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Research Article

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Socio-Demographic and Clinical-Psychological Factors of Suicide Attempts by Self-Poisoning in Old Age

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BACKGROUND The article presents statistics indicating an increase in suicide risks in old age in modern society, as well as research data on various risk factors in the elderly.

AIM OF THE STUDY Based on the analysis of existing studies, develop a set of validated methods that take into account the specifics of old age and are aimed at screening clinical and psychological factors of suicide risk.

MATERIAL AND METHODS The study involved 23 elderly patients who had attempted suicide by self-poisoning and were treated in the toxicology department of the N.V. Sklifosovsky Research Institute for Emergency Medicine. The data from testing a set of methods aimed at screening clinical and psychological factors of suicide risk are presented. within the framework of a pilot study.

RESULTS The importance of such risk factors for suicide in old age as depressive symptoms, decreased level of social support and subjective experience of loneliness was confirmed. The adequacy of the developed complex to the purpose of the study was demonstrated.

CONCLUSION The pilot study allows us to make a preliminary conclusion that among the factors of depression and suicide risk in old age, the subjective experience of loneliness plays a special role. It is necessary to continue the study on an expanded sample.

Keywords: old age, self-poisoning, suicide, psychosocial factors

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INTRODUCTION

The negative consequences of suicide for families and society as a whole necessitate a better understanding of the factors of suicidal behavior in order to prevent it and prevent repeated attempts. Currently, the proportion of elderly people is growing in all developed countries. This process is due to advances in healthcare, an increase in the standard and quality of life. All this leads to an increase in the average life expectancy of people, which today in developed countries is approaching 80 years [1]. However, in most countries, neither society nor the healthcare and social protection systems are ready for such a demographic shift [2].

Old age is associated with a whole range of unfavorable factors that can appear in different combinations: loss of professional status, change in roles in family and social relationships, increased loneliness, an increase in the number of somatic diseases, loss of loved ones, limited availability of entertainment, and deterioration of the financial situation [3]. Dependence on others in solving life's problems leads to the need to spend more time with strangers on whom care depends, which is an additional source of stress. These factors together form the so-called "cumulative effect of psychotraumatization" [4-6].

A separate unfavorable stress factor for older people is ageism, a set of prejudices. stereotypes, and the process of discrimination against people based on their chronological age. The concept of ageism was proposed more than half a century ago [7], and today this phenomenon is firmly rooted, especially in large cities, in the public consciousness and in the corporate culture and personnel policies of both modern business structures and government agencies. Ageism contributes to social isolation, decreased involvement in life processes, decreased physical activity, and deterioration of cognitive status and somatic health, and, ultimately, to an increase in economic burden [2].

Another cultural factor of the ill-being of the elderly, also characteristic of large cities, can be considered a gradual change in the structure of the family: a decrease in the closeness of intergenerational ties, the separation of young families and the isolated living of the older generation; increased labor mobility of the young, associated with remote forms of work; a tendency towards an increase in the age of childbearing, which reduces the natural involvement of the older generation in family affairs and deepens the gap between generations.

Research into the social problems of the elderly has emerged as a separate area in the last 20–30 years and has become especially active during the coronavirus pandemic, which has clearly demonstrated the vulnerability of the older generation [1, 2].

Old age is associated with an increased risk of developing depressive disorders. It is noted that, on the one hand, most patients complain of low mood, on the other hand, there are a number of problems in identifying depressive disorders and their treatment [8]. Firstly, a significant part of the somatic symptoms of depression in elderly patients are non-

specific manifestations: sleep disturbance, loss of appetite, distressing and painful sensations. The presence of chronic diseases also complicates the psychopathological qualification of these complaints. In elderly people, somatic symptoms of depression are similar to other chronic diseases, and mood changes are less distinct and are usually masked by physical discomfort (the so-called "somatic masks of depression"), which leads to difficulty in diagnosis and the lack of appropriate treatment. Depressive manifestations often include apathy, anhedonia, fatigue, sleep disturbance, pain and other somatic manifestations [9].

To diagnose depression in old age, specialized scales are used that take this into account, as well as possible cognitive impairment in patients (a simple yes-no response system for possible use in individuals with cognitive impairment) [10]. Geriatric depression scales consisting of 15 items (Geriatric *Depression Scale. GDS* -15, *Yesavage et al* ., 1982) and 9 items (Brief Depression *Severity Measure. BDSM*, *Kroenke et al* ., 2001) have been translated and adapted into Russian [11].

Depressive disorders are associated with an increased risk of suicide [12]. According to Rosstat, it is the elderly who account for the largest number of completed suicides - it increases sharply after 80 years and is more than 50 people per 100,000 population (Rosstat - *rosstat.gov.ru)*, and the number of suicide attempts is even significantly higher.

Analysis of existing studies [13–17] allows us to identify predictive factors for suicide in old age.

Socio-demographic: the risk group for suicide is widowed and divorced elderly people, especially men. The risk of committing a suicide attempt among widowed and divorced women does not differ significantly from those living in a family [18]. Living in a metropolis and living alone are also risk factors.

Clinical: the risk is primarily associated with the presence of depressive and other mental disorders. According to research, 71–95% of people who have completed suicide had a mental illness during their lifetime [18; 19]. The main predictor of a suicide attempt is the severity of depressive symptoms, the second most significant predictor is alcohol consumption in the amount of 3 or more drinks per day. This volume of consumption (and pathological dependence on alcohol) was noted in 35% of men and 18% of women with completed suicide, while in the comparison groups - only 2% and 1%, respectively - [18]. Research also indicates a high risk of repeated suicide attempts within 2–5 years - 42%.

Speaking about the severity of depressive symptoms as a predictor of suicide, it is important to note the high prevalence of these symptoms in general: in the population of patients over 60 years of age, 19.9% of men and 43.3% of women were found to have symptoms of depression during a screening study [20]. The high percentage of prevalence of depression, as well as the higher risk of completed suicide in elderly people, require special attention when planning the directions of screening diagnostics. A comprehensive suicide risk model, which includes, in addition to the severity of depression, a number of socio-demographic and clinical-psychological predictors, makes it possible to make such screening more targeted, oriented toward individuals with a history of depressive disorder. experience of previous suicide attempts, with severe physical illnesses, as well as socially isolated individuals [6].

The group of elderly patients with life-threatening diseases and severe pain syndrome requires special attention from medical personnel in terms of identifying suicidal tendencies, including direct questioning [21]. It is also important to understand that the presence of depression and suicidal tendencies in patients significantly reduces compliance and predicts a lower response to treatment.

The data on the role of cognitive impairment and dementia are contradictory. In most studies, they do not act as a significant factor in suicide, but during autopsy, manifestations of Alzheimer's disease are more common in people who died by suicide. It has also been shown that the cerebrospinal fluid of elderly people who died by suicide contains significantly lower concentrations of 5-hydroxyindoleacetic acid (a metabolite of serotonin) and homovanillic acid (a metabolite of adrenaline and noradrenaline) compared to the comparison group that did not commit suicidal acts. These

indicators indicate a decrease in the synthesis of neurotransmitters and alcohol consumption in the group of people who committed suicide [18].

Psychological: Older adults who die by suicide have higher levels of neuroticism and lower levels of openness to experience, restricted interests, and low comfort with acquaintances. There is an increase in stressful events in the weeks before the suicide. The nature of these stressors may differ in older adults, with greater emphasis on physical illnesses and losses such as bereavement and less emphasis on interpersonal discord, financial and employment problems, and legal difficulties; these last four factors are more often associated with suicide in younger populations. However, some recent studies have found an association between interpersonal discord and suicide even in later life. Protective factors include religiosity [18].

Reduced social support and social isolation are usually associated with increased suicidal tendencies in older people [18]. An important consequence of social isolation is loneliness. The phenomenon of loneliness has become the subject of close attention in modern psychological science. Different types of loneliness have been identified based on the nature of deficient connections: family, social, romantic [22]. An important distinction has also been made based on the objective (living alone, very narrow social network) or subjective (experiencing one's loneliness even in the presence of social connections) nature of loneliness. The importance of close relationships as a resource for mental health and a protective factor for depression has been proven in longitudinal studies [23, 24]. At the same time, very important and somewhat unexpected data concern the leading role of subjective or perceived loneliness for mental well-being. It turned out that perceived loneliness is a more important risk factor for mental and physical health than real isolation and a lack of social connections [25], that is, you can live in a family and feel completely misunderstood, unwanted and lonely (remember A.P. Chekhov's "A Boring Story"). The importance of close friendships for human health is emphasized by both foreign and domestic authors [26–30]. As we age, when close relatives and friends pass away, it is increasingly difficult to find a person with whom we can share our memories, feel a sense of community in the past and deep understanding. Such loneliness can turn into daily psychological stress, deprive any efforts of meaning and, ultimately, lead to depression. In this case, a person can use destructive strategies such as alcoholism (see above) to cope with mental pain.

Currently, there is a shortage of domestic works concerning the studies of risk factors for suicidal behavior in the elderly. A common method of suicide in the elderly is self-poisoning with drugs, in particular, hypotensive and psychotropic drugs. Frequent combined use of drugs from two or more pharmacological groups is noted, in which case the intoxication is more severe, the risk of death and the development of life-threatening complications is higher [31–33].

The aim of the study: to develop a methodological complex and conduct a pilot study of clinical and psychological risk factors for suicidal behavior through self-poisoning in a sample of elderly people who have attempted suicide.

MATERIAL AND METHODS

The developed methodological complex included 5 methods that were aimed at assessing the risk factors described in the various studies cited above:

To assess the severity of senile asthenia. use the "Age is not a hindrance" screening [34]. The scale includes 7 items describing the main manifestations of somatic asthenia, manifestations of cognitive decline and emotional distress.

To assess the severity of depressive symptoms - the Geriatric *Depression Scale* (*GDS* -15, *Yesavage J.A.*, *Brink T.L.*, *Rose T.L.*, *et al* ., 1982, adapted by O.N. Tkacheva et al., 2020).

To assess the severity of feelings of loneliness and social isolation - Loneliness *Scale* (*LS. de Jong Gierveld J.*, *van Tilburg T.G.*, 1999, as adapted by T.L. Kryukova, O.A. Ekimchik, 2013). The questionnaire includes 11 items grouped into two subscales: social loneliness, which reflects a real deficit of contacts; and emotional loneliness, which describes a subjective, emotionally painful experience of a deficit of closeness and communication.

To assess the subjective perception of social support - the Multidimensional Scale *of Perceived Social Support (MSPSS. Zimet et al ., 1988, adapted by V.M. Yaltonsky, N.A. Sirota, 1994). The scale includes 12 items and assesses the effectiveness and* adequacy of social support in three aspects - "family", "friends" and "significant others".

To assess stress coping strategies — the *Coping Orientation to Problems Experienced Inventory. COPE*, *C. Carver*, *M. Scheier*, *J. Weintraub*. 1989, adapted by T. O. Gordeeva, E. N. Osin, E. I. Rasskazova et al., 2010). The questionnaire consists of 28 items and is designed to assess the range of productive and unproductive coping strategies, including several types of avoidant coping, a tendency to use psychoactive substances, a tendency to turn to religion in stressful life situations, as well as a desire to rely on social support in its two forms - instrumental and emotional. This questionnaire consists of 14 scales. 1. Use of social support. 2. Use of psychoactive substances. 3. Religious coping. 4. Use of humor. 5. Focusing on and venting emotions. 6. Coping planning. 7. Acceptance. 8. Behavioural avoidance. 9. Inhibiting all other activities. 10. Active effort and personal growth. 11. Denial. 12. Self-restraint. 13. Positive redefinition. 14. Mental avoidance.

Before completing the psychodiagnostic tests, patients were interviewed to collect demographic information, discuss their life situation and the reasons for self-poisoning.

Surveyed sample

The pilot study of clinical and psychological risk factors for suicide included 23 patients from the toxicology department of the N.V. Sklifosovsky Research Institute for Emergency Medicine of the Moscow Health Department who were undergoing treatment after an episode of self-poisoning.

The group consisted of 18 women and 5 men, which is consistent with research data - women commit suicide attempts 4 times more often than men. The age of the patients ranged from 70 to 83 years (women) and from 60 to 70 years (men).

All patients were examined by a psychiatrist. Depressive episode (*F* 32) was diagnosed in 39% *(n=9) of the examined patients.* depressive reaction caused by adaptation disorder (*F 43.2) — in 22% (n = 5)* . There were also patients with schizophrenia spectrum disorders (*F* 20) — 17% (*n* = 4) and personality disorder (*F* 07; *F* 10) — 22% (*n* = 5). Alcohol dependence syndrome was officially diagnosed in 4 patients (17%), however, according to self-report data, 34% of patients abuse alcohol. In the attempt at self-poisoning, psychotropic drugs were mainly used (78%, *n* = 23). Among them were sleeping pills, sedatives (28%), antidepressants (28%), tranquilizers (28%), and slightly less often — neuroleptics (17%). There have been isolated examples of the use of antiepileptic drugs. Patients under psychiatric observation try to hide this fact during hospitalization. Most patients deny suicidal intentions when attempting self-poisoning and talk about accidental drug intake.

All patients were in the toxicological intensive care units and the acute poisoning treatment unit for mental patients of the N.V. Sklifosovsky Research Institute for Emergency Medicine in 2023–2024. The psychodiagnostic examination was conducted before discharge and consisted of patients filling out self-report psychodiagnostic tests together with a psychologist. Informed consent to participate in the study was signed with each patient in accordance with ethical standards. After the examination, the doctors discussed its results and gave recommendations.

RESEARCH RESULTS

1. Severity of senile asthenia

According to the screening data of "Age is not a hindrance", 86% of patients belong to the category of so-called "fragile patients" according to the criteria of this scale (*n* = 22), that is, these patients had 3 or more geriatric symptoms (Figure). The minimum number of geriatric symptoms (1-2) was noted only in three patients, who were classified, according to the methodological recommendations, as "pre-fragile". These three patients are women, relatively young (62-65 years old), who do not have severe concomitant pathology.

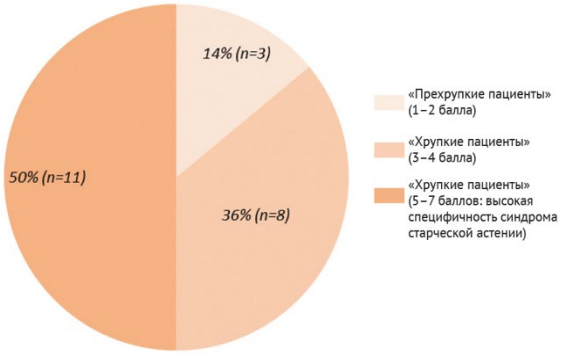

Figure. Distribution of patients by severity of geriatric symptoms of asthenia

Of the geriatric syndromes included in the list of the screening "Age is not a barrier", patients most often report the presence of chronic diseases (82%) and decreased emotional background (77%): during the last week they felt depressed, sad or anxious. More than half of patients (64%) note memory loss and have limitations associated with weakening of vision and hearing. The same percentage of patients report weight loss, which may be an indirect confirmation of a depressive state. Quite often, patients report injuries associated with falls and difficulties in moving (45%). Limitations in physical activity affect the quality of life of elderly patients and can be one of the factors in the chronicity of a depressive state.

2. Severity of depressive symptoms

According to the Gerontological Depression Scale, 81% of patients have probable symptoms of depression ($n = 21$). Of the symptoms included in the scale, patients most often complain of loss of strength and decreased activity level (77%), decreased emotional background (71%), loss of previous interests (67%). Half of the patients note anxiety about the future and hopelessness (52%), less often - boredom (33%).

The severity of depressive symptoms shows a correlation with age (Spearman correlation coefficient $r = 0.4$ – at the trend level, $p = 0.07$).

3. Severity of loneliness and quality of perceived social support

The social circle of patients is narrow, often limited to family, 43% of patients do not maintain relationships with friends at all, 52% do not communicate with neighbors, 61% do not maintain relationships with colleagues. Most patients (70%) live with one of the family members.

An analysis of the subscales of the social support questionnaire suggests that the categories of "family members" and "significant relatives" practically coincide in elderly patients. Satisfaction with the support from these categories of people in the immediate environment is similar. A significant proportion of patients (71%) are generally satisfied with the quantity and quality of support received from these sources. A different picture applies to the category of "friends" — half of the surveyed patients note a lack of this support, and it is this indicator that correlates with the emotional experience of loneliness (according to the *LS scale)* (Spearman correlation coefficient — $r = 0.85$, $p = 0.00$).

When analyzing the Loneliness scale, it is noteworthy that patients primarily complain about the narrowness of their social circle: "There are few people I can trust, lean on when I have difficulties," such formulations are chosen by 75% of respondents. Half of the patients note a feeling of emptiness, they often complain about a decrease in pleasure from communicating with other people (50%), which may be associated with a depressive state. It is noteworthy that, on the one hand, 90% of respondents note that they "have someone to share their daily problems with," and on the other hand, 40% of respondents say that they "lack a close friend."

The severity of depressive symptoms correlates with the general feeling of loneliness (Spearman correlation coefficient — $r = 0.514$, $p = 0.02$). Analysis of the subscales of the loneliness questionnaire shows that the severity of depressive experiences is associated with the features of the emotional, that is, subjective experience of loneliness (Spearman correlation coefficient — $r = 0.594$, $p = 0.006$), and the indicator of social loneliness, which reflects the actual limitation of contacts, is associated only with a deficit in perceived social support (Spearman correlation coefficient — $r = -0.76$, $p = 0.00$).

4. Coping strategies used

According to the questionnaire "Coping strategies with stress *Brief-COPE*", elderly patients

tend to use unproductive coping strategies: 95% of patients are prone to self-blame, which is one of the important symptoms of depression, 68% resort to venting emotions, 78% to self-distraction and 63% to denial as a coping method. All the identified coping strategies are strategies that do not involve active coping and processing of stressful events. All of them can be associated with social isolation, insufficient availability of support from loved ones (emotional, instrumental, etc.) and are risk factors for the development and chronification of depressive disorders.

DISCUSSION OF RESULTS

The results of a pilot study of psychosocial factors of suicidal behavior in the elderly are generally consistent with existing studies of the clinical picture and structure of suicide attempts, and also emphasize the role of psychosocial factors in the genesis of suicidal behavior.

As in most studies, women predominate in the sample examined. According to foreign data, elderly patients use benzodiazepines as a method of self-poisoning more often than middle-aged individuals, while the rates of poisoning with antidepressants and antipsychotics do not differ from those of middle-aged individuals [35]. In our study, patients used psychotropic drugs, tranquilizers and antidepressants were equally represented.

Among the clinical factors, the examined patients with attempted self-poisoning are distinguished by the presence of geriatric symptoms and symptoms of depression. During the initial survey, 70% of patients themselves complain of a bad mood. The data of psychodiagnostic scales indicate that they experience a feeling of guilt, an increased level of self-criticism, and a feeling of emptiness. In the scientific literature, elderly patients with depression are characterized as presenting complaints of a predominantly somatic nature (general poor physical condition, hypochondria, memory problems) with a relatively small proportion of the affective component (feelings of guilt, melancholy, etc.) [8]. In the sample examined in this study, the complaints of patients are of a slightly different nature: they clearly report a decrease in mood and generally present a “classic” picture of depression: with a depressed mood, loss of previous interests, and the experience of being a burden to loved ones.

Of particular importance are the data on social isolation and loneliness obtained in the present study. The role of loneliness as a factor in the development of depressive symptoms has been confirmed. It is especially important to emphasize the nonlinear picture of the relationship between available support and satisfaction in the sphere of communication. It has been shown that family support is available to one degree or another to more than half of the patients examined. At the same time, the factor associated with the severity of symptoms was not the deficit or unavailability of instrumental support from family members, but the lack of other interpersonal relationships that can be called "friendly". It is precisely such figures and communication with them that are lacking in the environment, and this factor is associated with a subjective, emotionally burdensome experience of loneliness.

The above-mentioned data confirm the thesis about the leading role of subjective, perceived loneliness, and not objective social isolation in mental ill-being [28]. The studies noted a “cascade” of biopsychosocial changes accompanying such an experience of loneliness in elderly people, including nutritional status disorders and neuroimmunoendocrine changes, in particular, a decrease in the production of anti-inflammatory cytokines [36]. These data once again emphasize the role of interpersonal factors in maintaining the quality of life and functional capacity, the formation of “healthy” aging.

It should be noted that the existing geriatric depression scales do not specifically test satisfaction in the sphere of communication, while, according to our and other data, it is precisely this that acts as a factor associated with the risk of depression and suicidal behavior. At the same time, effective diagnostic screening should be sensitive not only and not so much to the recording of an objective narrowing of the social circle and isolation, but to the subjective feeling associated with changes in the

content of the need for communication and the absence of figures in the environment - sources of "friendly" closeness and support .

Limitations of the study: the study is pilot in nature, an expansion of the sample and further analysis of factors of suicidal behavior in the elderly are needed in order to develop scientifically based recommendations for the prevention of suicidal behavior in the elderly.

CONCLUSIONS

1. The demographic shift (increased life expectancy), cultural changes (ageism, increased social disunity, changes in the institution of the family) are accompanied by a high level of emotional distress, depressive disorders and the highest number of suicides among the elderly. All this requires the development of approaches to maintaining the quality and satisfaction of life at the stage of gerontogenesis.

2. The developed methodological complex, including compact psychodiagnostic methods adapted for the elderly, allows us to identify significant risk factors for the development of depression and suicide risk - symptoms of depression, satisfaction with social support and the content of the experience of loneliness.

3. According to the study data, 81% of the examined elderly suicides have symptoms of depression. The severity of depressive symptoms correlates with subjectively experienced emotional loneliness (p = 0.006), which, in turn, is associated with a lack of support and communication with friends (p = 0.00). The complex of clinical and psychosocial factors identified in the study (the relationship between the severity of depressive symptoms and the severity of the subjective emotional experience of loneliness, lack of friendly communication) is the central target for diagnosing suicide risk.

4. The results of screening the identified factors can serve as a basis for short-term and crisis counseling of elderly patients and their relatives at the rehabilitation stage in an emergency hospital. An important focus of counseling is the interpersonal sphere (maintaining friendly contacts and social ties).

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