



Sehrish Tofique¹ & Anila Amber Malik²

^{1,2}Department of Psychology, University of Karachi

KEYWORDS	ABSTRACT
Suicidal Ideation, Older Adults	Background: Suicidal ideation among older adults is an important and under studied public health concern, particularly in low- and middle-income countries where mental health support services for older populations are insufficient. Despite the increased risk to social, psychological, and health-related stressors, there is limited evidence on the prevalence and correlates of suicidal ideation among older adults in Pakistan. This study aimed to determine the frequency of suicidal ideation and its sociodemographic correlates among older adults in Pakistan. Methods: A cross-sectional study was conducted among older adults aged 50 years and above. Participants completed a structured assessment of sociodemographic following the first five items of the Beck Scale for Suicide Ideation (BSI) to assess suicidal ideation. In this study, suicidal ideation was defined as a score of ≥ 1 on either Item 4 (desire for suicide) or Item 5 (desire to make a suicide attempt) on BSI. Descriptive analyses were conducted to determine the frequency of suicidal ideation and associated factors. Results: Among 497 older adults, 236 (47.5%) met the criteria for suicidal ideation, while 261 (52.5%) did not. Suicidal ideation was more frequently reported among older adults aged 50–59 years (58.6%) and among women (73.2%). Conclusion: Suicidal ideation was highly prevalent among older adults at community setting, highlighting the need for appropriate suicide prevention strategies for older adults. Routine assessment of suicidal thoughts within healthcare and community settings, alongside age and gender specific mental health support, may help facilitate early identification and prevention.
ARTICLE HISTORY Date of Submission: 09-07-2026 Date of Acceptance: 12-08-2026 Date of Publication: 18-08-2026	 2026 Journal of Social Sciences Development
Corresponding Author	Sehrish Tofique
Email:	sehrish.tofique@pill.org.pk
DOI	https://doi.org/10.59075/jssd.v5i6.290
Volume/Issue	5(6), 2026, 147-156

Introduction

Suicide is a global health crisis with the leading cause of death. According to the World Health Organisation (WHO), every 40 seconds someone in the world loses their life to suicide (WHO,

2025). Annually around 7,27,000 people die, and considerably more than that attempt it. Low- and middle-income countries (LMICs) account for 84% of the global population with the highest rate of complete suicide. Though suicide death rates have decreased gradually in last 20 years, the older generations remain as the most vulnerable group (WHO, 2025). According to global health estimates report (2021) one sixth of the world's suicide death occurs among older adults. However, the appropriate fact and figures on suicide, self-harm or suicidal ideation from LMICs like Pakistan is still not available.

Mental health problems play a significant role in rising rates of suicidal behaviours as older adults are affected by functional or social limitations, past life experiences, and stressors playing a key role in causing psychological distress. Other factors such as loss of loved ones, financial dependency and loss of purpose in life also contribute to mental health issues and reduced quality of life. According to WHO reports (WHO, 2025), one fourth of older adults are in distress due to feelings of loneliness and social isolation, and those with a high level of distress and depression are at greater risk for suicidal thoughts and attempts compared to non-depressed older adults. Moreover, older adults with chronic illnesses such as cardiovascular disease, cancer, dementia, stroke are at an increased risk of anxiety and depression (Palmese et al., 2025; Read et al., 2017).

In addition to suicide attempts, suicidal ideation is also amongst the strong risk factors for death by suicide (Bickford et al., 2020). The vicious cycle starts with a triggering event, the thought or suicidal ideation, which leads to a plan, and then an attempt to end one's life. As the global population is rapidly aging, the prevalence of older adults is expected to double (2.1 billion) in 2050, representing one fifth of the global population. Recent advancement in research has highlighted the need for advanced methods for prediction of self-harm and prevention (Kabir et al., 2025). However, studies on frequency of suicidal ideation, which is a preventable cause of death among all age group, is limited particularly the evidence from community settings as most people with suicidal ideation don't report to hospitals, we categorize these individuals as the "unseen portion of the iceberg". Therefore, this study aims to determine the frequency of suicidal ideation among older adults in community settings. This will help in designing future trials of preventive interventions for this vulnerable group.

Primary Objective

- To determine the frequency of suicidal ideation in older adults in community settings in Pakistan.

Secondary objectives

- To determine the association between gender and suicidal ideation in older adults.
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- To compare the mean age of older adults with and without suicidal ideation.

Methodology

Design: A multicenter, cross-sectional study to assess the frequency of suicidal ideation among older adults in community settings in Pakistan.

Study Setting: The data was collected from Karachi, Pakistan from 2024-2025.

Study participants:

Inclusion criteria

- Adults aged **50 years or above**
- Able to provide informed consent
- Able to communicate in Urdu or the local language

Exclusion criteria

- Limitations in speech, hearing or cognitive decline preventing communication

Sample size

Since frequency of suicidal ideation was not known in the older-adults population in Pakistan, the anticipated frequency of 50% was used to determine the sample size with a 95% confidence level with an 5% of absolute precision and 20% non-response rate. The sample size with that came out to be around 497.

Sampling technique

Purposive sampling was used to identify eligible participants for the study.

Recruitment

Trained research assistants and community workers screened potential participants from the community settings through medical camps, awareness raising events and already established contacts in the community. All the eligible participants were provided with an information leaflet which included details about the purpose of the project, participation details, right to withdraw etc. Those who agreed were screened against the study eligibility checklist. All eligible participants provided written informed consent. Verbal consent was obtained from those who were unable to read and write in the presence of trusted members from the same community. All eligible and consented participants completed study questionnaires described below.

Data Collection

Assessment questionnaires

1: Demographic Form: Includes brief information around name , age, gender, home address.

2: Beck Scale for Suicidals Ideation. 21-item questionnaire used to assess the suicidal thoughts.

The first 5 items of BSI used as a screening items and assess “wish to live”, wish to die”, “reasons for living and dying”, “active desire to make suicide attempt” and “passive desire”. Each item scored from 0-2, higher rating indicates suicidal thoughts severity. In this study, participants with suicidal ideation were defined as anyone who scored 1 or above on item 4 or item 5.

Data was collected using the paper copies. Assessments were administered by the researchers.

Ethical considerations

Ethical approval was obtained from the National Bioethics Committee (NBC-674).

Statistical Analysis:

Data entered and were analyzed using IBM SPSS Statistics version 25. For participants demographic characteristics descriptive analysis were used. A frequency of suicidal ideation was assessed as the number of participants meeting the predefined suicidal ideation criteria. Chi-square test was used to examined the association between participants characteristics and suicidal ideation. An independent sample t-test was used to check the difference between age and suicidal ideation. A p-value <0.05 was considered as statistically significant.

Results

A total of 538 people were successfully approached and 497 completed the study questionnaires.

Sample Characteristics

The total sample comprised N = 497 participants. As shown in Table 1, the majority of participants were female (n = 364; 73.2%), while males accounted for approximately one-quarter of the sample (n = 133; 26.8%).

Table 1: Frequency Distribution of Participants by Gender (N = 497)

	n	%
Male	133	26.8
Female	364	73.2

Note. SI = suicidal ideation. Percentages may not sum to 100 due to rounding.

Table 2 presents the distribution of participants across age categories. The sample predominantly comprised adults in middle and older age, with the largest proportion falling within the 50-59 years group ($n = 291$, 58.6%), followed by the 60-69 years group ($n = 145$, 29.2%). A further 10.7% of participants were aged 70-79 years ($n = 53$). Older age groups were substantially less represented, with 1.6% aged 80-89 years ($n = 8$). A small proportion (0.4%, $n = 8$) fell within the 80-89 years range, indicating that the sample skewed toward middle to older adulthood.

Table 2: Frequency Distribution of Participants by Age Category (N = 497)

Age group (years)	N	%
50-59	291	58.6
60-69	145	29.2
70-79	53	10.7
80-89	8	1.6

Note. Age categories reflect groupings used in the original data collection protocol.

Frequency of Suicidal Ideation

The frequency of suicidal ideation was assessed using Items 4 and 5 of the Beck Scale for Suicidal Ideation (BSI). Participants scoring ≥ 1 on either item were classified as endorsing suicidal ideation, reflecting an active or passive desire to end life in the preceding two weeks. As presented in Table 3, a total of 236 participants (47.5%) met this criterion, indicating a notably high frequency of suicidal ideation in the present sample. The remaining 261 participants (52.5%) did not endorse suicidal ideation.

Table 3: Frequency of Suicidal Ideation Based on BSI Items 4 and 5 (N = 497)

Suicidal ideation (BSI Items 4 & 5 ≥ 1)	n	%	Valid %	Cumulative %
No	261	52.5	52.5	52.5
Yes	236	47.5	47.5	100.0

Note. Suicidal ideation was defined as a score of ≥ 1 on BSI Item 4 (thoughts of ending life) or Item 5 (thoughts of self-harm) within the past two weeks. BSI = Brief Symptom Inventory; SI = suicidal ideation.

Association Between Age and Suicidal Ideation

A chi-square test of independence was conducted to examine the association between age category and suicidal ideation. Table 4 presents the cross-tabulation of age groups by suicidal ideation status. The highest proportion of suicidal ideation was observed in the 50-59 years age group, with 47.1% of individuals in this category endorsing suicidal ideation ($n = 137$). The 60-69

years group also showed substantial rates of suicidal ideation (49.0%, $n = 71$). Suicidal ideation appeared lower among the oldest age groups, with 45.3% in the 70-79 years group ($n = 24$) and 50.0% in the 80-89 years group ($n = 4$), though the latter groups were very small in number and results should be interpreted with caution.

The chi-square test of independence revealed no statistically significant association between age category and suicidal ideation, $\chi^2 (3, N = 497) = .27, p = .96$. The linear-by-linear association was also non-significant, $\chi^2 (1) = 0.03, p = .96$, suggesting no linear trend in suicidal ideation across age categories. It should be noted that two cells (25.0%) had expected counts less than 5, which may limit the reliability of the chi-square statistic for the oldest age groups (70-79 and 80-89 years).

Table 4: Cross-Tabulation of Age Category and Suicidal Ideation, with Chi-Square Statistics (N = 497)

Age group (years)	No SI n	SI n	Total n	No SI %	SI %	Total %
50-59	154	137	291	52.9	47.1	100.0
60-69	74	71	145	51.0	49.0	100.0
70-79	29	24	53	54.7	45.3	100.0
80-89	4	4	8	50.0	50.0	100.0
Total	261	236	497	52.5	47.5	100.0

Test	χ^2	df	P
Pearson Chi-Square	.270	3	.96
Likelihood Ratio	.270	3	.96
Linear-by-Linear Association	.003	1	.960

Note. SI = suicidal ideation, defined as a score of ≥ 1 on BSI Items 4 or 5. Two cells (25.0%) had an expected count less than 5; minimum expected count = 3.80. Percentage columns reflect row percentages (% within age group).

Association between Gender and Suicidal Ideation

A chi-square test of independence was conducted to examine whether suicidal ideation differed by gender. As shown in Table 5, the proportion of females endorsing suicidal ideation (50.3%, $n = 183$) was notably higher than that of males (39.8%, $n = 53$). Females also constituted a substantially greater proportion of those with suicidal ideation overall (77.5% of all participants endorsing SI were female).

The Pearson chi-square test indicated a statistically significant association between gender and suicidal ideation, $\chi^2(1, N = 497) = 4.25, p = .039$. Fisher's Exact Test confirmed this finding (exact $p = .043$, one-tailed $p = .025$), which is the preferred statistic for 2×2 tables. The continuity-corrected chi-square (Yates' correction) was borderline significant, $\chi^2(1) = 3.84, p = .050$. Taken together, these results indicate that females in this sample were significantly more likely to endorse suicidal ideation compared to males. All expected cell counts exceeded 5 (minimum = 63.15), satisfying the assumptions of the chi-square test.

Table 5: Cross-Tabulation of Gender and Suicidal Ideation, with Chi-Square Statistics (N = 497)

Gender	No SI n	SI n	Total n	No SI %	SI %	Total %
Male	80	53	133	60.2	39.8	100.0
Female	181	183	364	49.7	50.3	100.0
Total	261	236	497	52.5	47.5	100.0

Test	χ^2	df	P	Exact p (2-sided)	Exact p (1-sided)
Pearson Chi-Square	4.25	1	.039		
Continuity Correction	3.84	1	.050		
Likelihood Ratio	4.27	1	.039		
Fisher's Exact Test				.043	.025
Linear-by-Linear Association	4.24	1	.040		

Note. SI = suicidal ideation, defined as a score of ≥ 1 on BSI Items 4 or 5. All expected cell counts exceeded 5; minimum expected count = 63.15. Continuity correction (Yates') applied for the 2×2 table. Percentage columns reflect row percentages (% within gender). * $p < .05$.

In summary, the findings reveal a high overall frequency of suicidal ideation in this sample of older adults, with nearly half of participants (47.5%) endorsing active or passive thoughts of ending their life in the preceding two weeks. Age was not significantly associated with suicidal ideation ($p = .479$), with rates broadly comparable across age groups, though the 50–59 years cohort showed the highest proportion. In contrast, gender was significantly associated with suicidal ideation ($p = .043$), with females demonstrating substantially higher rates (50.3%) compared to males (39.8%). These findings underscore the importance of gender-sensitive screening approaches in older adult mental health services.

Discussion

The results indicate highest frequency of suicidal ideation among the ages of 50–59 years. This finding highlights that individuals in the transition phase of older adulthood may be more

vulnerable to physical and psychological distress as compared to the younger old adults. Changes in roles, financial dependency, deteriorating physical health, and retirement may lead to distress and the risk of suicidal thoughts. Similar findings have been reported in other studies highlighting the impact of age-related transitions and bio-psycho-social factors on the risks of suicidal thoughts among the older population.

However, findings from the recent global systematic review and meta-analysis, show that the highest suicidal ideation among older adults are at ages 80 and above (Bai et al., 2026). In contrast, our study found that suicidal ideation is more prevalent in the age group 50–59. This difference may be accounted for by the age distribution of participants, as the number of participants for this age group was at the lower end. Moreover, as per reports in Pakistan the average life expectancy is 68.2 years with a 0.21% increase since 2024 with men at 65.3 years and women at 70.2 years (*Life Expectancy Pakistan*, 2026).

Another finding highlighted in the results is that female older adults, compared to males, are more vulnerable for suicidal ideation. This finding aligned with other published studies including the recently published systematic review and meta analysis (Bai et al., 2026) that shows high prevalence among older women specifically in Asian and LMIC countries. Furthermore, this finding is linked with evidence, reflecting higher rates of mental health issues among women (WHO, 2024) such as depression, anxiety, psychological distress and loneliness, all factors of suicidal thoughts. Generally, women are more likely to seek help for emotional distress (Liddon et al., 2018; Oliver et al., 2005) and report suicidal ideation, whereas men, despite high rates of suicides, are less likely to disclose or express their stressors (Richardson et al., 2023).

Pakistan's socio-cultural factors also contribute to these findings. Older women may often experience multiple psychosocial stressors, including financial dependency, loneliness, reduced autonomy, lack of family support and limited access to mental health services (Sameen et al., 2026). Evidence from Pakistan suggests that family relationships, social connectedness and social support are significant determinants for psychological well-being among older adults, which suggests that these sociocultural factors may increase vulnerability to psychological distress and suicidal ideation (Tariq et al., 2023).

Thus, these findings have significant implications in developing suicide prevention strategies for older adults. Routine screening at a primary health care level, geriatric as well as other clinics particularly for women with age bracket 50–59 should be considered as a first line of prevention. Risk factors of suicidal ideation such as depression, physical limitation and disturbed relationships should be taken into consideration. Early identification of vulnerable adults through a comprehensive assessment, psychoeducation to reduce stigma attached with seeking mental health service, and community-based support programs may facilitate the suicide prevention initiative, reduce the disease burden, and improve wellbeing of older adults.

Strengths and limitations

- One of the main strengths of this study is that, to our knowledge, it is the first community-based study from Pakistan to examine the frequency of suicidal ideation among older adults.
- The use of a standardized and validated measure, the first five items of the Beck Scale for Suicide Ideation, enhances the reliability and comparability of the findings.
- Furthermore, recruiting participants from one of the major metropolitan cities of Pakistan with diverse ethnic backgrounds improves the geographic diversity of the sample and increases the potential generalisability of the findings to urban community-dwelling older adults.

This study also has several limitations.

- The cross-sectional design limits the ability to establish temporal or causal relationships between participant characteristics and suicidal ideation.
- The relatively brief data collection, consisting of a demographic questionnaire and the first five items of the Beck Scale for Suicide Ideation, did not allow for the assessment of important factors such as depression, anxiety, physical comorbidities, social support, loneliness, functional impairment, or life stressors that may influence suicidal ideation.
- Although participants were recruited from three geographically diverse cities, the findings may not be generalisable to older adults living in rural areas or other regions of Pakistan.

Conclusion

This study provides the first community-based evidence on the frequency of suicidal ideation among older adults in Pakistan. The findings show that suicidal thoughts are present among community-dwelling older adults and highlight the need for greater attention to suicide prevention in this growing population. Future research needs to investigate the social, psychological, and physical determinants of suicidal ideation among older adults using more comprehensive assessments and longitudinal designs to inform culturally appropriate intervention strategies for prevention.

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