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Depressive Symptoms and Fear of Death in Older Adults: The Mediating Role of Perceived Social Support

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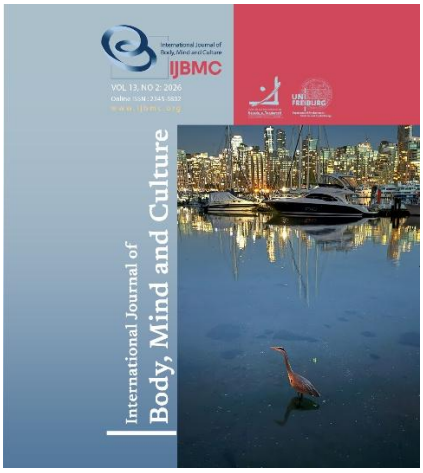

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ABSTRACT

Objective: This study tested a structural model of fear of death among older adults based on depressive symptoms, with perceived social support as a mediating variable.

Methods and Materials: This descriptive correlational study used a structural equation modeling approach. The study population included adults aged 65 years and older living in Tehran, Iran. A total of 410 participants were selected through multistage cluster sampling. Data were collected using the Beck Depression Inventory-II, Death Attitude Profile-Revised, and Multidimensional Scale of Perceived Social Support. Data were analyzed using SPSS-22 and SmartPLS.

Findings: Participants' mean age was 70.50 ± 4.38 years; 55% were men and 45% were women. The proposed model showed acceptable fit indices: SRMR = 0.069, NFI = 0.765, and GOF = 0.614. Depression had a significant positive direct effect on fear of death ($\beta = 0.417$, $p < 0.01$) and a significant negative effect on perceived social support ($\beta = -0.687$, $p < 0.01$). Perceived social support had a significant negative effect on fear of death ($\beta = -0.424$, $p < 0.01$). The indirect effect of depression on fear of death through perceived social support was significant ($\beta = 0.291$, $T = 7.584$, $p < 0.01$). The model explained 62.3% of the variance in fear of death.

Conclusion: Depressive symptoms increase fear of death among older adults, partly by reducing perceived social support. Strengthening social support may help reduce death-related fear in this population.

Keywords: Fear, Death, Depression, Social Support, Aged.

Introduction

Fear of death is one of the common problems related to psychological well-being in older adults. Older individuals may be more exposed to fear of death than their younger counterparts (Zhang et al., 2019). Death is closely associated with aging, because this stage of life physiologically prepares individuals to leave this world (Wolitzky-Taylor et al., 2010). Death is an inevitable aspect of life. As older adults approach it, they can easily experience anxiety, a reduced sense of security, and even intense fear. Death anxiety is a conscious or unconscious psychological state stemming from a defensive mechanism that may arise when individuals feel threatened by death (Zhang et al., 2019). Therefore, the higher prevalence of fear of death among older adults is due to the fact that they suffer from, or are vulnerable to, various physical problems, chronic conditions, impaired mobility, physical disabilities, greater dependence on others Nafei et al. (2024), major losses such as the death of a spouse, friends, and peers, and loneliness (Zahedi Bidgol et al., 2020).

Fear of death leads to adverse health outcomes such as reduced physical functioning, psychological stress, disturbance in ego integrity, weakening of religious beliefs, dissatisfaction with life, and diminished resilience. In addition, death anxiety may influence the effectiveness of treatment across a wide range of other disorders. Given the negative effects of fear of death on the psychological well-being of older adults, explaining fear of death in this group has been the subject of various studies. Research shows that people with a positive attitude toward life experience less fear of death (Iverach, 2018; Woods & Witte, 1981). In contrast, hopelessness Greenblatt-Kimron et al. (2021), low levels of perceived social support Adeeb et al. (2017), pessimism among older adults Barnett et al. (2018), and loneliness Chao et al. (2025) have been associated with higher levels of fear of death.

Depression is another psychological challenge frequently observed in older adults. Depression is a major mental health problem that has still not been fully recognized as a critical public-health issue. Approximately 322 million people worldwide suffer from depression (Dmitrieva, 2020). Depression is also one of the most common disorders among older adults. In this population, chronic diseases, limited mobility, bereavement, elder abuse, social withdrawal, and loss of income—alongside risk factors common to all age groups—are among the main risk factors for depression (Fiske et al., 2009). Depression in older adults may have diverse manifestations and can be difficult to diagnose (Organization, 2018). This disorder is associated with increased risk of illness, reduced physical, cognitive and social functioning, and greater self-neglect. Depression not only lowers quality of life, but also affects the prognosis of other chronic diseases, thereby further exacerbating disability (Dmitrieva, 2020). Consequently, older adults with depression have significantly higher mortality rates from both suicidal and non-suicidal causes (Aziz & Steffens, 2013). Findings from previous studies have shown that as the level of depression increases, death anxiety also increases (Abdel-Khalek, 1997; Khademi et al., 2025; Mystakidou et al., 2005; Yıldırım & Kocatepe, 2023).

Social support is another variable that can influence death anxiety in older adults. Social support is considered a key target in policy recommendations related to healthy aging (Organization, 2018). Social support is a broad concept that can be divided into family support, support from friends, community support, and support from colleagues. Social support, under any circumstances, has a positive effect on mental health (Lee et al., 2019). Empirical studies have demonstrated the importance of social support for the mental health of older adults (Ang & Malhotra, 2016). Thus, social support not only promotes positive subjective well-being, but also reduces negative subjective outcomes (Lee et al., 2019). The role of perceived social support in relation to fear of death has been somewhat inconsistent across studies. Some studies have reported a significant negative relationship between fear of death and social support , whereas other studies have found a positive correlation between fear of death and social support (Khalvati et al., 2021). From a theoretical standpoint, social support is expected to help reduce fear of death (Bibi & Khalid, 2020). Despite the importance of social support, its role as a mediating variable has received relatively little attention.

According to estimates by the World Health Organization, by 2050 older adults will constitute about 16% of the total world population, and this rate of population aging will be even higher in developing countries (Organization, 2018). The growing trend of

aging worldwide has made it increasingly necessary to attend to the issues faced by this age group. Due to their biological status, older adults experience numerous psychological problems. Depression (Byers & Yaffe, 2011; Nazari et al., 2024), anxiety Canuto et al. (2018) disorders Blay & Marinho (2012), and mood disorders Price & Drevets (2010) are among these problems. Older adults also experience the loss of close others through illness and bereavement, relocation due to increased family mobility, and restriction of social activities after children leave home and following retirement (Spence et al., 2020). In Iran, in 2016 the population over 60 years of age was 7,414,091 people, accounting for 9.3% of the total population, and it is predicted that by 2050 the proportion of older adults over 60 years will reach 31% (Shojaei et al., 2019). Considering the increasing trend of aging, issues related to the health and psychological well-being of older adults are becoming broader in scope (Sharifi et al., 2024). The multiplicity and diversity of the problems that people face in old age make it necessary to develop appropriate scientific models of the relationships among the various variables that affect the psychological state of older adults. Specifically, the present study focuses on a structural model that can predict or determine fear of death among older adults by considering the level of perceived social support as a mediating variable and depressive symptoms as an independent variable. Accordingly, the main question that this study seeks to answer is: What is the role of perceived social support in the relationship between attachment styles and depressive symptoms with fear of death among older adults?

Methods and Materials

Study Design

This study is a descriptive correlational research with a structural equation modeling approach. The statistical population consisted of all older adults aged 65 years and over residing in Tehran. Based on the most recent National Population and Housing Census conducted in 2016, all adults aged 65 and over living in Tehran numbered 733,823. This study was conducted in 2024, and the research data were collected between September to November 2024.

Since partial least squares structural equation modeling (PLS-SEM) was used in the present study, the conventional procedure for determining sample size in structural equation modeling was applied. Given that the methodology of structural equation modeling is largely similar to certain aspects of multivariate regression, the principles of sample size determination in multiple regression analysis can be used for SEM as well. From the perspective of Stevens (1995) and Kline (2023), even considering 15 observations per predictor variable in multiple regression with the ordinary least squares method can be regarded as a good rule of thumb. Thus, in the methodology of structural equation modeling, the required sample size can generally range from 5 to 15 observations per measured variable. Taking into account the limitations in data collection, and given that the statistical population of the present study consisted of older adults with a high probability of sample attrition, the sample size was set at 410 participants. The sampling method was multi-stage cluster sampling, conducted by sampling urban districts, then city blocks, and finally households residing in Tehran.

Instruments

Beck Depression Inventory–Second Edition (BDI-II): The Beck Depression Inventory was first developed in 1961 by Beck et al. (1996). In 1996, Beck and his colleagues carried out a major revision of the inventory to cover a wider range of symptoms and to align it more closely with the diagnostic criteria for depressive disorders in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). In this revised form, four items were changed to reflect symptoms associated with more severe depression (such as agitation, feelings of worthlessness, difficulty concentrating, and loss of energy). In addition, two items were revised to better represent reduced appetite and sleep. The wording of many other items was also modified. This scale is a 21-item self-report questionnaire that measures the severity of depressive symptoms. Items are scored on a 4-point scale from 0 to 3. Scores of 0–13 indicate minimal depression, 14–19 mild depression, 20–28 moderate depression, and 29–63 severe depression (Beck et al., 1996). Rahimi et al. (2020) assessed the reliability of the questionnaire using internal consistency and test–retest methods. Internal consistency, evaluated via Cronbach's alpha, was found to be 0.87.

Death Attitude Profile–Revised (DAP-R): The Death Attitude Profile–Revised was developed by Wong et al. (2019). This questionnaire is a 32-item scale that

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assesses five dimensions of attitudes toward death. These five dimensions reflect both positive attitudes (acceptance subscales) and negative attitudes (fear and avoidance subscales) toward death. The scores of the items belonging to each subscale are summed and then divided by the number of items, yielding a mean score for that subscale. Higher scores indicate greater acceptance, fear, or avoidance of death. Wong et al. (2019) reported internal consistency reliability (Cronbach's alpha) of the five subscales ranging from 0.97 for the active acceptance subscale to 0.65 for the neutral acceptance subscale. Test–retest reliability over a 4-week period ranged from 0.95 for the acceptance subscale to 0.61 for the avoidance subscale. In a study by Basharpoor and colleagues, face validity of the questionnaire was confirmed by three psychologists holding a PhD in psychology. Cronbach's alpha coefficients for the subscales ranged from 0.64 for the death avoidance subscale to 0.88 for the active acceptance of death subscale.

Multidimensional Scale of Perceived Social Support (MSPSS): The Multidimensional Scale of Perceived Social Support was developed in 1988 by (Zimet et al., 1988). The MSPSS is a 12-item instrument designed to assess perceived social support from three subscales: friends, family, and significant others. The aim of designing this scale was to measure the extent of perceived social support received from these three sources. Scoring on the MSPSS is based on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Thus, for each item, respondents obtain a score between 1 and 7. Besharat et al., (2014) validated this scale in Iran. Cronbach's alpha coefficients for the total scale and for the three subscales of family support, support from significant others, and support from friends were 0.91, 0.87, 0.83, and 0.89, respectively, confirming the internal consistency of the MSPSS (Besharat et al., 2014).

Procedure

In this study, after reviewing the literature and, based on the research problem and previous studies, the researcher specified the path for entering the field by developing the methodological framework of the study. Then, using standardized questionnaires, and after determining the sample size, conducting sampling, and making the necessary arrangements for fieldwork, the data were collected and a survey of the opinions of older adults in Tehran was carried out. After data collection, the data were analyzed using descriptive and inferential statistical methods, as well as the partial least squares method to test the model and report model fit indices.

Data Analysis

Before data analysis, the study variables were screened for potential coding errors, violations of statistical assumptions, missing values, and outliers. After replacing or removing inappropriate data using the listwise deletion method, the analyses were continued. First, the internal consistency of the instruments was examined by calculating the correlation of each item with the total score of the corresponding scale. Any item whose correlation with the total score of the instrument was less than 0.30 Ryff et al. (2016), or which did not load on the extracted factors of the original version in exploratory or confirmatory factor analysis, was removed from the final analyses.

Data analysis was conducted in two sections: descriptive and inferential. In the descriptive section, indices such as mean and standard deviation were used to examine the demographic characteristics of the participants. To test the research hypotheses, Pearson correlation, confirmatory factor analysis, and structural equation modeling were employed. Data were analyzed using SPSS-22 and SmartPLS software.

Findings and Results

Based on the reported results, 185 respondents were women (45% of the sample) and 226 were men (55% of the sample), and there were no invalid or missing data regarding respondents' gender. The minimum and maximum ages of the respondents were 65 and 85 years, respectively. The mean and standard deviation of age were 70.50 ± 4.383 years.

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Table 1

Descriptive statistics of respondents' scores on the study scales

Variable	Minimum	Maximum	Mean	Standard Deviation
Fear of death	7.00	49.00	32.4854	8.27114
Depression	21.00	63.00	40.6725	12.52247
Social support	12.00	60.00	38.5815	10.44685

The Fornell–Larcker criterion compares the square root of the AVE (Average Variance Extracted) with the correlations between latent variables. If the AVE of each latent variable is greater than the squared correlation of that variable with other latent variables, then there is adequate discriminant validity between the constructs. Given that in all cases the square root of AVE is greater than the correlation of each construct with other constructs, it can be confirmed that the research model has satisfactory discriminant validity. Based on the reported results, all components of the model possess the required validity (Table 2).

Table 2

Results of model validity (Fornell–Larcker criterion)

	Depression	Fear of death	Perceived social support
Depression	0.781		
Fear of death	0.739	0.789	
Perceived social support	-0.604	-0.754	0.817

The results shown in Table 3 indicate that the mediating effect of social support on the relationship between secure attachment style and fear of death (T = 3.316; $p < 0.01$) and on the relationship between avoidant attachment style and fear of death (T = 2.416; $p < 0.05$) was confirmed, whereas its effect on the relationship between ambivalent attachment style (T = 0.602; p = 0.547) and fear of death was not supported. In addition, the mediating effect of social support on the relationship between depression and fear of death (T = 7.584; $p < 0.01$) was also confirmed.

Table 3

Results of indirect paths

Path	Path coefficient (β)	T statistic	p value
Depression → Social support → Fear of death	0.0291	7.584	0.000

The results related to T values and significance levels for testing the direct hypotheses of the study showed that the effects of secure attachment style on perceived social support (T = 3.575; $p < 0.01$), avoidant attachment style on perceived social support (T = 2.252; $p < 0.05$), ambivalent attachment style on fear of death (T = 2.228; $p < 0.05$), depression on fear of death (T = 7.456; $p < 0.01$), depression on perceived social support (T = 20.735; $p < 0.01$), and perceived social support on fear of death (T = 8.171; $p < 0.01$) were all supported.

Table 4

Results of the effects of independent variables on the dependent variable

Path	Path coefficient (β)	T statistic	p value
Depression → Fear of death	0.417	7.456	0.000
Depression → Perceived social support	-0.687	20.735	0.000
Perceived social support → Fear of death	-0.424	8.171	0.000

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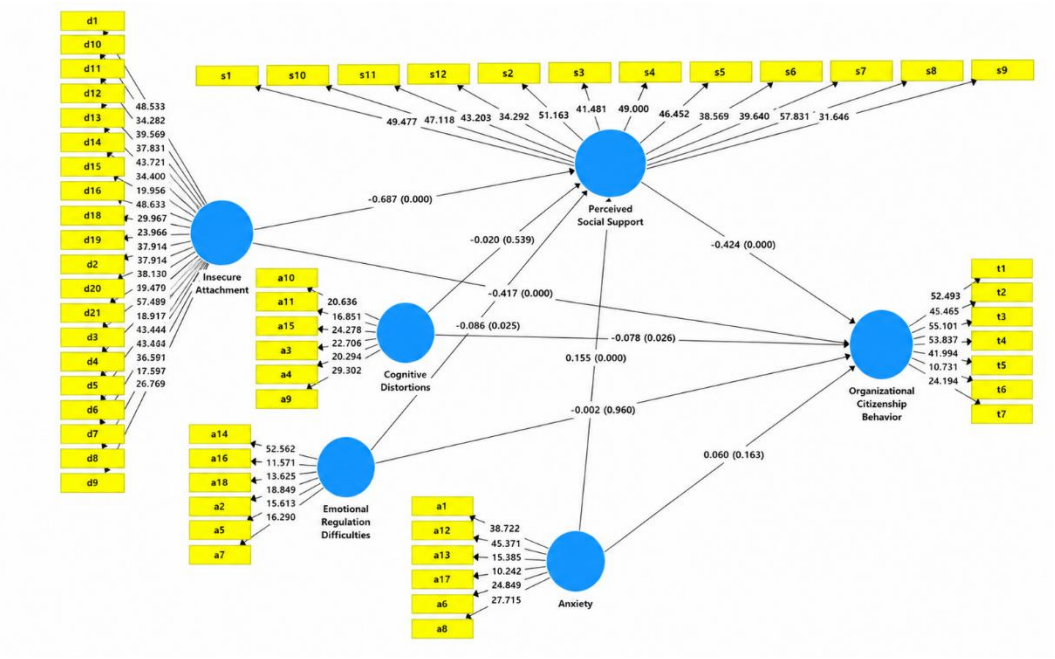

Figure 1

Model of the direct effects of variables in the structural model

The effects of secure and avoidant attachment styles on fear of death, and the effect of ambivalent attachment style on perceived social support, were not confirmed. Figure 1 presents the path coefficients and significance levels for the relationships between the study variables.

Furthermore, in Figure 2 the amount of explained variance for fear of death based on the other study variables is reported as 0.623, which indicates an appropriate level. This means that the proposed model explains 62.3% of the variance in fear of death.

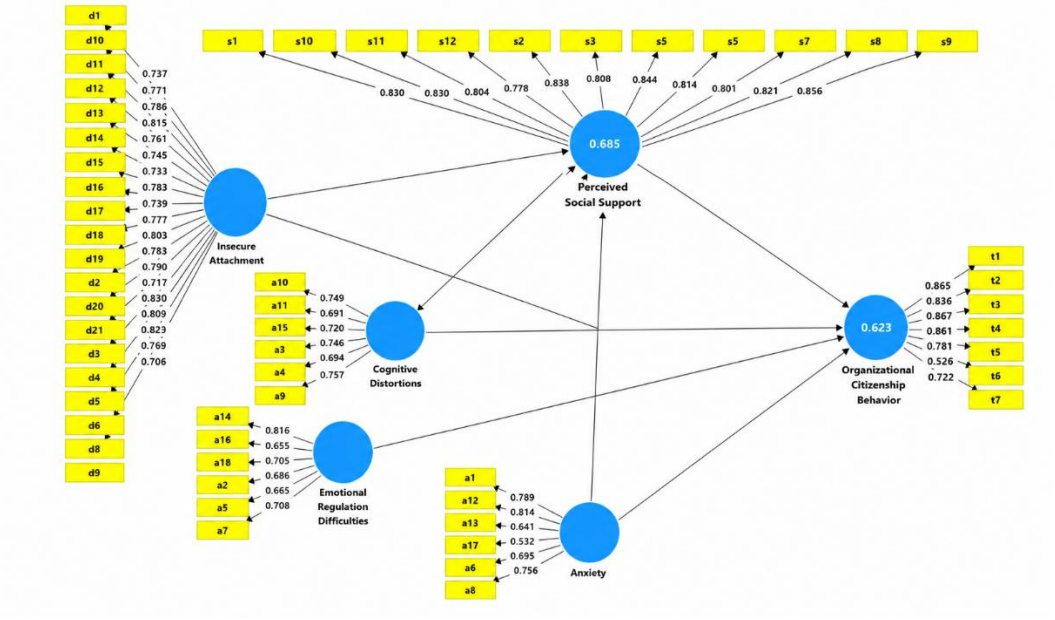

Figure 2

Explained variance (R^2) of fear of death based on the study variables

Discussion and Conclusion

The results showed that depression has a significant effect on fear of death, and that perceived social support is inversely related to fear of death and plays a mediating role in the relationship between depression and fear of death. Regarding depression, the findings of this study are consistent with those of Shaygan et al. (2025) and Yaghoobzadeh et al. (2022) who reported a positive association between depression and fear of death. Similarly, Ozdemir et al. 2(020) study confirmed the relationship between depression and death anxiety in postmenopausal women, although this relationship was stronger in an older adult sample. Altogether, these findings highlight that depression can be considered a risk factor for increased fear of death in older adults and underscore the need for targeted interventions to reduce depressive symptoms in this age group.

The mediating role of perceived social support in this study is in line with the findings of Şahin et al. (2019) and Zhou et al. (2024), which indicate that social support can reduce fear of death by strengthening psychological capital. In addition, Devi & Singh (2024) study emphasized the importance of family support in reducing death anxiety among older adults undergoing hemodialysis, a point that can be taken into account when designing intervention programs for older adults. Overall, based on the obtained findings, this study underscores the necessity of considering attachment styles, depression, and social support in designing psychological interventions for older adults. Researchers and practitioners are advised to pay particular attention to these factors in future studies and in planning for the mental health of the elderly population.

Sampling limitations are among the main challenges of any scientific research. In this study, sampling from the city of Tehran as a specific geographical and cultural area may negatively affect the generalizability of the results to other regions of Iran. As the capital and largest city of the country, Tehran has unique social, economic, and cultural characteristics that may differ significantly from those of other cities and regions. Therefore, the findings of this study cannot be easily generalized elsewhere, and the results should be interpreted and analyzed with caution. To enhance the validity and generalizability of the findings, future research could examine samples from other cities and diverse regions.

The use of self-report questionnaires is another important limitation of this study. Because such tools rely on individuals' personal responses, they are vulnerable to various biases. Participants may, for example, alter their responses due to social desirability, a desire to present a positive self-image, or inaccuracy in recalling information. These biases can substantially affect the accuracy and validity of the collected data and, consequently, influence the results of subsequent analyses. To reduce these effects, the use of complementary methods—such as in-depth interviews or observational data collection—can help increase the precision and validity of the findings.

Based on the findings of this study, which examined the relationships among attachment styles, depression, perceived social support, and fear of death in older adults, several practical recommendations can be made to help improve the mental health of this age group. The results indicated that perceived social support plays an important role in reducing fear of death and depression. Therefore, it is recommended that programs be designed to strengthen social networks and social support for older adults. Such programs may include forming social support groups, organizing social and recreational activities, and encouraging families to participate actively in the lives of their older members.

As two concrete examples to address the challenge of social isolation, it is proposed to establish "senior cafés" in neighborhoods, in collaboration with municipalities, as safe and low-cost spaces where older adults can gather, receive affordable services, and participate in weekly discussion groups on predefined topics (such as sharing memories or discussing concerns related to aging). Another recommendation is to recruit and train volunteers (including younger and healthier older adults) to conduct "regular weekly visits" to socially isolated seniors, and to provide "access to free telephone counseling" for urgent situations. Such initiatives can be implemented through cooperation with non-governmental organizations and by utilizing local resources, thereby reducing costs.

Given the cultural and social influences on the mental health of older adults, it is also recommended that intervention programs be designed with cultural and regional differences in mind. These programs should respond to the specific needs and values of each community and include activities that promote a culture of respect for older adults and emphasize the importance of supporting them. Finally, further research is suggested to examine the impact of psychological interventions on the mental health of older adults. Such studies could evaluate the effects of educational workshops, individual counseling, and group therapy on reducing depression and fear of death in this population. Additionally, investigating the long-term outcomes of these interventions on quality of life and mental health in older adults could provide valuable information for researchers and practitioners working in this field.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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