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Suicide attempts among the elderly: a review of the literature (2002/2013)

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Abstract *A literature review was carried out focusing on the main factors associated with suicide attempts among the elderly. The research was conducted between 2002 and 2013 in the MEDLINE, Lilacs, Pubmed, PsychINFO, SciELO, the Virtual Library in Violence and Health from BIREME and the Virtual Library of Public Health databases. 105 texts were selected and 75 were analyzed. Studies are on the increase in North America, Europe and Asia, rare in Latin America and do not exist in Africa. The major causal factors for attempted suicide are degenerative and chronic diseases, physical dependence, mental disturbances and suffering, as well as severe depression. Depression is the most relevant cause found, combined with chronic physical suffering, loss, abandonment, loneliness and family conflicts. Differences in gender, ethnicity, the ageing process, social issues and cultural backgrounds are also major contributing factors. The subject of suicide attempts among the elderly is a problem that is extremely relevant to the Unified Health System (SUS); however, this problem is not addressed in Brazil in theoretical or practical terms. We trust that this review can serve as a model for empirical studies to contribute to health support for the elderly and promote health in old age.*

Key words *The elderly, Attempted suicide, Suicide and ideation, Risk factors, Review*

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Introduction

This study presents the current status of knowledge, the main issues discussed, the investigation methods applied and proposals for suicide prevention, which are found in studies into suicide attempts among elderly people.

A *suicide attempt* is understood to involve acts performed by individuals who intend to kill themselves, but which do not result in death[1]. These actions are often related to the individuals' emotional inability to identify feasible alternatives for solving their conflicts and sufferings, so that death appears to be the only way out. A series of factors are associated with suicide risks and include physically disabling diseases, mental illnesses, alcohol and substance abuse as well as family and socio-economic issues. With regards to elderly people, most studies show a strong incidence of depression and other psychiatric disorders, as well as degenerative diseases that cause dependence or unbearable physical suffering, dependence and social isolation.

A narrow relationship exists between ideation, attempted and consummated suicides among the elderly. The American Association of Suicidology[2] estimates that among the general population there is one consummated death in every twenty-five suicide attempts; among youngsters, the ratio is of approximately one for every 100 to 200 attempts; and among the elderly, the ratio is 1:4. It is evident that it is important that society and the healthcare sector take action to reduce the risk of such acts.

There are several reason why interest has been shown in studying suicide attempts among elderly people in Brazil: (1) the number of people in the country over the age of sixty has increased; (2) international and national studies show that suicide attempts are a form of violence that demonstrate quality of life issues[3-6]; (3) the World Health Organization - WHO - have declared that, in the case of elderly persons, suicide attempts constitute a serious public health issue[1]; (4) the fact that only the most severe cases reach the healthcare services and are statistically recorded. And last, but not least, (5) knowing the reasons why an elderly person has attempted to take his or her own life, is crucial in order to be able to create an effective suicide prevention program.

The current review deals mainly with articles about attempted suicide. Available literature shows that these suicide attempts are correlated to both ideation and consummated suicides, but also present characteristics of their own.

Method

The current research study covers the period from 2002 to 2013. It encompasses published articles which are indexed at the Public Health Virtual Library (BVS/SP) at the Pan-American Health Organization's Regional Library of Medicine (Bireme), at Medline, PubMed and at PsycINFO. The researched subjects include: "suicide attempts among the elderly"; "the risk of suicide attempts among the elderly"; and "the prevention of suicide attempts among the elderly." This survey located a total of one hundred and five documents, thirty of which were not directly related to the subject reviewed because they dealt with self-neglect, ideation and consummated cases. Another series of articles excluded discussed cases of attempted suicide in long-stay institutions, such as nursing homes and retirement residences, and this issue does not form part of the present study. Of the remaining eighty texts, three did not refer to the period under review.

All the abstracts were read and thirty-five articles were analyzed in their full text versions. The review was carried out according to documental analysis criteria: by organizing the material in accordance with the aims of the current study; by analyzing the methodology adopted in the articles, the approach used to investigate their content and the emphasis given to their findings and conclusions.

The main analysis categories used in this study were (1) the viewpoint of the authors with regards to the reasons why elderly people attempt suicide and the risk factors involved in such cases; (2) the methods employed by the authors; (3) the regional diversity of the articles and their special characteristics; and (4) suicide prevention proposals.

Results

The views of the authors with regards to suicide attempts and the risk factors involved

The classificatory category called "views of the authors,"includes motivation, clinical and situational diagnosis and risk factors. The texts were read based on these three perspectives.

The most common diagnosis found in the majority of the articles on suicide attempts among the elderly, is the presence of chronic depression associated with other psychiatric prob-

lems[7-23]. Several authors claim that depression is the most relevant risk factor to make a person want to end their life[24]. Others underline the relevance of depression, claiming that this is the key to understanding the whole question of suicide[9,12,20,25-28].

Although they highlight the crucial role played by chronic depression, most of the authors whose views stress that there is evidence that depression combined with physical and mental health morbidity and social issues are factors in cases of attempted suicide: symptoms of depression associated with chronic diseases, insomnia and the absence of family and friends with whom they can share their problems[29]; the loss of vision and hearing, other degenerative diseases and a fragile mental state[10]; frequently undiagnosed personality disorders combined with chronic and degenerative diseases that lead to a loss of independence and acute suffering, loneliness and social isolation[11,12]; personality disorders associated with recent traumatic events[14]; lack of social support and physical inactivity combined with symptoms of depression and alcohol abuse[15]; the presence of cerebrovascular diseases[30] and subclinical symptoms such as anxiety and hostile behavior patterns combined with insomnia and relational difficulties[31]; relationship with schizophrenia[32]; loneliness followed by financial and social survival difficulties associated with psychiatric issues combined with previous suicide attempts[18]; family conflicts, social privation, feelings of despair and a low level of self-esteem[33,34]; lack of social support associated with chronic depression[20]; loneliness, isolation, lack of social support, an environment where there are family conflicts, the loss of loved ones combined with mental disorders and substance abuse; the presence of degenerative diseases that cause acute suffering and the fact that they have made a previous suicide attempt[13]; panic syndrome associated with prescription drug abuse[22]; personality disorders, anxiety disorders, a lifetime of substance abuse, problems related to a lack of maternal affection during their childhood development, and social maladjustments[35,36]. In a multi-centric study carried out in Europe, De Leo et al.[7] found that the following factors predispose people to make repeated suicide attempts: losing a father in childhood which results in financial difficulties, relational problems, prevalence of affective psychoses, depression, alcohol abuse and disease.

Some authors highlight different gender patterns when discussing cases of attempted suicide among the elderly: risks tend to reduce with age in the case of women and to increase with men. Cook et al.[8] and Salib and Green[37] again underline the role that chronic depression and psychiatric illnesses play in triggering the suicide process, both among men and women.

According to Lebret et al.[16], the main reasons why elderly women attempt suicide are due to: physical dependence, degenerative diseases, memory disturbances and previous attempts to commit suicide; according to Inoue et al.[38], this includes chronic physical diseases (cardiovascular, metabolic, orthopedic and digestive diseases), which make them dependent on others; as well as mental illnesses such as psychiatric disorders and stress. Lau et al.[39] underline low levels of resilience, distress, despair, social isolation and uncontrolled emotions. Blüml et al.[36], show that there is a high risk of suicide attempts among women who have a neurotic personality when this is combined with moderate or severe symptoms of depression, difficulties in relationships and in adapting to the aging process. Cougle et al.[40] report that, in the case of elderly women, the four main forms of anxiety (social, post-traumatic, stress and panic syndrome) are predictive of suicide attempts. According to Cougle et al.[40], as already mentioned by Blüml et al.[36], elderly women with neurotic personalities are much more likely to develop depression. This same author also states that the interaction between depression and anxiety disorders may explain why neurosis is a risk factor for women, but not for men.

In the case of *men*, Bradvik et al.[17] invert the usual concept by saying that a suicide attempt is a predictor of depression. They list the main predetermining factors, which are: health problems, anxiety disorders and untreated psychiatric illnesses[41]; ongoing personal and sexual conflicts with their wife and disagreements with their children, divorce and low levels of self-esteem[42]. Tan & Wong[27] draw attention to the importance of chronic depression, degenerative physical diseases which cause suffering or sexual impotency and low levels of social support. Miret et al.[43] identify predetermining factors as: prior psychiatric hospitalization; use of more lethal methods in their previous suicide attempts. Capron et al.[44] suggest additional factors: premeditated plans to kill him/herself, having persistent suicidal ideations, ironically verbalizing their previous suicide attempt, and suffering from anxiety disorders. When there are no apparent symptoms of depression, Kato et al.[23] lend weight to humor disorders, lack of social support and physical inactivity as important risk factors. Awata et al.[15] underline alcohol

abuse, symptoms of depression and other mental disturbances. Conwell et al.[45] state that a precipitating factor is to keep a gun at home. Blüml et al.[36] highlight as risk factors: inability to communicate, as well as high levels of anxiety. With regards to the last point, findings produced by Blüml et al.[36] contradict those of Cougle et al.[40], who believe that anxiety is a predisposing factor in the case of elderly women but not in men. In a sample survey involving elderly homeless war veterans in the USA, Shinka et al.[46] found that there was a strong connection between attempted suicide and those who had a background of psychiatric problems and substances abuse, fact that reinforces the findings of Miret et al.[43].

Covering the period between 2002 and 2013, it is important to point out that the greatest differences between the selected research topics are related to the regions of origin of the researchers themselves. Articles written by authors from Asia are mainly population and community-based and centered on hospital archive material[10,14,21,27,31,37,46,47], and most were co-authored by American and European researchers. Only a few researchers actually made profound studies on specific issues, as Kin et al.[48] and Kwon and Kim[49]. There are practically no studies on this subject in South America and the articles that exist only tend to cover local areas[11,12,50] which shows that there is a lack of theoretical investment in the subject.

Such studies in North America and Europe generally tend to refine research results, establishing associations and presenting relevant plans of action. This is the case of articles produced by Heisel et al.[20] Cook et al.[8] Baca-Garcia et al.[51] and so on. In addition, there are those contributions by Crandall et al.[52] and Stein et al.[53], which are about the connections that exist between attempted suicide and trauma; the review by Fässberg et al.[54] on the social factors associated with attempted suicide; the study by Peisah et al.[55] about establishing a possible relationship between attempted suicide and consummated suicides through clinical pathological analyses; the study by Wiktorsson et al.[18] about motivations for suicide attempts among the population in general, as well as among the elderly; follow-up studies made with a group of elderly people who had previously attempted suicide[19]; the analyses carried out based on gender[38,41]; studies about suicide risks during internment at psychiatric hospitals[42]; those related to cognitive evaluations[28]. Ziervogel et al.[26] worked on the principle that it was necessary to train caregivers so that they could help prevent suicidal attempts, while Conwell & Thompson[3] has produced a vast series of studies on specific subjects and on suicide prevention.

A thematic and temporal summary of all the studies included in the present survey was organized and are presented in Table 1. The texts were listed by their year of publication and presented in quadrennial groups. An analysis was carried out on headings, topics and place of publication. The temporal evolution of the scientific research showed that, between 2002 and 2005, there were studies which linked cases of attempted suicide to consummated suicides, focusing on risk behavioral patterns, based on the theory that depression was the factor that causes the greatest concern, associated with chronic diseases and personality disorders.

Between 2006 and 2009, it was noted that the number of articles produced on this subject had greatly increased in all three continents, and that the focus of these studies was to outline the severity of depression, ideation, suicide attempts and the impact of risk factors. It was noted that, between 2010 and 2013, there was an enormous increase in the number of articles produced and the different types of approaches used in relation to this topic and suicide attempts, as well as to differences in gender, ethnicity, age groups, interpersonal difficulties, social support, anxiety, quality of life, the relationship between depression and perception, and between hope and psychosis; the type of support and treatment a person receives and their place in society.

During all these stages, there has been a consistent and growing concern to find ways to prevent depression and suicide attempts, as well as a realization that primary care and mental health professionals are needed to provide far greater support to the elderly.

Methods used in this research study

Of the 75 texts that were analyzed, only three used a qualitative approach method[12,33,50]. Even so, research studies carried out by Matusevich, for example, do not describe the methodological processes used. There are a total of six reviews[54,56-60]. All the remaining articles resulted from epidemiological approaches. In the latter case, these include: frequency studies with multi-variant analyses[8,16,18,22,23,36,37]; prevalence studies based on population numbers[10,27,41,47,61,62]; retrospective analyses based on archives from hospitals and hospital emergency care units[7,18,19,29,31,37,50] and psychiatric hospitals[16,23]; longitudinal studies[7,35];

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Table 1. The way the issues researched in these articles evolved during the period between 2002 and 2013.

First Quadrennial	Number of articles	Evolution of the issues studied (2002 to 2005)
2002	07	At the beginning of the twenty-first century, interest began to be shown in suicide risk factors and suicidal behavioral patterns. Depression was seen as the prime cause of concern. Studies were conducted on cases of attempted suicides, rather than consummated suicides, or focused on chronic diseases and personality disorders. Others recommended that the elderly should receive follow-up care from the mental healthcare and primary healthcare services. Psychotherapy, cognitive approaches and helping people to maintain an optimistic view on life are highlighted. It is worth noting that preventing depression and suicide attempts have by now become a major focus of attention.
2003	08	
2004	04	
2005	07	
Subtotal	26	
Second Quadrennial	**Number of articles**	**Evolution of the issues studied (2006 to 2009)**
2006	03	At the end of the first quadrennial, it was observed that studies on suicide attempts among the elderly had become more diversified in countries in North America, Europe and Asia. Chronic depression and suicidal ideation are still targeted and linked to cases of attempted suicide. Epidemiological analyses are carried out that claim that increased use of antidepressants is linked to reduced suicide rates. Other analyses draw attention to the fact that certain prescribed drugs can trigger suicide attempts. Actions to prevent suicide are becoming more widely implemented in regions where there are high rates of suicide and also among older age groups. The link between suicide attempts and anxiety disorders is highlighted. Studies from Japan and Singapore focus on suicidal tendencies and chronic depression and suicidal ideation; in the USA and Canada, studies focus on risk factors associated with trauma, vascular brain damage, suicidal behavioral patterns and suicide risk factors. A growing number of research studies related to attempted suicide are conducted in England, France and Thailand. There is a general consensus that the elderly should be referred to mental health professionals.
2007	07	
2008	03	
2009	06	
Subtotal	19	
Third Quadrennial	**Number of articles**	**Evolution of the issues studied (2010 to 2013)**
2010	06	The beginning of the third quadrennial shows a trend towards producing broader studies on attempted suicide in different countries and continents. The first investigations begin to be carried out in South America, though there are still no articles by researchers in Africa. Studies grow in number and diversity. Some show there is a higher risk of suicide among people aged seventy and above; that there is a relationship between suicide and early life; differences related to gender, ethnicity; deliberate self-harm among the elderly; the absence of social support and interpersonal difficulties; the link between suicidal attitudes and schizophrenia. Suicide attempts and ideation seem to be associated with other factors such as anxiety, quality of life, cognitive organization in elderly people who suffer from depression and a sense of despair shown by those with psychotics. The occurrence of suicide is established among elderly homeless people and war veterans. In this stage of understanding, several authors agree that it is possible to predict a suicide attempt among elderly people suffering from depression and suicidal ideation.
2011	08	
2012	09	
2013	07	
Subtotal	30	
Total	**75***	

* Five references were excluded from this time frame, which means that the current research paper referred to a total of eighty sources.

evidence-seeking review studies[54,56,57,59,60,63,64]; studies using controlled cases from a sampling of psychiatric patients[14,17,30-32]; community-based controlled case studies[39,65-67]; population-based

studies using scales such as: the Geriatric Suicide Ideation Scale (GSIS-C)[16,46,63]; the Beck Hopelessness Scale[33]; the Mini Mental State Examination scale (MMSE)[9,31] and tests such as the Anxiety Sensitivity Index (ASI)[43]; clinical-pathological studies[54] and neuropsychiatric studies[57]; prospective group studies[7,19,29,33,34,51]; random population based transversal studies[35,53,68]; random multi-centric sample studies[53,54,56,66], case studies[55] and trend analyses[38,61,62,69].

Suicide Prevention Proposals

The health sector works with three traditional levels of suicide prevention: the first, is to ensure that the problem does not occur; the second, if the problem occurs, to propose that the person receives the necessary care on a clinical, family and community level; and the third, involves treatment that can help a person to overcome or minimize the type of acute suffering that leads to attempted suicide.

Most of the authors referred to in this paper did not develop suicide prevention proposals. Those who do share many concerns: reviews that list suicide prevention actions[58-60,63,64]; evaluation studies about the effectiveness of interventions[60,66,67,70-74]; and reinforcing conclusive proposals based on epidemiological analyses[68,72,74-79]. Many authors emphasize the need for primary care, which requires the integrated efforts of family members, society, as well as professional health workers. The theory that supports investing in a basic level of health is based on the idea that suicide results from a complex group of stressful factors which a person experiences through life and which manifest themselves in old age[66-68,75]. In this sense, a risk evaluation, even though there are many different scales available nowadays to help in such evaluations, does not exclude the need for the skills of a health professionals to establish an empathic relationships with an elderly person, and who can also pay special attention to a person's particular circumstances, future expectations, quality of life and history of illnesses and suffering.

Some authors mention initiatives that are outside the medical sphere. For example, Nock et al.[56], underline the important role that spirituality, religious beliefs and practices have in this respect, bearing in mind the powerful moral objections that these show towards suicidal behavior; these authors also highlight the positive effects of social support, the presence of children at home and the integration of elderly people with their communities[13]. Cultivating friendships and relationships is seen as an important factor to help the elderly ward off feelings of depression as well to avoid thinking about suicide, or to attempt and consummate a self-inflicted death, as highlighted by Beeston[4] and Conwel and Thompson[3]. Other studies such as those by Mann et al.[58], Kapusta et al.[62], Conwell & Thompson[3], Shah[61] underline that restricting access to potentially lethal agents, as well as providing treatment for depression, have produced significant results in preventing suicide.

According to Cox et al.[64], four basic actions are required to prevent suicide attempts: restrict access to agents used in such attempts by creating physical barriers to their use; make it possible for elderly people to seek help by installing emergency health alarms and hotlines in their homes; increase the probability of a third-person intervention, by asking lay persons or trained health professionals to keep an eye on the elderly; and alert and encourage the media to produce responsible reporting on the subject, with guidelines to help health professionals know what to do and what not to do in such cases.

Several researchers emphasized the importance of providing adequate training for health professionals who work in primary and mental healthcare services, so that they will know how to carry out suicide prevention proposals and mitigate the risk of suicide attempts[13,36,68]. Serna[13] states that there is evidence that most elderly people who have attempted or consummated a suicide, did not receive the proper care or even basic treatment[59,60,76]. If the risks had only been recognized during their medical consultations, then a greater number of vulnerable elderly people would certainly have had a greater chance of being dissuaded from the idea of committing suicide. In the case of primary health care, if the Brief Symptom Rating Scale (BSRS-5) is used in combination with a personal interview to find out whether an elderly person has a cognitive behavioral pattern, then this will help professionals to act before a problem occurs[31]. Other authors are concerned about forming an integrated primary healthcare service, which also includes emergency and other services related to mental healthcare, so as to provide effective follow-up care to elderly people who have already attempted suicide[3,62].

Even if depression has always been an important factor associated with a person's efforts to kill him/herself, the studies analyzed emphasize the importance of primary healthcare and the

need to improve the diagnostic process, so that the proper referrals may be made. In treatments involving the most severe cases, and in order to prevent suicide attempts, it is proposed to use anti-depressant medication combined with various types of psychotherapy: cognitive therapy[70], dialectical behavior therapy[71]; problem-solving therapy[77]; and adaptive therapy[72]. However, there is still no general consensus on the subject. For example, Erlangsen et al.[69], from a community-based research, show that treatment with anti-depressants does not necessarily reduce the number of suicide attempts. And Heisel[75], underlines the fact that studies do not yet exist that prove the effectiveness of combining medication with different methods of psychotherapy. This is because many types of psychotherapy that seem to be effective with another age group are difficult for older people to accept. However, Bruce et al.[66] and Szanto et al.[74] found that the combination of antidepressants and interpersonal therapies produced positive effects, although, as they say themselves, it is still impossible to say whether one form of intervention is more important than any other. There are also other proposals, such as electroconvulsive therapy, which is used to treat elderly people suffering from depression and, in particularly, to treat those who have already attempted suicide. However, as Van der Wurff et al.[59] point out, studies do not yet exist which prove the effectiveness of such procedures.

Discussion

The wide range and number of reasons and factors given by the group of authors, whose work has been reviewed in this paper, on the one hand, that it is never a single cause that leads a person to commit suicide attempts. On the other hand, there is no general consensus about the multi-causality of this phenomenon.

Most of the authors tend to enhance the role that depression plays when they explain the reasons for attempted suicide. However, there is still a certain amount of controversy on the subject. For example, Richard-Devantoy et al.[57], indicate that suicidal behavioral patterns result from the complex interaction that exists between stress factors and vulnerability factors, including cognitive deficiencies, with a special emphasis on depression and a person's history of previous attempts. Also, in their recently concluded research paper, May & Klonsky[78] state that, from all the most commonly described motives for attempted suicide and suicidal ideation, the only ones that can be considered to be truly universal are despair and unbearable emotional suffering.

As far back as 2002, Conwell et al.[45] were already drawing attention to the fact that prospective cohort and retrospective control case studies indicated that affective disorders were potent risk factors that might induce an elderly person to commit suicide, and therefore have important implications with regards to suicide prevention methods. In the second place of importance, the authors noted that the absence or loss of family ties an unbending personality and other mental issues play an important part in explaining why elderly people try to commit suicide. However, even at that time, these diligent researchers commented that it was still necessary to define more clearly the interaction that exists between the emotional, physical and social issues that determine the risk of a suicide attempt and consummated suicides, as Conwell[79] have also stated in more recent years.

An important point noted in existing literature, is that suicide attempts are usually treated from studies of consummated cases of suicide. It is possible that this can be explained by the fact that information about an attempted suicide often comes from psychological autopsies[3-6,56]. It is through such studies, that a series of predetermining motives have become more widely known: social isolation, death and the loss of people who were reference points in their lives, depression, previous suicide attempts, intense feelings of despair, illnesses that limit a person's physical and mental independence; losing one's sense of social relevance and the meaning of one's existence; permanent and frequent physical pain; loss of independence, which is often also regarded as a loss of personal dignity and a source of humiliation[3-6,61,68].

A point of great relevance concerns the methodological approaches used in this research. Most of the articles (94.7%) have been studied by using epidemiological tools. Most function with secondary data or by using an empirical approach, which in the case of the latter almost always involve the use of a system of scales. The three studies (4%) which use a qualitative approach investigated individual and collective cases by using in-depth interviews, or through the use of other tools, including psychodrama. With regards to the almost total absence of a qualitative approach in research works about attempted suicide, the first question that the methodological framework underlines is: why is it that an elderly person who

has tried to committed suicide is almost never listened to by researchers when they are doing their in-depth interviews? After all, he/she is still alive and, in most cases, still has the physical and mental abilities to define his/her situation. Surely they themselves are the most important people who should talk about their reasons to commit suicide, their ability to overcome such a situation. A rather timid approach of this kind appeared in an article written by Chen et al.[47] after they had described a study they had carried out related to the prevalence of suicide attempts, using five items of the BSRS-5: "when the BSRS-5 is used to assess elderly patients who have attempted suicide, it is desirable that a mental healthcare professional conducts the interview so as to verify if the elderly person still has suicidal thoughts". The authors suggest that the person who has tried to commit suicide has something to say about what is happening to him/her, regardless of the questions that a professional may ask them, which are based on their own technical points of reference. When one acknowledges that attempted suicide are related to life experiences involving relationships, disease, loss and other significant circumstances, it is worth considering that there is no one more capable of describing these events than the elderly person involved.

Another point worth mentioning is that, since most of the authors quoted in this study are associated with the fields of psychology and psychiatry, they generally pay little attention to matters related to social and micro-social experiences or to matters of context. Such experiences and contexts are usually only mentioned as a variable, which influences the end results. To immerse themselves only in the inner psychic conditions that lead to suicide attempts, would be the antithesis of the proposal put forward by Durkheim[80], for whom all social problems can only be understood through sociological analyses. This Durkheimian theory is long out-of-date, but there is still a risk of encountering its extreme opposite, which occurs when what happens only to an individual is greatly overvalued. This observation is not an intent to criticize epidemiological studies based on psychological and psychiatric matrixes. We merely wish to register an alert about the need to combine different research methods.

Final Considerations

Firstly, some of the limitations related to the current study are: the fact that the bibliography material that was studied is limited to the databases mentioned in the reviewing method; it was impossible to access all the cited articles in their entirety; and, the difficulties experienced by the present authors as regards their familiarity and understanding of the content and analyses related to a subject matter they have only recently began to research in depth. Even so, some conclusions and questions from the current study should be highlighted:

(1) The complex nature of the "suicide attempt" phenomenon among the elderly. Most of the articles emphasize how physical, neurobiological, medical, psychological and social issues are contributing factors in such cases. Most of these show that predetermining elements include: severe and degenerative diseases, physical dependence on others, mental disorders and suffering and, above all, chronic depression.

(2) There is no consensus of the relevance that each factor has in relation to the outcome of an attempted suicide. Most authors emphasize the role of depression, though there is still a good deal of controversy in many of their arguments. This disease is seen in its own symptomatology, or is associated with chronic physical suffering and the ending of life, or even social and cultural issues. According to May & Klonsky[78], the only motivations that can be considered as being universal are despair and unbearable emotional suffering.

(3) Gender differences should be considered when considering self-inflicted attempts to kill oneself. In accordance with all available universal knowledge, elderly women show a greater tendency towards suicidal ideation and make more attempts against their own lives; men tend to be more successful in concluding this final act. There are, of course, exceptions to this as shown by studies carried out among the populations in China, Japan and Singapore, where suicide attempts and consummated cases of suicide are high among both men and women. In a gradation of different age groups involving elderly people, in the case of those aged over eighty, the rate of suicide attempts went down among the women but increased among the men.

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(4) From the point of view of the role played by the public healthcare sector, several questions need to be considered. (1) There is a close relationship among the elderly between suicidal ideation, suicidal attempts and consummated acts of suicide. (2) Available literature shows that it is possible to prevent suicide by taking action relative to issues associated with suicide, which include providing social and psychological support, as well as medical assistance.

From a social viewpoint, it is important to ensure that an elderly person is not isolated or abandoned, so that they can spend their lives as part of their community and live with dignity until the end of their days. From a medical standpoint, it is crucial to give elderly people access to treatment that can reduce degenerative conditions, suffering and dependence on others. From at psychological point of view, proposals are urgently required to provide psychotherapeutic assistance, which focuses on an elderly person's strengths and possibilities, and which can be combined with psychiatric treatment. With regards to treatment involving medication, much still needs to be done to fully establish the effects of certain substances, as well as the effects of electroconvulsive therapies and to discover how these combine with one another and with certain psychotherapy practices. In order to do this, it would be well worthwhile investing more in training health professionals who can understand and diagnose the causes of suicide attempts and what can be done to help the elderly overcome their feelings of despair.

As highlighted at the beginning of this study, no article by a Brazilian author has yet been registered in the different international databases related to suicide attempts by elderly people. So, this study will be of great value to the Brazilian Unified Health System – SUS since it concerns an existing problem that is still not properly dealt with in the country. It is hoped that the current review may serve as a basis for empirical studies that can benefit from the information herein contained.

Collaborations

MCS Minayo and FG Cavalcante participated equally in all stages of preparation of the article.

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