

## Original Article

# Depression and Suicide in Third Age: A Systematic Review

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### Abstract

**Background:** Mental health is crucial for healthy aging, with depression significantly affecting the quality of life in older adults. Understanding the link between depression and suicidal ideation is essential for developing effective mental health interventions for this population.

**Objective:** This systematic review aimed to identify studies examining depression and suicide among individuals aged 65 and older, focusing on the methods used and key findings.

**Method:** The review covered research from 2011 to 2021, using PubMed and Google Scholar, and identified six relevant studies.

**Results:** The findings suggest that individuals aged 65 to 79 have higher suicidal ideation compared to those over 80. Additionally, higher educational attainment is associated with a lower likelihood of suicidal thoughts. The study found that factors such as gender, age, and health status do not significantly influence the relationship between depression symptoms and suicide. However, depression is strongly linked to increased suicide risk. Social support plays a critical role, with stronger social networks correlating with lower suicidal ideation, while suicidal thoughts were negatively associated with social participation. Social support acts as a mediator between depression and suicidal ideation.

**Conclusion:** This review highlights the importance of interventions aimed at reducing depression symptoms and enhancing social support among older adults. Strategies that promote social participation and encourage seeking help can reduce suicidal ideation and improve overall mental well-being. These findings suggest that comprehensive support strategies can enhance quality of life and reduce suicide risk in the elderly population.

**Key Words:** Depression, Third age, Review, Suicidal ideation, Mental health.

### Introduction

The mental health and well-being of people aged 65 years is one of the criteria for healthy ageing (World Health Organization, n.d.).

According to the World Health Organization (WHO), more than 15% of third age people have some form of mental disorder, with depression leading the way, reaching 7% (World Health Organization, 2017).

In the United States of America, approximately 5 million of the 31 million Americans aged 65 years and older are affected by depression, with clinically significant symptoms reaching 13% in people aged 80 years and older (Blazer, 2003). In Europe, around one in seven people aged 65 years and over are estimated to be affected by depression (Jongenelis et al., 2004). Moreover, in Mediterranean countries, such as Greece and Cyprus, a higher rate of depression is observed among women (Kok & Reynolds, n.d.; Kounti et al., 2007).

For elders, depression can be caused by many factors: genetic (Alexopoulos, 2005), biological (Pae et al., 2012; Gatz et al., 2001), psychosocial, such as adverse environmental conditions, loss of loved ones, financial difficulties, and poor interpersonal relationships (Blazer, 2003; Cacchione & Buchholz, 2008; Parmelee et al., 1990), and social characteristics such as gender, low educational level, and economic status (Blazer et al., 1991; Dong & Simon, 2010). In addition, personality traits such as neuroticism and dependent personality disorder contribute to the onset of depression (Fiske et al., 2009). Depressive disorders in elders are associated with suicidal behavior. Suicide rates in the elderly are higher compared to other age groups (Conwell & Duberstein, 2005). Depression has been identified as an important factor in suicidal behavior in older elders, as many studies have indicated that the majority of those who engaged in suicidal behavior suffered from major depression (Gable & Duberstein, 2016).

The purpose of this systematic review is to identify and present studies examining depression and suicide in third age (65 years and older), describing both the methods and assessment tools available and the main findings of these studies. The aim is to raise awareness among health professionals on this public health issue.

**Material- Method:** A systematic review was conducted for the years 2011-2021, using the PubMed database and the Google Scholar search engine, to identify studies investigating the relationship between depression and suicide in third age. The following keywords were used in the search: "elderly", "depression", "suicide",

"suicidal ideation", "primary health care", "older adults", "people 65 years old and over", "adults 65 years old and over". The literature search resulted in a total of 418 articles related to the topic under study. Of these, 248 were rejected after the first examination of the title. The remaining 170 articles were subjected to further evaluation by reading both the title and abstracts. Subsequently, 161 were rejected, resulting in 6 studies that met the criteria (see Figure 1). Of the rejected studies, some were on a different topic, different age groups (adolescents, adults under 65 years), and some were reviews.

**Characteristics of publications:** The selected publications that follow provide a diverse overview of research studies meeting specific criteria for inclusion. These six studies, conducted across various countries focus on depression and suicidal behavior in different populations. Of the six articles that met the criteria, three were published in 2019 (Aslan et al., 2019; Nakamura et al., 2019; Nam & Lee, 2019), one in 2016 (Gustavson et al., 2016), one in 2013 (Fiske et al., 2013), and one in 2011 (Sun et al., 2011). The studies were conducted in different countries: United States (Fiske et al., 2013; Gustavson et al., 2016), Korea (Nam & Lee, 2019), Turkey (Aslan et al., 2019), Japan (Nakamura et al., 2019), and China (Sun et al., 2011). The number of participants ranged from 50 (Fiske et al., 2013) to 135,294 (Nakamura et al., 2019). The six studies included in this systematic review examined depression and suicidal behavior as shown in Table 2.

## Results

### Data collection methods

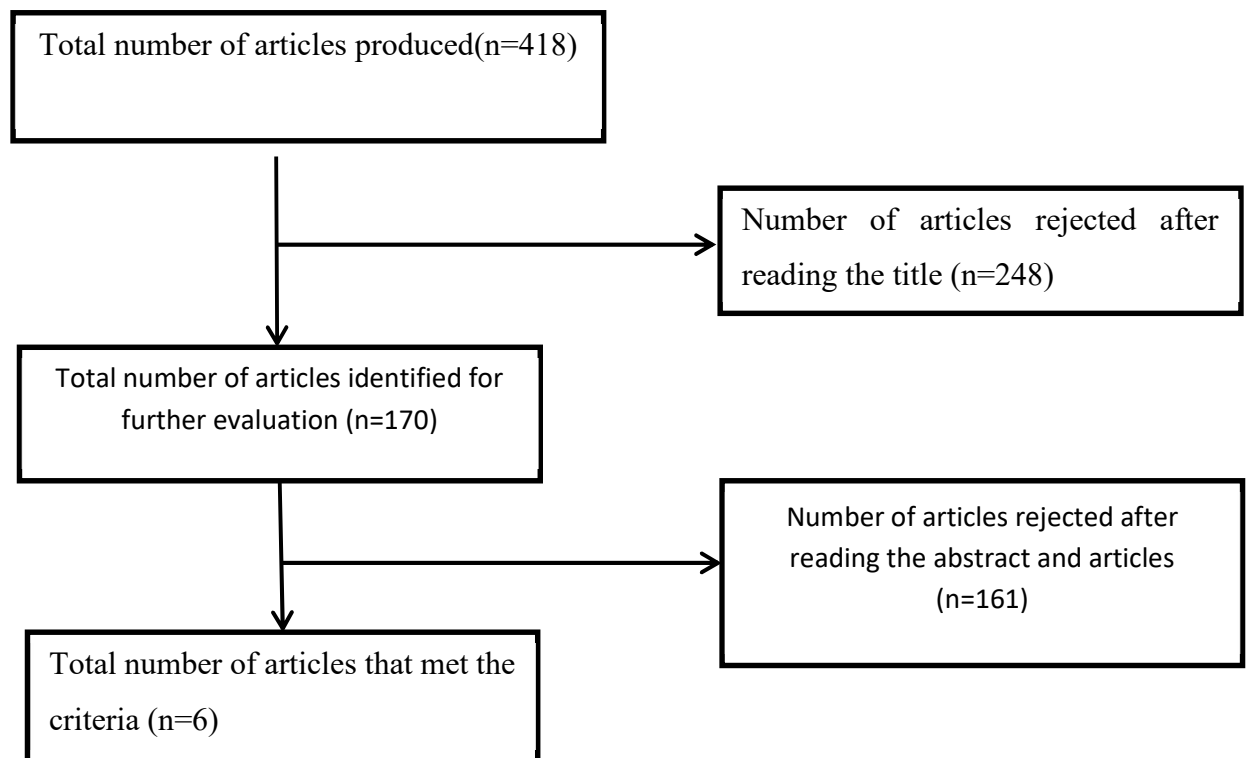
The inclusion and exclusion criteria are described in Table.

Initially, all studies in the current review included a demographic data form. All of them were quantitative studies (scales or questionnaires). Specifically, the questionnaire by Nakamura et al. (2019) was developed through a review of studies of existing literature and addressed long-term care needs as part of an assessment study in elderly care facilities in Japan in 2013.

**Table 1. Criteria for inclusion and exclusion**

Criteria for inclusion	Criteria for exclusion
Age: $\geq 65$ years old	Age: $< 65$ years old
English Language	Languages other than English
Publications: from 2011 to 2021	Publications before 2011
Any research designed	Systematic reviews and Meta-analyses

**Figure 1: Flow chart**



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Year/ Country	Purpose	Participants age	Data Collection Tools	Results
2019/ Turkey	Examination of the factors (socio-demographic and clinical characteristics) of suicidal ideation and causes of suicidal behaviour in the elderly	≥ 65 years old (n=150)	Geriatric Depression Scale Suicidal Ideation Scale) Beck Hopelessness scale - BHS	<p>A lower level of education was found in the group with suicidal ideation compared to the group without suicidal ideation</p> <p>Generalised anxiety disorder and depressive disorder comorbidity levels were found to be significantly higher in the suicidal ideation group</p> <p>Mean geriatric depression scale scores were higher in the group with suicidal ideation</p> <p>Those with moderate and higher levels of depressive symptoms showed an increase in suicidal ideation</p> <p>Hopelessness scale scores were higher in the suicidal ideation group</p> <p>Women's scores were higher than men's</p>
2019/ Japan	Clarifying the association between suicide rates on social capital and depressive symptoms among older adults	≥65 years old (n=135.294)	Questionnaire (developed by the research team for the purpose of the study)	<p>Male and female suicide was positively associated with depression and negatively associated with social participation</p> <p>Education, loneliness and depression were associated with male suicide</p> <p>Loneliness, poor financial situation and depression were associated with women's suicide</p>
2019/ Korea	Examining the relationship between depression and suicidal ideation in vulnerable elderly Koreans with hypertension living alone and exploring the mediating effect of social support on this relationship	≥65 years old (n=162)	Perceived Social Support Scale Geriatric Depression Scale Suicidal Ideation Scale	<p>Negative correlation between depression and social support</p> <p>Positive correlation of depression - suicidal ideation</p> <p>Negative correlation between social support and suicidal ideation</p> <p>Mediating social support in the relationship between depression and suicidal ideation</p>
2016/ United States of America (U.S.A)	Examining the de-efficacy of problem-solving therapy compared with supportive therapy in reducing suicidal ideation in older	≥65 years old (n=221)	Structured clinical interview Mattis Dementia Rating Scale-MDRS Hamilton Rating Scale for Depression-HAM-D	<p>Greater reduction in suicidal ideation in older people receiving problem-solving therapy compared with supportive care</p> <p>Unmarried people were less likely to show improvement in suicidal ideation</p>

	adults with major depression and executive dysfunction			<p>Disabled participants were more likely to show improvement in suicidal ideation</p> <p>Older participants with major depression and executive dysfunction had greater reductions in suicidal ideation</p> <p>Gender, ethnicity, age and cognitive load did not affect changes in suicidal ideation</p>
2013/ United States of America (U.S.A)	Examining control strategies, depressive symptoms and suicidality in older adults with health-related functional limitations	≥65 years old (n=50)	Geriatric Suicidal Ideation Scale (GSIS)	<p>Strategies to achieve goals either through persistent effort or by seeking help from others were associated with lower levels of suicidal ideation</p> <p>Patients who do not try to achieve their goals are at increased risk of suicidal ideation</p> <p>Participants who focused on social comparisons to achieve their goals reported more depressive symptoms</p>
2011/ China	Examination of the association between depressive symptoms and suicide in elderly Chinese	≥65 years old (n=55.946)	Geriatric Depression Scale	<p>Finding an association between depressive symptoms and suicide in the elderly</p> <p>Gender, age and health status do not affect the association between depressive symptoms and suicide</p> <p>The prevalence of depressive symptoms and mean geriatric depression scale scores were significantly higher in suicide cases compared to non-suicide cases</p>
2019/ Turkey	Examination of the factors (socio-demographic and clinical characteristics) of suicidal ideation and causes of suicidal behaviour in the elderly	≥ 65 years old (n=150)	Geriatric Depression Scale Suicidal Ideation Scale) Beck Hopelessness scale - BHS	<p>A lower level of education was found in the group with suicidal ideation compared to the group without suicidal ideation</p> <p>Generalised anxiety disorder and depressive disorder comorbidity levels were found to be significantly higher in the suicidal ideation group</p> <p>Mean geriatric depression scale scores were higher in the group with suicidal ideation</p> <p>Those with moderate and higher levels of depressive</p>

				<p>symptoms showed an increase in suicidal ideation</p> <p>Hopelessness scale scores were higher in the suicidal ideation group</p> <p>Women's scores were higher than men's</p>
2019/ Japan	Clarifying the association between suicide rates on social capital and depressive symptoms among older adults	≥65 years old (n=135.294)	Questionnaire (developed by the research team for the purpose of the study)	<p>Male and female suicide was positively associated with depression and negatively associated with social participation</p> <p>Education, loneliness and depression were associated with male suicide</p> <p>Loneliness, poor financial situation and depression were associated with women's suicide</p>
2019/ Korea	Examining the relationship between depression and suicidal ideation in vulnerable elderly Koreans with hypertension living alone and exploring the mediating effect of social support on this relationship	≥65 years old (n=162)	Perceived Social Support Scale Geriatric Depression Scale Suicidal Ideation Scale	<p>Negative correlation between depression and social support</p> <p>Positive correlation of depression - suicidal ideation</p> <p>Negative correlation between social support and suicidal ideation</p> <p>Mediating social support in the relationship between depression and suicidal ideation</p>
2016/ United States of America (U.S.A)	Examining the de-efficacy of problem-solving therapy compared with supportive therapy in reducing suicidal ideation in older adults with major depression and executive dysfunction	≥65 years old (n=221)	Structured clinical interview Mattis Dementia Rating Scale-MDRS Hamilton Rating Scale for Depression-HAM-D	<p>Greater reduction in suicidal ideation in older people receiving problem-solving therapy compared with supportive care</p> <p>Unmarried people were less likely to show improvement in suicidal ideation</p> <p>Disabled participants were more likely to show improvement in suicidal ideation</p> <p>Older participants with major depression and executive dysfunction had greater reductions in suicidal ideation</p> <p>Gender, ethnicity, age and cognitive load did not affect changes in suicidal ideation</p>
2013/ United States of America (U.S.A)	Examining control strategies, depressive	≥65 years old (n=50)	Geriatric Suicidal Ideation Scale (GSIS)	Strategies to achieve goals either through persistent effort or by seeking help from others were associated

	symptoms and suicidality in older adults with health-related functional limitations			<p>with lower levels of suicidal ideation</p> <p>Patients who do not try to achieve their goals are at increased risk of suicidal ideation</p> <p>Participants who focused on social comparisons to achieve their goals reported more depressive symptoms</p>
2011/ China	Examination of the association between depressive symptoms and suicide in elderly Chinese	≥65 years old (n=55,946)	Geriatric Depression Scale	<p>Finding an association between depressive symptoms and suicide in the elderly</p> <p>Gender, age and health status do not affect the association between depressive symptoms and suicide</p> <p>The prevalence of depressive symptoms and mean geriatric depression scale scores were significantly higher in suicide cases compared to non-suicide cases</p>

Data from the survey by Fiske et al. (2013) on Long-Term Care Needs, as well as from another 2013 Japanese survey on the elderly (JAGES), including the same thematic items as the Long-Term Care Needs survey.

The Geriatric Depression Scale (GDS-15) was used in three studies (Aslan et al., 2019; Nam & Lee, 2019; Sun et al., 2011). This scale is a psychometric test developed specifically for use with older people, capturing mood and emotions as well as possible symptoms of depression.

In addition, three studies (Aslan et al., 2019; Nam & Lee, 2019; Fiske et al., 2013) made use of the Suicidal Ideation Scale (KAI-4). The main purpose of this scale is to assess how often and to what extent the thought and desire to commit suicide occurs in individuals.

Another study (Pae et al., 2012) used the Beck Hopelessness Scale (BHS). This scale is a questionnaire in which the responders answered to a series of 20 'true' or 'false' statements, assessing their feelings about the future, assessing the likelihood of a person attempting suicide.

Also, in Nam & Lee's (2019) research, the Perceived Social Support Scale was used. The Perceived Social Support Scale (PSSS) is a

psychological assessment tool used to measure an individual's perception of social support from family, friends, and significant others. It evaluates how supported individuals feel in their social environments, often in relation to mental health and well-being outcomes. (Zimet et al., 1988)

In addition, in the study by Gustavson et al., (2016), the Hamilton Depression Scale and the Mattis Dementia Scale were used. The Hamilton Depression Scale, created in 1960, is an assessment tool designed to detect the severity of depressive symptoms in previously diagnosed patients and is also used to record changes in the patient's condition over time. On the other hand, the Mattis Dementia Scale was used as a tool to assess cognitive function in patients with dementia. It includes five subscales, each assessing different cognitive domains such as attention, initiation/attention, construction, conceptualization, and memory. Finally, in the study of Gustavson et al. (2016), in addition to quantitative scale there was also a structured interview which took place, allowing for an understanding of the experiences and opinions of the participants.

### **Findings from Published Research on the Association Between Depression and Suicide**

The main findings of the studies are presented in Table 2. Specifically, a negative correlation was observed between education level and the likelihood of suicidal ideation (Aslan et al., 2019). Also, a positive correlation between suicidal ideation and depression was highlighted (Aslan et al., 2019; Nam & Lee, 2019). Individuals without a spouse showed a higher probability of suicidal ideation compared to those who were married (Gustavson et al., 2016). In addition, mean scores on the geriatric and hopelessness scales were higher in participants with suicidal ideation (Aslan et al., 2019).

In terms of the correlation with social participation, there was a positive correlation between male and female suicide levels and depression, while there was a negative correlation with social participation. In addition, education, loneliness, and depression were associated with suicide in men, while loneliness, poor economic status, and depression were associated with suicide in women (Tamiya et al., 2014). A negative correlation was observed between depression and social support. However, importantly, social support appeared to mediate the relationship between depression and suicidal ideation (Aslan et al., 2019).

Subsequently, problem solving therapy was associated with a greater reduction in suicidal ideation in older people compared to treatment through support. In addition, in the same study, older adults with major depression and executive dysfunction due to health problems appeared to have a greater reduction in suicidal ideation. Gender, ethnicity, age, and cognitive burden did not affect changes in suicidal ideation (Gustavson et al., 2016).

In the study by Fiske et al., (2013), findings related to the strategies used by older people to achieve their goals were identified. Specifically, persistent effort or seeking help from others was associated with low levels of suicidal ideation. In contrast, individuals who do not try to achieve their goals show an increased risk of suicidal ideation, and participants who focus on social comparisons to achieve their goals report more depressive symptoms.

In addition, in the study by Sun et al., (2011), an association between depressive symptoms and suicide was observed in older adults. Gender, age, and health status did not seem to influence this association. However, it was observed that the prevalence of depressive symptoms and the

mean score on the geriatric depression scale were significantly higher in suicide cases compared to non-suicide cases.

**Conclusion:** This systematic review highlights the importance of prevention and the provision of psychosocial support to older people. Depression and suicide are directly linked to mental disorders, social exclusion, loneliness, and chronic health problems. In addition, abuse and poverty are linked to suicidal ideation.

Educating health professionals and raising their awareness of mental health issues in older people is crucial to prevent and treat depression in this population group. Health promotion in the community also plays a crucial role in strengthening social cohesion and supporting older people. Through the activation of local networks and partnerships, programs can be developed to encourage active participation of older people in social activities, fostering a sense of belonging and reducing isolation. At the same time, raising community awareness of mental health issues and creating support structures can make a significant contribution to improving quality of life. Finally, as the literature is still limited, it would be useful to carry out further studies, in particular studies examining the effectiveness of the proposed health promotion interventions.

To effectively address the mental health needs of older adults, the World Health Organization (WHO) emphasizes the importance of comprehensive health promotion strategies that foster social engagement and awareness. According to WHO guidelines, it is essential to educate healthcare providers about the specific mental health challenges faced by older populations, including depression and anxiety, as well as the importance of early detection and intervention (World Health Organization, 2017). Community-based initiatives should aim to enhance social cohesion by organizing activities that promote interaction among older adults, thereby reducing feelings of isolation and enhancing well-being. Additionally, the WHO advocates for the creation of supportive environments that include accessible mental health services and resources tailored to older adults (World Health Organization, 2016). Continued research is recommended to evaluate the effectiveness of these health promotion interventions, ensuring they meet the evolving needs of this demographic (World Health Organization, 2021).

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