generally, self-inflicted death is preceded by various types of suicidal behavior. However, even with such relevance, the number of studies on these institutions as a locus for both self-destructive behavior and self-inflicted death is low[12]. The guiding question of this search is that there rarely is an understanding among the employees and managers of senior residences about the relevance of the boarding environment, the process of separation of the elderly from their families and the institutional dynamics itself, of self-neglect, suicidal thoughts and suicide attempts, predictive elements of self-inflicted death. Thus, we understand that it is crucial to elucidate these issues to prevent such events.

2. Establishment of criteria for the inclusion and exclusion of studies, sampling and search in the literature. Texts were searched in the following data sources: BVS/SP, SciELO, Scopus, PubMed, and Web of Science, from 2002 to 2017. The following descriptors were used: "Asilo" OR "Instituição de Longa Permanência para Idosos" OR "Instituição Asilar" OR "Asilos para Idosos"

OR "Ancianatos" OR "Instituições Geriátricas de Longa Permanência" OR "ILPI" OR "Casa de repouso" OR "Casa lar" OR "Abrigo"; "Idosos" OR "Pessoa Idosa" OR "Pessoa de Idade" OR "Pessoas de Idade" OR "Pessoas Idosas"; "Ideação suicida" OR "Ideações suicidas" OR "Tentativa de suicídio" OR "Autonegligência" and their equivalent in English, Spanish and French.

3. and 4. In literature sampling and data collection, including the definition of the information to be extracted from the selected studies and categorization, 205 papers were selected, all read as to their scope, keywords and abstracts. Of these, 179 were excluded through the following criteria: duplication in the databases and lack of relevance to the subject of suicidal behavior specifically in nursing homes, long-term care establishments, senior homes.

5. Critical review and evaluation of included studies returned, were only 26 studies fit the study object, which were thoroughly read and analyzed as to their understanding of the subject regarding the focus, the method, the results and the discussion raised.

The summary of this selection is shown in Figure 1.

The analysis of the selected papers followed a comprehensive perspective, seeking to study further: (a) the main risk factors related to the suicidal behavior of elderly people hospitalized in long-term care establishments; (b) the comparison between risk factors that specifically refer to hospitalized seniors and seniors in general; (c) protective factors and proposed prevention measures; (d) discussion and conclusions.

Discussion of results

Terms used in the characterization of LTCE and suicidal behavior

Regarding the analyzed literature, the first one to be observed is that the Brazilian term "ILPI" has different equivalents, as per the countries in which the studies were carried out: residence for the elderly; nursing homes; assisted nursing homes for the elderly; homes; rest homes; among others. For this study, all such denominations are referred to herein as LTCEs. Likewise, a varied terminology is noted to name the phenomenon studied here: suicidal behavior to refer to attempts, thoughts and self-harm; direct suicidal behavior to express, for example, voluntary drug poisoning and self-mutilation; passive suicide or indirect behavior to mean, for example, the refusal of food or medicines; self-destructive behavior, self-violence, among others.

(1) Characterization of the papers that underpin the review

In Chart 1, papers are organized by title, author, year, type of study, country of the primary author, publishing journal and principal diagnoses of suicidal behavior. Suicidal behavior is understood here as the individual's way of acting that can lead to self-inflicted death and includes self-harm; persistent thoughts, planning to end life, and history of attempts to accomplish the act.

Although it is a relevant subject, since several authors mentioned[17,26,30,34-36,38] report that older adults in LTCEs proportionately show more suicidal behaviors than the general senior popula-

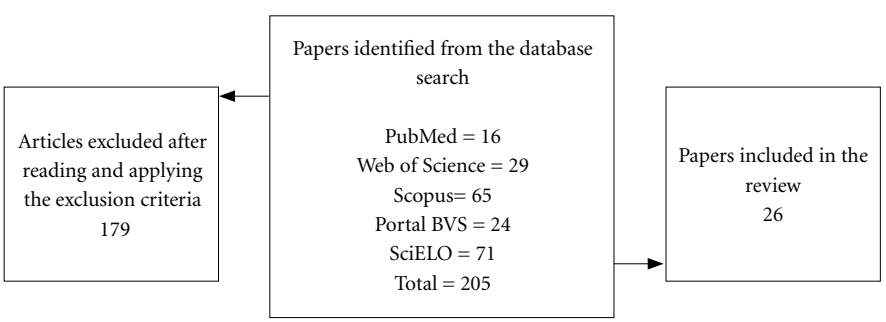

Figure 1. Distribution of papers searched.

Chart 1. Characterization of the papers, by title, author, publishing journal, year, type of study, country, and primary diagnoses (2002-2017).

Author, Title, Publishing Journal	Year	Type of study	Country (place)	Risk diagnosis
(1) Szanto, K; Gildengers, A; Brown, G; Alexopoulos, G.S; Reynolds, C.F. Identification of suicidal ideation and prevention of suicidal behaviour in the elderly. Drugs & Aging[13]	2002	Theoretical essay	USA	Major depression; substance abuse; personality disorders; physical disease; complicated or traumatic suffering; anxiety; incessant hopelessness after the recovery from a depressive episode; history of previous suicide attempts; indirect self-destructive behaviors.
(2) Draper, B; Brodaty, H; Low, L.F. Types of nursing home residents with self-destructive behaviours: analysis of the harmful behaviours scale. Journal of the American Geriatrics Society[14]	2002	Epidemiological descriptive cross-sectional	Australia	Resistant aggressiveness; food refusal; behavioral disorders; self-destructive behavior; dementia.
(3) Draper, B; Brodaty, H.; Low, L.F; Richards, V; Paton, H; Lee, D. Self-destructive behaviors in nursing. Journal of the American Geriatrics Society[15]	2002	Epidemiological descriptive cross-sectional	Australia	Indirect harmful behavior; direct harmful behaviors; dementia.
(4) Ron, P. Suicidal ideation and depression among institutionalized elderly: the influence of residency duration. *Illness Crises Loss Journal*[16]	2002	Epidemiological descriptive exploratory	Israel	Moving to an LTCE (relocation).
(5) Anía, B.G; Chinchillab, E; Suárez-Almenarac, J.L; Iruritad, J. Intentos de suicidio y suicidios consumados por los ancianos de una residencia. Revista Espanõla de Geriatría y Gerontología[17]	2003	Epidemiological retrospective longitudinal	Spain	Disabling physical conditions; previous psychiatric diagnosis.
(6) Draper, B; Brodaty, H.; Low, L. F; Richards, V. Prediction of mortality in nursing home residents: impact of passive self-harm behaviors. *International Psychogeriatrics*[18]	2003	Epidemiological descriptive cross-sectional	USA	Older age; male; lower functioning level; behavioral disorder; passive self-harm.
(7) Meeks, S; Tennyson, K.B. Depression, hopelessness, and suicidal ideation in nursing home residents. *Journal of Mental Health and Aging*[19]	2003	Epidemiological descriptive	USA	Physical fragility; social isolation; depression; hopelessness; lack of a confidant; depressed mood; feelings of helplessness; lower life satisfaction; lower well-being; health problems; functional deficiency; pain; number of prescribed drugs; family conflict; social dysfunction.
(8) Ron, P. Depression, hopelessness, and suicidal ideation among the elderly: a comparison between men and women living in nursing homes and in the community. *Journal of Gerontological Social Work*[20]	2004	Epidemiological descriptive	Israel	Hopelessness; helplessness; depression.

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Chart 1. Characterization of the papers, by title, author, publishing journal, year, type of study, country, and primary diagnoses (2002-2017).

Author, Title, Publishing Journal	Year	Type of study	Country (place)	Risk diagnosis
(9) Chow, E.S; Kong, B.M; Wong, M.T; et al. The prevalence of depressive symptoms among elderly Chinese private nursing home residents in Hong Kong. *International Journal of Geriatric Psychiatry*[21]	2004	Epidemiological descriptive cross-sectional	Hong Kong	Depressive symptoms; not being a beneficiary of Social Assistance and Social Security; low educational levels; low skills for social activities; ocular deficiency; little autonomy for basic activities of daily living; swallowing problems; self-perception of financial inadequacy; dissatisfaction with life; lack of self-perception of health; poor attitudes towards the life scheme.
(10) Low, L.F; Draper, B; Brodaty, H. The relationship between self-destructive behaviour and nursing home environment. *Aging & Mental Health*[22]	2004	Epidemiological descriptive cross-sectional	Australia	Frailty; dementia; passive self-adjudications.
(11) Kao, H.F; Travis, S.S; Acton, G.J. Relocation to a long-term care facility: working with patients and families before, during, and after. *Journal of Psychosocial Nursing and Mental Health Services*[23]	2004	Epidemiological descriptive cross-sectional	USA	Effects of institutionalization.
(12) Adams, K.B; Sanders, S; Auth, E.A. Loneliness and depression in independent living retirement communities: risk and resilience factors. *Aging & Mental Health*[24]	2004	Epidemiological descriptive with use of the Geriatric depression scale and UCLA loneliness scale	USA	Recent loss; little contact with friends; decrease or loss of social network.
(13) Arvaniti, A; Livaditis, M; Kanioti, E; Davis, E; Samokouri, M; Xenitidis, K. Mental health problems in theelderly in residentialcare in Greece - A pilot study. *Aging and Mental Health*[25]	2005	Epidemiological with the use of the following scales: Mini International Neuropsychiatric Interview (MINI), Geriatric Depression Screening Scale (GDSS), and the Mini-Mental State Examination	Greece	Low educational level; depression; effects of institutionalization.
(14) Scocco, P; Rapattoni M; Fantoni, G; Galuppo, M; De Biasi F; de Girolamo, G; Pavan, L. Suicidal behaviour in nursing homes: a survey in a region of north-east Italy. *International journal of Geriatric Psychiatry*[26]	2006	Epidemiological descriptive and qualitative	Italy	History of mental disorders.

it continues

Chart 1. Characterization of the papers, by title, author, publishing journal, year, type of study, country, and primary diagnoses (2002-2017).

Author, Title, Publishing Journal	Year	Type of study	Country (place)	Risk diagnosis
(15) Jang, Y; Bergman, E; Schonfeld, L; Molinari, V. Depressive symptoms among older residents in assisted living facilities. *International Journal of Aging and Human Development*[27]	2006	Qualitative study	USA	Very advanced age; loss of functional autonomy; negative self-assessment of health; feeling of loss of self-control; lack of religiosity; negative attitude about aging.
(16) Kaup, B.A;Loreck, D; Gruber-Baldini, A.L; German, P; Menon, A.S; et al. Depression and its relationship to funciton and medical status, by dementia status, in nursing home admissions. *American Journal of Geriatric Psychiatry*[28]	2007	Qualitative study	USA	Depression; physical dependence; uncorrected medical comorbidities.
(17) Mezuk, B; Prescott, M.R; Tardiff, K;Vlahov, D; Galea, S. Suicide in older adults in long-term care: 1990 to 2005. *Journal of the American Geriatrics Society*[29]	. 2008	Epidemiological with regression and comparative method with demographic data	USA	Massive and depersonalized environment of institutions' facilities.
(18) Reiss, N.S; Tishler, C.L. Suicidality in nursing home residents: Part 2. Special issues. *Professional Psychology: Research and Practice*[30]	2008	Theoretical essay	USA	Indirect self-destructive behavior; history of mood disorders; of cognition problems. Unprepared professionals to recognize mental health problems, diagnose and evaluate depressed and potentially suicidal residents. Lack of adequate public mental health coverage.
(19) Scocco, P; Fantoni, G; Rapattoni, M; Girolamo, G; Pavan, L. Death Ideas, Suicidal Thoughts, and Plans among Nursing Home Residents. *Journal of Geriatric Psychiatry and Neurology*[31]	2009	Epidemiological descriptive	Italy	To be in a very advanced aged.
(20) Ku, Y.C; Tsai, Y.F; Lin Y.C; Lin Y.P. Suicide experiences among institutionalized older veterans in Taiwan. *The Gerontologist*[32]	2009	Comprehensive qualitative study	Taiwan	Disease; pain; death of close relatives or friends; conflicts with relatives; difficulty adapting to institutional life; physical limitation; expectations that do not correspond to the current social changes. Lack of autonomy to manage own money. Changes in the living environment.
(21) Kim, H.S.; Jung, Y M.; Lee, H.S Cognitive impairment, behavioral problems, and mental health in institutionalized korean elders - an eligibility issue for care settings. *Journal of Korean Academy of Nursing*[33]	2009	Cross-sectional qualitative study	South Korea	Cognitive impairment; behavioral problems; mental health problems.
(22) Podgorski, C.A.; Langford, L.; Pearson, J.L; Conwell, Y. Suicide prevention for older adults in residential communities: implications for policy and practice. *PLOS Med*[34]	2010	Theoretical essay	USA	Social isolation; Elderly disagreement about living in a nursing home.

Chart 1. Characterization of the papers, by title, author, publishing journal, year, type of study, country, and primary diagnoses (2002-2017).

Author, Title, Publishing Journal	Year	Type of study	Country (place)	Risk diagnosis
(23) Malfent, D; Wondrak, T; Kapusta, N.D; Sonneck, G. Suicidal ideation and its correlates among elderly in residential care homes. International Journal of Geriatric Psychiatry[35]	2010	Epidemiological cross-sectional quantitative based on sociodemographic data	Austria	Living in an LTCE.
(24) Alexa, I.D; Costin, C; Cehan, V; Felea, V; Ungureanu, F; Rotariu, C. Self-neglect in the case of the elderly. Where are we now? Rev Med Chir Soc Med Nat Iasi[36]	2011	Epidemiological prospective, descriptive and analytical	Literature review	Passive self-destructive behavior.
(25) Mezuk, B; Rock, A; Lohman, M.C; Choi, M Suicide risk in long-term care facilities: a systematic review. *International Journal of Geriatric Psychiatry*[37]	2014	Revisão de literatura	USA	Depression; Social isolation; Solitude; Functional decline.
(26) Minayo, M.C.S; Teixeira, S.M.O; Martins. J.C.O. Boredom while potentializer circumstance of suicide attempts in the elderly. *Estudos de Psicologia*[38]	2016	Qualitative case study	Brazil	Fragile social and family relationships; social isolation; solitude, tedious life time; depression; alcohol abuse; negative perception of aging.

tion, the subject has not received much attention of the scientific community. In the databases analyzed here, in the last 14 years, only 26 references were found. In them, many of the issues brought up refer to seniors in general. Only a few are peculiar to those living in institutions.

Four papers were found in 2002, namely, one theoretical essay[13], two cross-sectional quantitative studies[14,15] and one exploratory review[16]. One retrospective longitudinal study[17], one cross-sectional study[18] and one descriptive and comparative study[16] were referenced in 2003. In 2004, one exploratory and comparative study[20], three descriptive cross-sectional studies[21,22,24] and one qualitative study[23] were retrieved. Only one comparative quantitative study was shown[25] in 2005. The same occurs in 2006, although, in this one, the authors combine a descriptive epidemiological approach and a qualitative approach[27]. Once again, in 2007, only one study was mentioned, namely, a qualitative study[28]. In 2008, the literature showed one descriptive epidemiological study[29] and one theoretical essay[30]. In 2009, one descriptive epidemiological study[31] and two qualitative studies[32,33] were identified. One theoretical essay[34] and one cross-sectional quantitative study[35] were referenced in 2010. In 2011, only one descriptive and prospective work was retrieved[36]. No papers on the subject are found in the searched databases in 2012 and 2013. One review text appeared in 2014[37]. Again, in 2015, no references on the subject were found, and only one text was identified in 2016, which is the only qualitative case study[38].

As of 2010, a decrease or even lack of scientific papers on the subject is observed. Only one text[38] was found in Brazil in 2016 throughout the studied period, which shows the early investment of the scientific community in the subject, despite its relevance in the national context. Most of the early authors are from the United States (11), followed by Australia (3), Israel (2), Italy (2), Spain (1), Hong Kong (1), Taiwan (1), South Korea (1), Austria (1), Greece (1), Romania (1) and Brazil (1).

Fourteen journals in which the analyzed papers circulate articulate suicidal behavior with medical, psychiatric, neurological and mental health issues, and they are: Drugs & Aging; Journal of the American Geriatrics Society; Revista Espanõla de Geriatría y Gerontología; International Psychogeriatrics; International Journal of Geriatric Psychiatry; Journal of Mental Health and Aging; Journal of Psychosocial Nursing and Mental Health Services; Aging & Mental Health Journal; The American Journal of Geriatric Psy-

chiatry; Journal of Geriatric Psychiatry and Neurology; PLOS Medicine; Revista medico-chirurgicală a Societăţii de Medici şi Naturalişti din Iaşi; Societatea de Medici şi Naturalişti Iaşi; Journal of Korean Academy of Nursing; Illness Crisis & Loss Journal. Six journals have a broader scope and address psychological, social, human, and the circumstances that accompany suicide: The International Journal of Aging and Human Development; Journal of the American Geriatrics Society; Journal of Gerontological Social Work; The Gerontologist; Estudos de Psicologia; Professional Psychology: Research and Practice.

From the selection of vehicles for the dissemination of their work, we can conclude that most authors consider the suicidal behavior of seniors in LTCEs a medical and psychiatric problem. Even when it is known that social (conditions and situations of life), relational and microsocial issues are the ones that overly burden the states of sadness, feelings of abandonment, isolation, discouragement and maladaptation of older adults to boarding home, which can lead them to have persistent thoughts of death and commit suicide.

(2) Risks of suicidal behavior of the seniors in general and older adults in LTCEs

The main diagnoses of suicidal thoughts and suicide attempts for seniors in LTCEs, according to the relevance given by the authors studied, are:

- *Physical and incapacitating problems (functional decline)*: physical disease[13,17,19,21,32]; functional decline[18,19,21,27,28,32]; overmedication[19,21,27].
- *Psychiatric problems*: depression[13,19-21,25,28,30,37,38]; abuse of illicit substances[13,38]; personality disorders[13,14]; behavioral disorder[14,18,33]; history of suicide attempts[13]; self-destructive indirect self-destructive behaviors[13-15,18,22,30,36]; direct harmful behaviors[14,15,22]; cognitive impairment[30,33]; previous psychiatric diagnosis[17,26,33,36];
- *Psychological and subjective problems*: persistent or traumatic suffering[13]; feeling of loneliness, hopelessness and boredom[13,19,20,37,38]; frailty[22]; feeling of loss of control over one's life[19,21,27]; negative perception of aging[27,38].
- *Micro-social problems* – being very old[18,27,31], being male[18]; social isolation[19,21,24,34,37,38]; living in family conflicts[19,32,38]; have a low schooling level[21,25]; having experienced deaths and losses of close relatives or friends[24,32]; lack of religiosity[27]; inflexibility and strictness concerning changes, particularly social ones[32].
- *Economic problems* – lack of autonomy to manage one's money[21,32]; lack of security and social assistance[21].
- Socio-environmental problems – involuntary abandonment of the family environment[16]; difficulty adapting to the regulated and impersonal institutional environment[23,25,29,32,35]; loss of old relationships and a problem of interaction with colleagues or managers of LTCEs[32,34].
- *Organizational flaws and flaws in the professional training of caregivers* – lack of customized care, lack of knowledge of how to provide care for the frail seniors[30]; lack of mental health coverage[30].

Difficulties related to physical health, incapacitating diseases, psychiatric problems, subjective issues, flaws in caregivers' professional and family-oriented training, and the massive and impersonal organizational environment lead the list of possible elements associated with suicidal thoughts and attempts and self-neglect. However, all authors are unanimous in recognizing that there is never only one cause for self-destructive behavior, but rather a confluence of adverse conditions. Some emphasize the burden of life histories, family relationships, and the lack of expectation for the future that accompanies hospitalizations, and emphasize the social isolation particularly found in depressive states[38].

Of the 26 authors studied, ten compared the risks of suicidal behavior among older adults in LTCEs and those living in the community. Three of them[16,21,29] consider that, proportionally, there are more people with depression and depressive symptoms in geriatric residences; five emphasize that there are more self-destructive problems among them[13,22,34] and suicidal ideation[35,36], and four emphasize that the process of institutionalization and living in an LTCE, which involves loss of family and community relationships and entering a regulated and often impersonal regimen, are destabilizing and a risk for suicide[25,30,35,36].

Next, Tables 2 and 3 describe protection and prevention factors related to self-destructive behavior, as per the authors analyzed. It is observed that not all the studied authors emphasize these two aspects.

It is possible to have a protective look at older adults living in LTCEs so that they do not give up on life, as per some authors consulted[13,14,20,25,32,35,37]. In general, they emphasize the development of religiosity, drug therapy for cases of mental disorders such as severe depression; association of psychiatric care with psychological counseling, promotion of a positive institutional environment and satisfaction with life, and investment in feelings of autonomy, relationships and communication. The very fact of living in

Ciência & Saúde Coletiva, 24(4):1393-1404, 2019

an LTCE has a contradictory meaning. While for some this means isolation, loneliness and loss of the meaning of life, for others, particularly the poorest and without family ties, being in a residence is a protective situation[14].

The high frequency of disagreements and suicidal thoughts among older adults of LTCE should be carefully considered in the planning and implementation of programs aimed at preventing self-inflicted death[17,20,21,29,34]. According to these and other authors[13,33], suicide prevention must also be part of the training and work of the professionals working in the LTCE, since it is possible to act in primary, secondary and tertiary prevention, in some cases fostering group and social activities and interactions, in others with drug therapy or the addition of supportive psychotherapy and, in very complicated cases, using electroconvulsive therapy, when indicated.

Preventive measures should emphasize the following aspects: (a) Organizing the daily dynamics of LTCE in such a way that seniors have maximum

Chart 2. Protection Factors Regarding Suicidal Behavior.

Authors	Protection Factors
Szanto et al. [13]	Antidepressant treatment
Ron[16]	Attention to subjective mental and emotional states of residents
Arvaniti et al.[25]	Psychological care following psychiatric treatment.
Jang et al.[27]	Psychosocial resources against health restrictions and the condition of hospitalization, among them, religiosity.
Ku et al.[32]	Access to means to manage own money.
Malfent et al.[35]	Recognition and appropriate treatment of self-neglect and suicidal ideation.
Draper et al.[14]	Living in LTCE, for the deprived of social conditions and family support.

Chart 3. Preventive measures against suicidal behaviour.

Authors	Prevention measures
Szanto et al.[13]	Investing in studies on the effectiveness of treatment for depression, particularly with primary care physicians.
Anía et al.[17]	Training caregivers and health professionals to diagnose and refer cases of suicidal behavior, preventing self-inflicted deaths.
Ron[20]	Investing in interdisciplinary care in the mental health of residents, particularly in the preliminary stages of institutionalization where the risks are greatest.
Chow et al.21 e Low et al.22, Mezuk[29]	Attention to the organization of LTCEs and in the training of caregivers, promoting personalized care, individual care and healthy collective environment.
Socco et al.[31]	Organization of care programs so that they are attentive to the high frequency of death, signs of suicidal behavior and the relationships between people within institutions.
Ku et al.[32]	Training institutional staff to be able to communicate with older people and talk about their feelings, their needs, their suffering, managing their own life and their money and also about death.
Kim et al.[33]	Permanent performance of health personnel working in LTCE in the face of the cognitive-behavioral problems and the mental and emotional difficulties of some seniors.
Podgorski et al.[34]	Developing protocols for procedures applicable to episodes of self-harm and other suicidal behavior.
Malfent et al.[35]	Establishing research and prevention strategies that cannot be limited to the perception of risk and should include protection factors.
Alexa et al.[36]	Establishing sensitization programs to raise the awareness of society and provide support to families so that there is a positive understanding of aging and to avoid the marginalization of the elderly.
Mezuk et al.[37]	Working to reduce the risk of suicide in assisted living, both in the training of professionals and in the organizational characteristics that promote well-being, personalized care and social and emotional support.

autonomy over their lives, including the management of their financial resources[33,37]; (b) Providing continuous training to caregivers, including information on aspects of the culture experienced by older adults, on the characteristics of aging, even conversations about the viewpoint of inmates about their ideas of putting an end to life and how they plan to do it[31,34]; (c) Being aware of the fact that suicidal behavior is influenced by physical (various types of diseases, pain and dependence), emotional (affective loss) and relational (changes in communication with family members, separation from of friends, adaptation to the institution) and cognitive-behavioral aspects[23,33]. (d) Social and medical services must pay attention to signs of self-neglect (which suggest suicidal behavior), such as refusal of food, medication, and social isolation. It is up to the professionals to interact with people, to encourage their contact with colleagues and to avoid their marginalization. This requires a multidisciplinary approach that usually includes a geriatrician, psychologist, and social worker[36]. (e) It is essential that LTCE provides an individualized approach[22,29,35,36].

(3) Summary of knowledge

In many respects, the studies presented here coincide with the scientific literature on suicide attempts of seniors not residing in LTCEs[39-43], particularly concerning depression as a triggering factor of the desire to die and several other factors already pointed out. However, there are some specifics. Many of them[16,21,29] consider that, in geriatric residences, there are proportionately more people with depression, depressive symptoms and self-destructive behaviors[13,22,34-36]. Moreover, they point out that the very process of institutionalization and living in an LTCE with a regulated and impersonal arrangement is destabilizing for some, and a risk for suicide[25,30,35,36].

However, in some circumstances, LTCE admission may be beneficial, because albeit in a more impersonal way than in families, ongoing surveillance and assurance of primary care are assured, as well as a lower probability of access to the means to commit suicide. In cases analyzed in a recent survey[44], particularly senior men living in the streets, separated from families and very poor can resume the course of their lives. Some of those had made several attempts to take their lives before admission.

The management of financial resources by older adults – when they have the physical and mental capacity to do so – is another relevant point brought by literature. The feeling that not being dispossessed, enjoying some autonomy and being able to make decisions reduces the feeling of helplessness and being protected by employees or relatives.

The organization of an LTCE must take into account the factors that cause destabilization in someone who is admitted, mainly aiming to preserve the maximum autonomy of the people, provide personalized care and have a cadre of professionals who can give support to the seniors.

The training of health professionals, support staff and administrative staff was highlighted as of great importance for the quality of life of the institutionalized older adults by all authors who referred to the prevention of suicidal behavior. This statement reinforces findings from studies[45] which show how people who work in LCTEs feel unprepared and face difficulties in dealing with cases of suicidal ideation and attempts, either through ignorance or lack of adequate training.

In this particular, it is understood that it is necessary to take care of professional caregivers since the relationship between them and seniors is an exchange that can enrich or sicken both. At the end of the nineteenth century, Durkheim[2] already warned that an ignored, excluded and marginalized individual, from whom many duties are required and to whom few rights are given, feels outside of organic solidarity and social cohesion and, therefore, take their lives.

Although the scope of an LTCEs is social security and the protection of the health and human rights of older adults, because of their organizational structure and way of acting, many of them can pose risks to the quality of life of those who live there, for example, when they contribute to a reduction of their autonomy, the loss of family and community identity marks, and their removal from interaction with younger generations.

On the part of older adults, living in an LTCE requires the reorganization of their social and subjective lives and internalization of mechanisms that may facilitate their insertion in this form of social coexistence. Because of age-specific frailties or physical and mental health problems of the elderly, LTCEs can exacerbate the effects of a regulated and segregated life of the family and community environment, representing a factor of exacerbation of suicidal behavior. However, it should be pointed out that in some instances, for example, when seniors traverse multiple dependencies, admission can have positive effects, bringing more protection and better care[14,15].

Collaborations

MCS Minayo, AEB Figueiredo and RMN Mangas equally participated in all stages of the paper.

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