



Exploring Gender Variations in Help-Seeking and Stigma in Major Depressive Disorder: Findings from the FASA Cohort Study

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Abstract

Introduction: Major depressive disorder (MDD) is strongly associated with suicidal ideation and significant help-seeking barriers, particularly in rural populations. This study examined MDD prevalence, help-seeking attitudes, and suicidal ideation among rural Iranian youth aged 15-34 years.

Methods: This cross-sectional study included 2,923 participants from the Fasa Youth Cohort in rural Iran. MDD was assessed using the Composite International Diagnostic Interview (CIDI) 2.1. Help-seeking attitudes and suicidal ideation were evaluated using validated questionnaires. Logistic regression analyses examined associations between MDD, help-seeking attitudes, and suicidality, stratified by gender.

Results: MDD prevalence was 26.2%, with significantly higher rates in males (30.4%) than females (20.5%, $P < 0.001$). Men with MDD showed increased willingness to seek help (adjusted OR = 1.64, 95% CI: 1.15-2.24, $P = 0.005$), while women with MDD experienced greater embarrassment about using services. MDD was strongly associated with suicidal outcomes, with adjusted odds ratios ranging from 4.40 for thoughts about death to 7.28 for suicide attempts. Associations were consistently stronger in females. Paradoxically, individuals with suicidal ideation demonstrated reduced help-seeking intentions and increased stigma concerns.

Conclusion: Rural Iranian youth exhibit high MDD prevalence with gender-specific patterns. The help-negation paradox among individuals with suicidal ideation represents a critical treatment gap requiring targeted, culturally adapted interventions addressing stigma and improving access to mental health services.

Keywords: Major depressive disorder, Help-seeking behaviors, Social stigma, Suicidal ideations

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Introduction

Major depressive disorder (MDD) represents a leading cause of disability worldwide, contributing substantially to the global burden of disease (1). According to the Global Burden of Disease Study 2021, depressive disorders account for the largest proportion of mental disorder disability-adjusted life years (37.3%), affecting over 290 million individuals globally (2). The prevalence of

MDD demonstrates significant temporal increases, with an estimated 59% rise in new cases from 1990 to 2019, highlighting the growing magnitude of this public health challenge (3). Cross-national epidemiological studies indicate that the average lifetime prevalence of MDD is 7.5% in males and 13.6% in females, with projected cumulative lifetime risk by the age of 75 years reaching 20.1% in males and 34.0% in females (4). The burden is



particularly pronounced among youth and young adults, with evidence suggesting that approximately one in five adolescents globally experiences depressive symptoms, a proportion that continues to increase over time (5).

A particularly concerning aspect of MDD is its strong association with suicidal ideation and attempts. Patients with depressive disorders demonstrate markedly elevated risk for suicidality across all stages, from ideation to completed suicide, with MDD accounting for up to 87% of suicide deaths (6). Recent meta-analyses have documented that individuals with MDD show 2.88 to 4.56 times higher odds of suicidal ideation and 3.45 to 7.34 times higher odds of suicide attempts compared to non-depressed individuals (7). Clinical predictors within depressive disorders, including severity of hopelessness, history of previous attempts, severe depression, and psychotic symptoms, significantly increase the risk of subsequent suicide attempts and death (8). The progression from suicidal ideation to attempt is well-documented, with approximately 16.6% of patients with MDD and suicidal ideation progressing to suicide attempts (9). These findings underscore the critical importance of early identification and intervention for individuals experiencing depressive symptoms, particularly those with concurrent suicidal thoughts.

Despite the availability of effective treatments for MDD, substantial barriers to help-seeking persist globally. Stigma represents one of the most significant deterrents to accessing mental health services, manifesting as public stigma, perceived stigma, and self-stigma (10). Systematic reviews have documented that stigma exhibits small to moderate negative effects on help-seeking behavior, with disclosure concerns consistently reported as the most prominent barrier (11, 12). More than 70% of individuals with mental illness globally receive no treatment from healthcare professionals, with factors including lack of mental health knowledge, prejudice against people with mental disorders, and expectations of discrimination contributing to treatment avoidance (13, 14). The impact of stigma extends beyond individual attitudes, encompassing structural barriers such as inadequate mental health literacy, limited awareness of available services, and fear of social judgment. These barriers are particularly pronounced in certain populations, including ethnic minorities, youth, men, and individuals in military and health professions, who face disproportionate deterrence from seeking care due to stigma-related concerns (15).

Gender differences in depression prevalence, symptom presentation, and help-seeking behaviors represent a well-documented phenomenon in mental health research. While epidemiological studies consistently report approximately twofold higher prevalence of depression diagnoses in females compared to males, suicide rates demonstrate a paradoxical pattern, with males dying by suicide three to four times more frequently than females despite lower reported depression rates (16). These disparities reflect complex interactions between biological, psychological, and sociocultural factors. Traditional masculine norms

emphasizing emotional control, self-reliance, and stoicism create significant barriers to help-seeking among men, who are more likely to delay seeking care or avoid professional help entirely, preferring to manage mental health issues independently (17). Men with MDD may present with atypical symptoms such as anger, aggression, and risk-taking behaviors that can mask underlying depression and lead to underdiagnosis. Conversely, women are more likely to seek help for mental health concerns but face distinct challenges, including higher rates of perceived stigma and embarrassment about using mental health services. Understanding these gender-specific patterns is essential for developing targeted interventions that address the unique barriers faced by males and females in accessing mental health care (17).

The Middle East region faces distinctive challenges in addressing mental health needs. Despite the historical significance of the region in establishing early psychiatric care facilities, contemporary attitudes toward mental health remain heavily influenced by cultural, religious, and social factors (18). Studies from Middle Eastern countries, including Iran, document substantial stigma associated with mental illness, with mental health conditions often attributed to personal weakness, supernatural causes, or spiritual deficiencies rather than medical conditions. In Iran specifically, mental health services have progressively integrated into primary healthcare systems, yet significant barriers to care persist (19). Iranian populations demonstrate relatively low subjective well-being compared to global averages, ranking 118th among 153 nations in the World Happiness Report, with mental health literacy identified as a key modifiable factor influencing help-seeking behavior (20). The Iranian context is further complicated by socioeconomic challenges, limited mental health resources in rural areas, and cultural norms that discourage disclosure of psychological distress. Research indicates that perceived barriers and self-efficacy are significant predictors of seeking mental health services among Iranian populations, highlighting the need for culturally adapted interventions to improve access to care (21, 22).

Rural populations face unique and compounded challenges in accessing mental health services. Geographic isolation, severe shortages of mental health professionals, limited transportation options, poverty, and inadequate insurance coverage create substantial structural barriers to care. More than 60% of federally designated Mental Health Professional Shortage Areas are located in rural or partially rural regions, resulting in prolonged wait times or complete absence of specialized services (23, 24). Rural youth are particularly vulnerable, with evidence indicating that only one in five rural adolescents with major depressive episodes receive treatment, compared to nearly half of their urban counterparts (25). The close-knit nature of rural communities, while offering potential social support, simultaneously intensifies concerns about confidentiality and privacy, further deterring help-seeking (26). Rural residents often experience heightened stigma associated

with mental illness, viewing mental health conditions as personal failings rather than legitimate health concerns requiring professional intervention. These disparities are reflected in elevated suicide rates among rural youth, which are nearly double those observed in urban areas, emphasizing the urgent need for improved access to mental health services and targeted stigma-reduction interventions in rural settings (27).

While previous research has extensively documented the prevalence of MDD, its association with suicidality, and barriers to help-seeking in Western populations, there remains a paucity of evidence examining these relationships in rural Middle Eastern contexts, particularly among youth populations. The intersection of MDD, help-seeking attitudes, and suicidal ideation within the cultural framework of rural Iran—where traditional values, limited mental health infrastructure, and pronounced stigma converge—represents a critical yet underexplored area of inquiry. Furthermore, understanding gender-specific patterns in these relationships is essential for developing effective, culturally appropriate interventions. Young adults aged 15 to 34 years constitute a demographic particularly vulnerable to mental health challenges due to developmental transitions, emerging responsibilities, and evolving social roles, yet research focusing specifically on this age group in rural Middle Eastern settings remains limited.

The present study addresses these gaps by examining the prevalence of MDD, its associations with help-seeking attitudes, and its relationship with suicidal ideation and attempts among youth aged 15 to 34 years in rural Iran. Utilizing validated instruments adapted for the Iranian population, including the Composite International Diagnostic Interview (CIDI) 2.1 for MDD assessment and standardized questionnaires for evaluating help-seeking attitudes and suicidality, this investigation provides comprehensive data on mental health patterns in an underrepresented population. The study specifically examined gender-stratified associations across different age groups, offering nuanced insights into how MDD, help-seeking behaviors, and suicidal risk factors manifest among young males and females in rural Iranian communities. By characterizing the specific barriers that individuals with MDD face in seeking care, and by documenting the heightened suicide risk associated with depression in this population, this research aimed to inform the development of targeted mental health interventions and policies tailored to the unique needs and cultural context of rural youth populations in Iran and similar low- and middle-income country settings.

Methods

Study Design and Setting

This cross-sectional study was conducted as part of the Fasa Youth Cohort, a population-based prospective cohort study in rural Iran. The cohort is designed to investigate health behaviors, risk factors for non-communicable diseases (NCDs), and mental health outcomes among

youth populations in underserved rural communities. The study was conducted in the Sheshdeh region, a rural area located near Fasa city in eastern Fars province, southern Iran. This region is characterized by limited access to specialized healthcare services, traditional social structures, and a mixed agricultural-pastoral economy.

Sample Size and Recruitment

The initial sample comprised 3,014 participants from the Fasa Youth Cohort. Participants were recruited through a population-based sampling approach utilizing household visits conducted by Behvarz (community health workers) who serve as trusted intermediaries between the healthcare system and rural communities. The Behvarz systematically visited households in small towns and surrounding villages within the Sheshdeh region to identify and recruit eligible participants.

After excluding participants with incomplete data, the final analytical sample included 2,923 participants (97.0% of the initial sample) with complete information on all study variables, including MDD diagnosis, help-seeking attitudes, and suicidal ideation/behaviors. The 91 participants (3.0%) excluded due to missing data did not differ significantly from included participants in terms of age ($P=0.43$) or gender distribution ($P=0.67$), suggesting minimal selection bias from the missing data exclusions.

Eligibility Criteria

Inclusion Criteria:

- Iranian nationality
- Age between 15 and 34 years at the time of enrollment
- Permanent residence in rural areas of the Sheshdeh region (residing in the area for at least 6 months before enrollment)
- Ability to provide informed consent (for participants aged 18-34 years) or parental/guardian consent with participant assent (for participants aged 15-17 years)
- Willingness to participate in a comprehensive face-to-face clinical interview

Exclusion Criteria:

- Severe physical disabilities preventing participation in the interview process
- Severe cognitive or intellectual disabilities that would preclude comprehension of questionnaire items and informed consent
- Acute psychotic symptoms or severe mental illness requiring immediate hospitalization at the time of enrollment
- Inability to communicate in Persian (Farsi) or local dialects spoken by trained interviewers
- Voluntary withdrawal from the study at any stage

Socioeconomic and Environmental Context

Participants resided in communities characterized by diverse socioeconomic conditions, varying access to healthcare infrastructure, and distinct environmental factors influencing health and disease risk. The rural setting

of the Sheshdeh region involves predominantly agricultural and pastoral livelihoods, with associated economic uncertainties related to crop yields, seasonal employment, and limited economic diversification. Access to mental health services is limited, with most specialized psychiatric care requiring travel to urban centers such as Fasa city or the provincial capital Shiraz. Primary healthcare services are delivered through a network of rural health centers staffed by general practitioners and Behvarz, with limited availability of psychologists, psychiatrists, or specialized mental health counselors in the immediate vicinity.

The cultural context is characterized by traditional family structures, gender role differentiation, and social norms that may influence mental health help-seeking behaviors. Stigma associated with mental illness remains pronounced, with mental health problems often attributed to personal weakness, spiritual deficiencies, or supernatural causes rather than recognized as legitimate medical conditions. These contextual factors create both unique vulnerabilities to mental health problems and substantial barriers to accessing appropriate care.

Ethical Considerations

The study protocol was reviewed and approved by the Ethics Committee of Fasa University of Medical Sciences (Approval code: IR.FUMS.REC.1403.015) and was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki (1975, revised 2008). All participants (or parents/guardians for minors) provided written informed consent after receiving comprehensive information about the study's purpose, procedures, potential risks and benefits, confidentiality protections, and their right to withdraw at any time without consequences.

Given the sensitive nature of questions regarding mental health, suicidal ideation, and help-seeking attitudes, specific ethical safeguards were implemented. Clinical psychologists conducting the interviews were trained in recognizing acute mental health crises and had established referral pathways to appropriate mental health services for participants expressing active suicidal intent or requiring immediate intervention. Participant confidentiality was strictly maintained, with data anonymized through unique identification codes and stored securely. Only authorized research personnel had access to identifiable participant information.

For participants aged 15-17 years, parental or guardian consent was obtained in addition to participant assent, with age-appropriate explanations provided to ensure adolescents understood the study procedures and their voluntary participation. Special attention was given to ensuring that participation did not expose adolescents to additional stigma or social risk within their families or communities.

Measurements

Assessment of Major Depressive Disorder

To investigate MDD, we employed the Composite International Diagnostic Interview (CIDI) 2.1

questionnaire, which is specifically designed based on the DSM-IV and ICD-10 criteria (28) and has been validated within the Iranian general population (29). This questionnaire includes a section dedicated to MDD, comprising 20 questions that require yes or no responses to assess the presence of depressive symptoms. A diagnosis of MDD is indicated if a respondent affirms at least 5 out of these 20 questions.

The structure of these questions is comprehensive: the initial two questions (E1 and E2) broadly address mood disorders and are pertinent to diagnosing MDD. Question E3 assesses the individual's energy levels, questions E4 to E7 examine changes in appetite, and questions E8 and E9 focus on sleep disturbances. Questions E10 and E11 investigate psychomotor issues, such as slowness and restlessness. Feelings of worthlessness or guilt are covered by question E12, while questions E13 and E14 address issues related to low self-confidence. Cognitive difficulties are explored through questions E15 to E17, and the final three questions (E18 to E20) delve into thoughts about death and suicide. A clinical psychologist conducted the interview and provided the final diagnosis of MDD, ensuring a comprehensive assessment of the various symptoms associated with the disorder.

Assessment of Suicidal Ideation and Behaviors

Given the critical importance of assessing thoughts about death, suicidal ideation, and attempted suicide, we utilized a specialized questionnaire comprising four questions (SC1, SC2, SC3, SC4) to evaluate these aspects. This instrument has been validated in accordance with global mental health surveys (30) and tailored for the general population in Iran (29). Responses to the questions are binary (yes or no). SC1 addresses whether the respondent has thought about death, SC2 inquires about serious suicidal thoughts, SC3 examines whether the respondent has made any plans for suicide, and SC4 explores any history of suicide attempts. This method ensures a thorough assessment of suicidal ideation and behavior in relation to MDD and attitudes towards seeking help.

Assessment of Help-Seeking Attitudes

A brief four-question survey was employed to gauge attitudes towards seeking mental health services. This survey incorporated the first three questions from the National Comorbidity Survey Replication (NCS-R) questionnaire (29), which are: HS1) "If you have a serious mental health problem, would you use mental health services?", HS2) "Can you easily discuss your mental problems with a psychiatrist or counselor?", and HS3) "If your friends or acquaintances find out that you are using mental health services, would you be embarrassed?" An additional fourth question was included, which asked, HS4) "If you had an addiction, would you use mental health services?" The responses to these questions were subsequently analyzed following the framework of the NCS-R questionnaire. This widely recognized instrument categorizes responses into binary outcomes: affirmative

(yes) or negative (no).

Psychometric Properties and Validation

All measurement instruments used in this study have established psychometric properties and have been validated for Iranian populations.

The Composite International Diagnostic Interview (CIDI) 2.1 demonstrates excellent reliability (inter-rater kappa: 0.70-0.92; test-retest kappa > 0.70; internal consistency α > 0.90) and good concurrent validity (kappa: 0.72-0.77) when compared with semi-structured clinical interviews (29). The Persian version has been validated for Iranian populations by Sharifi et al. (31) and successfully employed in the Iranian Mental Health Survey (29).

The suicidal ideation and behavior questions are derived from the WHO World Mental Health Survey Initiative, validated across 21 countries (30). These questions demonstrate excellent test-retest reliability (kappa: 0.78-0.95), high predictive validity for subsequent suicide attempts, and strong concurrent validity with established suicide assessment instruments (r : 0.75-0.85) (9, 30, 32). The Persian adaptation has been validated for Iranian populations through the Iranian Mental Health Survey (29).

The help-seeking attitudes questionnaire incorporates questions from the National Comorbidity Survey Replication (NCS-R), which demonstrates good test-retest reliability (kappa: 0.68-0.82), predictive validity for actual service utilization, and cross-cultural validity across multiple countries (11, 33).

All interviews were conducted by trained clinical psychologists following standardized protocols to ensure measurement consistency and reliability.

Data Collection

The required data for this study, including basic demographic information, responses to depression assessments, help-seeking attitudes questionnaires, and suicidal ideation evaluations, were carefully collected through face-to-face interviews conducted by trained clinical psychologists. All interviews were conducted in Persian (Farsi) or local dialects as appropriate for each participant's linguistic preference. After data collection, the data were entered into Microsoft Excel for initial storage and subsequently transferred to SPSS for statistical analysis, with each participant assigned a unique identification code to ensure privacy and anonymity throughout the data management process.

The clinical psychologists conducting the interviews received specialized training in administering standardized diagnostic instruments, establishing rapport with participants, ensuring confidentiality, and recognizing signs of acute mental health crises requiring immediate intervention. Interview sessions were conducted in private settings within community health centers or participants' homes, depending on participant preference and logistical feasibility, to maximize comfort and ensure confidentiality.

Data Analysis

Descriptive Statistics

Descriptive statistics were calculated for all variables. Categorical variables were presented as frequencies and percentages, while continuous variables were expressed as means $\pm$ standard deviations. Chi-square tests were used to examine bivariate associations between Major Depressive Disorder (MDD) and categorical variables including gender, age groups, help-seeking attitudes (HS1-HS4), and suicidal ideation/behaviors (SC1-SC4).

Regression Analyses

Logistic regression analyses were performed in two stages. First, univariable (crude) logistic regression models were conducted to examine unadjusted associations between MDD status and each predictor variable individually, with crude odds ratios (cOR) and 95% confidence intervals (CI) calculated. Second, multivariable logistic regression models were constructed to determine adjusted odds ratios (aOR) for: (1) help-seeking behaviors among individuals with MDD, and (2) suicidal ideation and attempts among individuals with MDD. All multivariable models were adjusted for potential confounders including age (continuous), gender (where applicable in non-stratified analyses), and marital status.

Separate gender-stratified analyses were conducted given the known gender differences in mental health help-seeking behaviors and the observed gender differences in MDD prevalence in this sample. In these stratified models, adjustment was made for age and marital status only, as gender was the stratification variable.

Model Diagnostics

Model diagnostics included assessment of multicollinearity using variance inflation factors (VIF), with values less than 5 considered acceptable. Model fit was evaluated using the Hosmer-Lemeshow goodness-of-fit test, with p-values greater than 0.05 indicating adequate fit. Discrimination was assessed using Nagelkerke R^2 and overall classification accuracy. Both crude odds ratios (cOR) and adjusted odds ratios (aOR) are reported with 95% confidence intervals (CI).

Statistical Software and Significance

All statistical analyses were performed using IBM SPSS Statistics for Windows, version 16.0 (IBM Corp., Armonk, NY, USA). Two-tailed p-values less than 0.05 were considered statistically significant for all analyses.

Results

Sample Characteristics

All participants were between 15 and 34 years of age at the time of enrollment, representing the youth and young adult demographic. The mean age of the total sample was 26.42 ± 5.31 years. The final analytical sample included 1,699 males (58.1%) and 1,224 females (41.9%). The higher proportion of males reflects both the demographic composition of the rural region and potentially differential

participation rates by gender in face-to-face household surveys. Information on marital status was collected and used as a covariate in multivariable analyses. Given the age range of the sample and cultural context of rural Iran where marriage typically occurs in the early-to-mid twenties, the sample included both unmarried and married participants, with marital status potentially influencing both mental health status and help-seeking behaviors.

Prevalence of Major Depressive Disorder

Among the 2,923 participants included in the final analysis, 767 individuals (26.2%) met diagnostic criteria for major depressive disorder based on the Composite International Diagnostic Interview (CIDI) 2.1. Participants with major depressive disorder (MDD) had a mean age of 26.65 ± 5.12 years, while those without MDD had a mean age of 26.31 ± 5.41 years ($P = 0.12$). For analytical purposes, participants were stratified into four age groups: ≤ 20 years, 21-24 years, 25-29 years, and ≥ 30 years. This age range was specifically selected to capture critical developmental transitions including completion of secondary education, entry into higher education or the workforce, marriage, and early family formation—life stages associated with elevated vulnerability to mental health challenges.

The prevalence differed significantly by gender, with 516 males (30.4% of all males) and 251 females (20.5% of all females) diagnosed with MDD ($P < 0.001$). This represents a male-to-female ratio of approximately 1.5:1, a pattern that contrasts with typical global epidemiological findings where female MDD prevalence generally exceeds male prevalence by approximately 2:1.

Age-stratified prevalence patterns revealed differential age-related trends by gender. Among males, MDD prevalence increased with age, ranging from 22.8% in those

aged ≤ 20 years to 32.4% in those aged ≥ 30 years ($P = 0.028$). In contrast, females demonstrated relatively stable MDD prevalence across age groups (18.9% to 22.6%, $P = 0.65$), suggesting that age-related risk factors for depression may operate differently by gender in this rural population.

Prevalence of MDD by Gender and Age

Table 1 presents the prevalence of MDD stratified by gender and age groups. MDD prevalence was significantly higher among men (30.4%, 516/1699) compared to women (20.5%, 251/1224; $P < 0.001$). The overall mean age did not differ significantly between participants with and without MDD (26.65 ± 5.12 vs. 26.31 ± 5.41 years, $P = 0.12$).

Age-stratified analyses revealed differential patterns by gender. Among men, MDD prevalence varied significantly across age groups ($P = 0.028$), with the lowest prevalence in those aged ≤ 20 years (22.8%) and highest in those aged ≥ 30 years (32.4%). In contrast, women showed no significant age-related differences in MDD prevalence ($P = 0.65$), with rates ranging from 18.9% to 22.6% across age groups.

MDD and Help-Seeking Attitudes by Gender

Table 2 displays the associations between MDD and help-seeking attitudes, stratified by gender. Among men with MDD, 90.3% expressed willingness to use mental health services (HS1) compared to 85.4% of men without MDD ($P = 0.003$). In multivariable analysis adjusting for age and marital status, men with MDD had 64% higher odds of expressing willingness to seek help compared to non-depressed men (aOR = 1.64, 95% CI: 1.15-2.24, $P = 0.005$). Model diagnostics showed adequate fit (Hosmer-Lemeshow $\chi^2 = 4.23$, $P = 0.84$) with modest predictive ability (Nagelkerke $R^2 = 0.042$). No other help-seeking attitudes showed significant associations among men in adjusted

Table 1. The prevalence of MDD by Gender and Age Groups

		MDD		P-value†
		No 2156 (73.8)	Yes 767 (26.2)	
Sex‡	Male	1183 (69.6)	516 (30.4)	<0.001*
	Female	973 (79.5)	251 (20.5)	
	Total (mean $\pm$ SD)	26.31 $\pm$ 5.41	26.65 $\pm$ 5.12	0.12
Age§	Male	≤ 20	63 (22.8)	0.028*
		21-24	93 (32.2)	
		25-29	182 (31.1)	
		≥ 30	178 (32.4)	
	Female	≤ 20	43 (19.6)	0.65
		21-24	43 (22.6)	
		25-29	85 (21.7)	
		≥ 30	80 (18.9)	

MDD=Major Depressive Disorder; SD=Standard Deviation.

† Statistical tests: Chi-squared test (χ^2) for categorical variables; Independent samples t-test for continuous variables

‡ Sex comparison: Pearson Chi-squared test, $\chi^2 = 34.68$, $df = 1$, $P < 0.001$.

§ Age group comparison (Chi-squared test, stratified by gender):

Males: $\chi^2 = 9.11$, $df = 3$, $p = 0.028$

Females: $\chi^2 = 1.65$, $df = 3$, $p = 0.65$

* Statistically significant at $\alpha = 0.05$ (two-tailed).

Total sample: $n = 2,923$; Percentages represent row percentages (% of each demographic group).

Table 2. The Association Between MDD and Help-Seeking Attitudes by Gender

Gender	Variable		MDD Status N (%)		Crude OR† (95% CI)	P-value‡	Adjusted OR§ (95% CI)	P-value‡
			No	Yes				
Male	HS1	No	173 (14.6)	50 (9.7)	1.60 (1.16-2.21)	0.003*	1.64 (1.15-2.24)	0.005*
		Yes	1010 (85.4)	466 (90.3)				
	HS2	No	98 (8.3)	33 (6.4)	1.32 (0.87-2.02)	0.17	0.79 (0.50-1.24)	0.34
		Yes	1084 (91.7)	483 (93.6)				
	HS3	No	689 (58.3)	303 (58.7)	0.98 (0.80-1.21)	0.85	0.99 (0.80-1.22)	0.65
		Yes	494 (41.7)	213 (41.3)				
	HS4	No	122 (10.3)	58 (11.2)	0.82 (0.59-1.15)	0.26	1.03 (0.67-1.58)	0.89
		Yes	1007 (85.1)	393 (76.2)				
Female	HS1	No	150 (15.4)	41 (16.3)	1.07 (0.73-1.56)	0.72	1.27 (0.99-1.63)	0.065
		Yes	823 (84.6)	210 (83.7)				
	HS2	No	84 (8.6)	27 (10.8)	0.78 (0.49-1.25)	0.29	1.28 (0.85-1.92)	0.24
		Yes	889 (91.4)	224 (89.2)				
	HS3	No	727 (74.7)	173 (68.9)	1.33 (0.99-1.80)	0.044*	1.33 (0.98-1.80)	0.079
		Yes	246 (25.3)	78 (31.1)				
	HS4	No	124 (12.7)	31 (12.4)	1.03 (0.68-1.56)	0.89	0.81 (0.58-1.14)	0.22
		Yes	813 (83.6)	209 (83.3)				

MDD=Major Depressive Disorder; OR=Odds Ratio; CI=Confidence Interval.

Help-Seeking Variables: HS1: Willingness to use mental health services for serious mental health problem HS2: Comfort discussing mental problems with psychiatrist/counselor HS3: Embarrassment if friends/acquaintances know about using mental health services HS4: Willingness to use mental health services for addiction

† Crude OR: Univariable binary logistic regression

‡ p-values: Wald chi-square test (χ^2) from logistic regression

§ Adjusted OR: Multivariable logistic regression adjusted for age (continuous) and marital status

* Statistically significant at $\alpha=0.05$ (two-tailed).

Model diagnostics: Hosmer-Lemeshow test $P>0.05$ (good fit); Nagelkerke $R^2=0.028-0.042$

Multicollinearity: VIF <2.1 (no multicollinearity detected)

n=2,923 (Male=1,699; Female=1,224); Percentages=column % within MDD status.

models.

Among women, those with MDD were more likely to report embarrassment about using mental health services (HS3: 24.1% vs. 19.2%, $P=0.044$), though this association did not reach statistical significance in adjusted analysis (aOR = 1.33, 95% CI: 0.98-1.80, $P=0.079$). Model fit was adequate (Hosmer-Lemeshow $\chi^2=3.67$, $P=0.88$; Nagelkerke $R^2=0.028$). Women with MDD did not show significantly increased odds of seeking help (HS1) in either crude (cOR=1.07, 95% CI: 0.73-1.56, $P=0.72$) or adjusted analyses (aOR=1.27, 95% CI: 0.99-1.63, $P=0.065$).

Model diagnostics: All models showed adequate fit (Hosmer-Lemeshow $P>0.05$) with no evidence of multicollinearity (all VIF <2.1). Classification accuracy ranged from 69.2% to 79.8%.

Age-Specific Patterns in Help-Seeking Attitudes

Table 3 presents age-stratified associations between MDD and help-seeking attitudes by gender. Due to small cell counts in some age-gender subgroups, these analyses are descriptive in nature; statistical testing was performed using Chi-squared tests, but odds ratios were not calculated to avoid unstable estimates.

Among men aged 21-24 years with MDD, significantly higher proportions expressed willingness to seek help (HS1: 92.5% vs. 7.5%, $P=0.018$) and comfort discussing mental health issues (HS2: 94.6% vs. 5.4%, $P=0.034$). Men

aged ≥ 30 years with MDD also showed increased help-seeking intentions (HS1: 91.6% vs. 8.4%, $P=0.02$).

Among women, younger age groups showed distinct barriers. Women aged ≤ 20 years with MDD reported greater discomfort discussing mental health problems (HS2: 74.4% vs. 25.6%, $P=0.032$). Women aged 25-29 years with MDD experienced heightened stigma (HS3: 36.5% vs. 63.5%, $P=0.005$), representing a 75% increase in perceived stigma associated with seeking mental health services.

MDD and Suicidal Ideation/Attempts

Table 4 demonstrates strong associations between MDD and all indicators of suicidal ideation and behavior in both genders. Among participants with MDD, 70.2% of men and 55.0% of women reported thoughts about death (SC1), compared to 34.5% and 19.3%, respectively, among those without MDD (both $P<0.001$).

In multivariable models adjusted for sex, age, and marital status, individuals with MDD showed markedly elevated odds across all suicide-related outcomes:

- Thoughts about death (SC1): aOR=4.40, 95% CI: 3.68-5.26, $P<0.001$
- Serious suicidal thoughts (SC2): aOR=5.15, 95% CI: 4.07-6.52, $P<0.001$
- Suicide plans (SC3): aOR=6.02, 95% CI: 4.54-7.98, $P<0.001$
- Suicide attempts (SC4): aOR=7.28, 95% CI: 4.95-

Table 3. The relationship Between MDD and Attitudes Toward Help-Seeking Across Different Age Groups

Age groups	Variable		Male			Female		
			MDD		P-value†	MDD		P-value†
			No	Yes		No	Yes	
≤20	HS1	No	32 (15.0)	11 (17.5)	0.63	41 (23.3)	12 (27.9)	0.52
		Yes	181 (85.0)	52 (82.5)		135 (76.7)	31 (72.1)	
	HS2	No	20 (9.4)	11 (17.5)	0.145	22 (12.5)	11 (25.6)	0.032*
		Yes	193 (90.6)	52 (82.5)		154 (87.5)	32 (74.4)	
	HS3	No	117 (54.9)	37 (58.7)	0.59	124 (70.5)	30 (69.8)	0.93
		Yes	96 (45.1)	26 (41.3)		52 (29.5)	13 (30.2)	
	HS4	No	30 (14.1)	6 (9.5)	0.42	33 (18.8)	10 (23.3)	0.49
		Yes	178 (83.6)	52 (82.5)		140 (79.5)	32 (74.4)	
21-24	HS1	No	35 (17.9)	7 (7.5)	0.018*	21 (14.3)	11 (25.6)	0.082
		Yes	161 (82.1)	86 (92.5)		126 (85.7)	32 (74.4)	
	HS2	No	27 (13.8)	5 (5.4)	0.034*	12 (8.2)	4 (9.3)	0.81
		Yes	169 (86.2)	88 (94.6)		135 (91.8)	39 (90.7)	
	HS3	No	114 (58.2)	55 (59.1)	0.87	109 (74.1)	32 (74.4)	0.97
		Yes	82 (41.8)	38 (40.9)		38 (25.9)	11 (25.6)	
	HS4	No	17 (8.7)	11 (11.8)	0.36	25 (17.0)	6 (14.0)	0.63
		Yes	168 (85.7)	75 (80.6)		122 (83.0)	37 (86.0)	
25-29	HS1	No	48 (11.9)	17 (9.3)	0.36	42 (13.7)	12 (14.1)	0.91
		Yes	355 (88.1)	165 (90.7)		265 (86.3)	73 (85.9)	
	HS2	No	23 (5.7)	8 (4.4)	0.51	24 (7.8)	5 (5.9)	0.54
		Yes	380 (94.3)	174 (95.6)		283 (92.2)	80 (94.1)	
	HS3	No	236 (58.6)	103 (56.6)	0.65	241 (78.5)	54 (63.5)	0.005*
		Yes	167 (41.4)	79 (43.4)		66 (21.5)	31 (36.5)	
	HS4	No	41 (10.2)	27 (14.8)	0.049*	42 (13.7)	6 (7.1)	0.12
		Yes	346 (85.9)	135 (74.2)		254 (82.7)	72 (84.7)	
≥30	HS1	No	58 (15.6)	15 (8.4)	0.02*	46 (13.4)	6 (7.5)	0.14
		Yes	313 (84.4)	163 (91.6)		297 (86.6)	74 (92.5)	
	HS2	No	28 (7.5)	9 (5.1)	0.27	26 (7.6)	7 (8.8)	0.72
		Yes	342 (92.2)	169 (94.9)		317 (92.4)	73 (91.3)	
	HS3	No	222 (59.8)	108 (60.7)	0.85	253 (73.8)	57 (71.3)	0.64
		Yes	149 (40.2)	70 (39.3)		90 (26.2)	23 (28.8)	
	HS4	No	34 (9.2)	14 (7.9)	0.97	24 (7.0)	9 (11.3)	0.22
		Yes	315 (84.9)	131 (73.6)		297 (86.6)	68 (85.0)	

Table 3 presents selected statistically significant findings from age-stratified analysis.

† p-values from Chi-square test (χ^2) or Fisher's exact test (when expected cell count < 5)

* Statistically significant at $\alpha=0.05$ (two-tailed).

Note: Full table contains all age groups (≤ 20 , 21-24, 25-29, ≥ 30) $\times$ all help-seeking variables (HS1-HS4) $\times$ both genders

Abbreviations: MDD = Major Depressive Disorder

Help-seeking variables: HS1-HS4 (see Table 2 for definitions)

Odds ratios not calculated for age-stratified analyses due to small cell counts in some subgroups.

10.71, $P < 0.001$

Overall model fit statistics indicated excellent discrimination: Hosmer-Lemeshow $\chi^2 = 8.44$, $P = 0.39$; Nagelkerke $R^2 = 0.174$; Classification accuracy = 87.3%.

Gender-stratified analyses revealed consistently stronger associations among women compared to men across all outcomes. Model fit for gender-stratified models was adequate (Male: Hosmer-Lemeshow $\chi^2 = 6.12$, $P = 0.53$, Nagelkerke $R^2 = 0.168$; Female: Hosmer-Lemeshow $\chi^2 = 5.89$, $P = 0.66$, Nagelkerke $R^2 = 0.192$). Women with MDD demonstrated:

- SC1: aOR = 4.51 (95% CI: 3.38-6.02) vs. men aOR = 4.27 (95% CI: 3.42-5.34)
- SC2: aOR = 5.84 (95% CI: 3.94-8.65) vs. men aOR = 4.57 (95% CI: 3.45-6.05)
- SC3: aOR = 7.28 (95% CI: 4.58-11.60) vs. men aOR = 5.01 (95% CI: 3.66-6.85)
- SC4: aOR = 11.77 (95% CI: 6.07-22.82) vs. men aOR = 4.29 (95% CI: 2.75-6.69)

The magnitude of association for suicide attempts (SC4) was nearly three-fold higher in women with MDD compared to men with MDD.

Table 4. The association of MDD with Suicidal Ideation and Attempts

Gender	Variable		MDD Status N (%)		Crude OR† (95% CI)	P-value‡	Adjusted OR§ (95% CI)	P-value‡
			No	Yes				
Total	SC1	No	1560 (72.4)	267 (34.8)	4.56 (3.83-5.43)	<0.001*	4.40 (3.68-5.26)	<0.001*
		Yes	596 (27.6)	500 (65.2)				
	SC2	No	2072 (96.1)	570 (74.3)	5.09 (4.03-6.43)	<0.001*	5.15 (4.07-6.52)	<0.001*
		Yes	84 (3.9)	197 (25.7)				
	SC3	No	2121 (98.4)	610 (79.5)	5.81 (4.40-7.67)	<0.001*	6.02 (4.54-7.98)	<0.001*
		Yes	35 (1.6)	157 (20.5)				
	SC4	No	2181 (98.9)	696 (90.7)	6.20 (4.25-9.05)	<0.001*	7.28 (4.95-10.71)	<0.001*
		Yes	25 (1.1)	71 (9.3)				
Male	SC1	No	775 (65.5)	154 (29.8)	4.25 (3.43-5.26)	<0.001*	4.27 (3.42-5.34)	<0.001*
		Yes	408 (34.5)	362 (70.2)				
	SC2	No	1118 (94.5)	376 (72.9)	4.52 (3.42-5.97)	<0.001*	4.57 (3.45-6.05)	<0.001*
		Yes	65 (5.5)	140 (27.1)				
	SC3	No	1145 (96.8)	402 (77.9)	4.92 (3.61-6.70)	<0.001*	5.01 (3.66-6.85)	<0.001*
		Yes	38 (3.2)	114 (22.1)				
	SC4	No	1185 (98.7)	470 (91.1)	4.43 (2.85-6.90)	<0.001*	4.29 (2.75-6.69)	<0.001*
		Yes	16 (1.3)	46 (8.9)				
Female	SC1	No	785 (80.7)	113 (45.0)	4.53 (3.40-6.04)	<0.001*	4.51 (3.38-6.02)	<0.001*
		Yes	188 (19.3)	138 (55.0)				
	SC2	No	954 (98.0)	194 (77.3)	5.81 (3.94-8.59)	<0.001*	5.84 (3.94-8.65)	<0.001*
		Yes	19 (2.0)	57 (22.7)				
	SC3	No	976 (99.7)	208 (82.9)	7.25 (4.56-11.53)	<0.001*	7.28 (4.58-11.60)	<0.001*
		Yes	3 (0.3)	43 (17.1)				
	SC4	No	996 (99.2)	226 (90.0)	11.19 (5.79-21.65)	<0.001*	11.77 (6.07-22.82)	<0.001*
		Yes	9 (0.8)	25 (10.0)				

MDD=Major Depressive Disorder; OR=Odds Ratio; CI=Confidence Interval.

Suicidal Ideation/Behavior Variables:

SC1: Thought about death

SC2: Serious suicidal thoughts

SC3: Made plans for suicide

SC4: History of suicide attempts

† Crude OR: Univariable binary logistic regression

‡ p-values: Wald chi-square test (χ^2) from logistic regression

§ Adjusted OR: Multivariable logistic regression

Total model adjusted for: sex, age (continuous), marital status

Gender-stratified models adjusted for: age (continuous), marital status

* Statistically significant at $\alpha=0.05$ (two-tailed)

Model diagnostics:

Overall model: Hosmer-Lemeshow $\chi^2=8.44$, $p=0.39$; Nagelkerke $R^2=0.174$; Accuracy=87.3%Male model: Hosmer-Lemeshow $\chi^2=6.12$, $p=0.53$; Nagelkerke $R^2=0.168$ Female model: Hosmer-Lemeshow $\chi^2=5.89$, $P=0.66$; Nagelkerke $R^2=0.192$

Multicollinearity: VIF<2.3 for all predictors

n=2,923; Percentages=column % within MDD status; Table shows abbreviated results (full data in original)

Suicidal Ideation and Help-Seeking Barriers

Table 5 examines the relationship between suicidal ideation/behaviors and help-seeking attitudes, analyzed separately by gender. Among men reporting thoughts about death (SC1), there was a paradoxical decrease in help-seeking intentions (HS1: 85.3% vs. 14.7%, $P=0.035$) and increased perceived stigma (HS3: 44.6% vs. 55.4%, $P=0.012$).

The barriers were more pronounced among women. Women with thoughts about death (SC1) showed reduced help-seeking (HS1: 79.7% vs. 20.3%, $P=0.007$), discomfort discussing issues with professionals (HS2: 85.7% vs. 14.3%, $P<0.001$), and heightened stigma (HS3: 31.4% vs. 68.6%, $P=0.004$).

Women reporting serious suicidal thoughts (SC2) demonstrated the most substantial barriers:

- Reduced help-seeking: 75.8% vs. 24.2% ($P=0.01$)
- Discomfort with disclosure: 85.0% vs. 15.0% ($P=0.022$)
- Increased stigma: 36.7% vs. 63.3% ($P=0.006$)
- Lower likelihood of seeking help for addiction: 81.0% vs. 19.0% ($P=0.042$)

Among women who had formulated suicide plans (SC3), only 75.0% expressed willingness to seek help compared to 25.0% of those without plans ($P=0.019$). Women who had attempted suicide (SC4) reported significant discomfort sharing their problems with mental health professionals (82.6% vs. 17.4%, $P=0.041$).

Table 5. The relationship Between Help-Seeking and Suicidal Thoughts and Attempts in Women and Men

		Male			Female		
		HS1		P-value†	HS1		P-value†
		No	Yes		No	Yes	
SC1	No	107 (11.5)	822 (88.5)	0.035*	127 (14.1)	771 (85.9)	0.007*
	Yes	120 (14.7)	697 (85.3)		75 (20.3)	295 (79.7)	
SC2	No	192 (12.9)	1302 (87.1)	0.37	173 (15.1)	975 (84.9)	0.01*
	Yes	35 (13.9)	217 (86.1)		29 (24.2)	91 (75.8)	
SC3	No	205 (13.3)	1342 (86.7)	0.22	181 (15.3)	1003 (84.7)	0.019*
	Yes	22 (11.1)	177 (88.9)		21 (25.0)	63 (75.0)	
SC4	No	219 (13.2)	1436 (86.8)	0.22	190 (15.5)	1032 (84.5)	0.055
	Yes	8 (8.8)	83 (91.2)		12 (26.1)	34 (73.9)	
		HS2		P-value	HS2		P-value
		No	Yes		No	Yes	
SC1	No	66 (7.1)	863 (92.9)	0.38	64 (7.1)	834 (92.9)	<0.001*
	Yes	67 (8.2)	749 (91.8)		53 (14.3)	317 (85.7)	
SC2	No	113 (7.6)	1380 (92.4)	0.83	99 (8.6)	1049 (91.4)	0.022*
	Yes	20 (7.9)	232 (92.1)		18 (15.0)	102 (85.0)	
SC3	No	120 (7.8)	1426 (92.2)	0.53	105 (8.9)	1079 (91.1)	0.09*
	Yes	13 (6.5)	186 (93.5)		12 (14.3)	72 (85.7)	
SC4	No	130 (7.9)	1524 (92.1)	0.11	109 (8.9)	1113 (91.1)	0.041*
	Yes	3 (3.3)	88 (96.7)		8 (17.4)	38 (82.6)	
		HS3		P-value	HS3		P-value
		No	Yes		No	Yes	
SC1	No	570 (61.4)	359 (38.6)	0.012*	683 (76.1)	215 (23.9)	0.004*
	Yes	453 (55.4)	364 (44.6)		254 (68.6)	116 (31.4)	
SC2	No	887 (59.4)	607 (40.6)	0.1	861 (75.0)	287 (25.0)	0.006*
	Yes	136 (54.0)	116 (46.0)		76 (63.3)	44 (36.7)	
SC3	No	901 (58.2)	646 (41.8)	0.4	880 (74.3)	304 (25.7)	0.19
	Yes	122 (61.3)	77 (38.7)		57 (67.9)	27 (32.1)	
SC4	No	963 (58.2)	692 (41.8)	0.14	903 (73.9)	319 (26.1)	0.9
	Yes	60 (65.9)	31 (34.1)		34 (73.9)	12 (26.1)	
		HS4		P-value	HS4		P-value
		No	Yes		No	Yes	
SC1	No	89 (10.1)	789 (89.9)	0.12	105 (12.2)	758 (87.8)	0.091
	Yes	95 (12.7)	653 (87.3)		56 (15.8)	299 (84.2)	
SC2	No	154 (11.0)	1243 (89.0)	0.45	139 (12.6)	963 (87.4)	0.042*
	Yes	30 (13.1)	199 (86.9)		22 (19.0)	94 (81.0)	
SC3	No	164 (11.3)	1286 (88.7)	0.94	146 (12.8)	992 (87.2)	0.13
	Yes	20 (11.4)	156 (88.6)		15 (18.8)	65 (81.3)	
SC4	No	178 (11.5)	1371 (88.5)	0.31	155 (13.2)	1019 (86.8)	0.93
	Yes	6 (7.8)	71 (92.2)		6 (13.6)	38 (86.4)	

Table 5 presents selected statistically significant findings from chi-square analyses. Suicidal Ideation/Behavior Variables (see Table 4 for full definitions):

SC1: Thought about death; SC2: Serious suicidal thoughts

SC3: Made plans for suicide; SC4: History of suicide attempts

Help-Seeking Variables (see Table 2 for full definitions)

HS1: Willingness to use services; HS2: Comfort discussing problems

HS3: Embarrassment about service use; HS4: Addiction service willingness

† p-values from Chi-square test (χ^2) or Fisher's exact test

* Statistically significant at $\alpha=0.05$ (two-tailed test).

NS=Not Statistically Significant.

Note: Table shows selected significant relationships. Full dataset contains all combinations of: 4 suicidal ideation variables (SC1-SC4)×4 help-seeking variables (HS1-HS4)×2 genders Percentages represent column percentages within each response category.

Discussion

The present study examined the prevalence of major depressive disorder, help-seeking attitudes, and suicidal ideation among rural youth aged 15 to 34 years in Iran, revealing several findings with substantial implications for mental health policy and intervention design in low- and middle-income countries. Our investigation documented an overall MDD prevalence of 26.2%, with a striking reversal of the typical gender pattern—males exhibited significantly higher prevalence (30.4%) compared to females (20.5%). Among individuals with MDD, men demonstrated paradoxically increased willingness to seek help relative to non-depressed men, while the association between MDD and suicidality was consistently stronger in women than men. Perhaps most concerning, individuals experiencing suicidal ideation showed reduced help-seeking intentions, revealing a critical gap in the pathway from distress recognition to service utilization. These findings underscore the complex interplay of gender, cultural context, and mental health service accessibility in shaping depression outcomes and help-seeking behaviors in rural populations.

The observed higher prevalence of MDD among men in our study contradicts the well-established global epidemiological pattern, where depression rates in women typically exceed those in men by approximately two-fold. Meta-analyses of Iranian populations have consistently reported female-to-male depression ratios ranging from 2:1 to nearly 3:1 (34, 35), with recent data from the Tehran Cohort Study documenting 45% of urban women versus lower rates in men at risk for mental disorders (36). The divergence of our findings from national patterns suggests that rural environmental and cultural contexts may fundamentally alter the expression, recognition, or reporting of depressive symptoms by gender. Several mechanisms may explain this reversal. First, the occupational stressors and economic responsibilities disproportionately borne by young men in rural settings may create unique vulnerability to depression. In traditional rural Iranian communities, men function as primary breadwinners and face intense societal pressure to provide financial security, particularly during the critical life stage of establishing families and careers. Economic instability, agricultural uncertainties, and limited employment opportunities in rural regions may precipitate depressive symptoms among men who perceive themselves as failing to fulfill prescribed masculine roles. Second, assessment bias may contribute to the observed pattern. The CIDI 2.1 instrument, while validated for the Iranian population, may capture different symptom presentations across genders. Men experiencing depression may endorse specific symptom clusters—such as irritability, aggression, sleep disturbance, and psychomotor changes—that are adequately captured by standardized diagnostic instruments, whereas women may experience depression through somatic or relational symptoms less emphasized in DSM-IV criteria. Third, selection bias in study participation cannot be entirely excluded. If depressed women in this rural context were less likely to participate in face-to-face

interviews due to stigma or social restrictions, the female MDD prevalence may be underestimated. However, the overall response rates and demographic representativeness of our sample suggest this explanation is unlikely to fully account for the gender reversal.

Our finding that men with MDD showed significantly increased willingness to seek mental health services (adjusted OR = 1.64) compared to non-depressed men appears counterintuitive given the extensive literature documenting traditional masculinity norms as barriers to help-seeking. Systematic reviews have demonstrated that conformity to masculine ideologies emphasizing emotional stoicism, self-reliance, and invulnerability creates substantial impediments to mental health service utilization among men (37, 38). However, our results suggest a more nuanced picture wherein the experience of depression itself may temporarily override masculine norms and facilitate help-seeking intentions, at least in this specific cultural and demographic context. This finding aligns with qualitative research indicating that after seeking treatment, men with depression often undergo attitudinal shifts, critically reflecting on restrictive masculine norms and adopting more salutogenic perspectives toward mental health (39). The severity of depressive symptoms may create sufficient distress to motivate help-seeking despite cultural barriers, particularly among younger men who may hold more flexible attitudes toward mental health care utilization than older generations. Alternatively, social desirability bias in responses to hypothetical help-seeking scenarios may inflate reported intentions relative to actual behavior, a limitation inherent in attitudinal surveys.

The absence of significantly increased help-seeking among women with MDD, coupled with elevated embarrassment about service use, reveals distinct gender-specific barriers operating in this population. Women with MDD were 33% more likely to report embarrassment about using mental health services, though this association did not reach statistical significance in adjusted models (adjusted OR = 1.33, $p = 0.079$). This pattern contrasts sharply with the male findings and suggests that women face qualitatively different obstacles to care. In the sociocultural context of rural Iran, women's help-seeking may be constrained by concerns about family honor, fear of social judgment, and restricted autonomy in healthcare decision-making. Research from Middle Eastern populations has documented that mental illness stigma operates particularly intensely for women, whose psychological difficulties may be attributed to personal moral failings or spiritual deficiencies rather than legitimate medical conditions (18, 19). The perception that seeking mental health services signals an inability to fulfill culturally prescribed feminine roles—as wife, mother, and family caretaker—may deter women from pursuing professional help. Moreover, practical barriers including transportation difficulties, limited mobility without male accompaniment, and lack of female mental health providers in rural areas compound attitudinal obstacles, creating multilayered impediments to service access.

Age-stratified analyses revealed developmentally

specific patterns in the relationship between MDD and help-seeking attitudes. Among men, younger adults in their early twenties with MDD demonstrated particularly strong intentions to seek help (92.5% vs. 82.1% without MDD, $P=0.018$), suggesting that depression recognition and treatment-seeking attitudes may be improving in younger male cohorts. This generational shift may reflect gradual changes in masculine norms, increased mental health literacy through educational initiatives, and reduced stigma among youth exposed to global mental health awareness campaigns. Conversely, women aged 25-29 with MDD experienced disproportionate stigma (36.5% reported embarrassment vs. 21.5% without MDD, $P=0.005$), corresponding to a life stage characterized by intense reproductive and caregiving responsibilities. This finding suggests that interventions targeting help-seeking must account for the specific developmental and social role transitions occurring across the young adult period, tailoring messaging and service delivery formats to address age-specific concerns.

The robust associations between MDD and suicidal outcomes documented in this study—with adjusted odds ratios ranging from 4.40 for thoughts about death to 7.28 for suicide attempts—align with extensive international evidence establishing depression as the predominant risk factor for suicidal behavior. Meta-analyses have consistently reported that individuals with MDD demonstrate 2.88 to 4.56 times higher odds of suicidal ideation and 3.45 to 7.34 times higher odds of suicide attempts relative to non-depressed populations (multiple sources reviewed). The magnitude of these associations in our sample parallels or exceeds those observed in Western populations, indicating that depression confers comparable suicide risk across cultural contexts despite variations in symptom expression and help-seeking patterns. Critically, our gender-stratified analyses revealed markedly stronger associations among women, with female participants with MDD showing nearly three-fold greater odds of suicide attempts (adjusted OR=11.77) compared to men with MDD (adjusted OR=4.29). This gender difference warrants careful interpretation. While suicide completion rates globally demonstrate male predominance—reflecting the “gender paradox of suicide”—non-fatal suicidal behaviors including ideation, planning, and attempts occur more frequently in women (40, 41). Our findings suggest that depression amplifies this baseline gender difference in suicidal behavior, with depressed women experiencing particularly elevated vulnerability to the ideation-to-action progression.

Several psychological mechanisms may underlie the stronger depression-suicidality link in women. Research indicates that females with depression more frequently experience comorbid anxiety, post-traumatic stress disorder, and interpersonal trauma histories—factors that independently elevate suicide risk (42). Additionally, cognitive symptoms of depression, including hopelessness, self-criticism, and perceived burdensomeness, may interact with gender-specific psychosocial stressors to intensify

suicidal cognitions. Women in rural Iranian communities face distinct pressures including domestic role conflicts, restricted social mobility, potential exposure to intimate partner violence, and limited economic independence, all of which constitute established risk factors for suicidal behavior (43). The intersection of depression with these contextual vulnerabilities may create a synergistic effect wherein psychological distress amplifies the salience of social entrapment, resulting in heightened suicidal risk. From a theoretical standpoint, these findings align with the Integrated Motivational-Volitional model of suicide, which posits that perceptions of defeat and entrapment function as proximal drivers of suicidal ideation, while volitional factors determine the transition from ideation to action. Depressed women experiencing social constraint and limited agency may perceive fewer escape routes from psychological pain, elevating both ideation and attempt likelihood.

The paradoxical finding that individuals with suicidal ideation demonstrated reduced help-seeking intentions represents perhaps the most clinically concerning result of this investigation. Among men reporting thoughts about death, help-seeking intentions decreased (85.3% vs. 88.5% without such thoughts, $P=0.035$), while stigma increased (44.6% reported embarrassment vs. 38.6%, $P=0.012$). This pattern was amplified among women, with those experiencing serious suicidal thoughts showing only 75.8% willingness to seek help compared to 84.9% among those without suicidal thoughts ($P=0.01$), alongside heightened discomfort discussing problems with professionals (85.0% vs. 91.4%, $P=0.022$) and increased stigma (36.7% vs. 25.0%, $P=0.006$). These findings illuminate a critical treatment gap wherein the individuals at highest risk for suicide—those already experiencing suicidal cognitions—simultaneously face the greatest psychological barriers to accessing potentially life-saving interventions. Recent systematic reviews have identified suicide-related stigma as a significant deterrent to help-seeking, with individuals fearing negative judgment, loss of autonomy, and involuntary hospitalization if they disclose suicidal thoughts to healthcare providers (44, 45). The perception that revealing suicidal ideation will result in coercive interventions, social exclusion, or labeling as “dangerous” creates powerful disincentives to disclosure, even among individuals genuinely desiring help. This help-negation paradox has been documented across cultures and represents a fundamental challenge to suicide prevention efforts.

The mechanisms underlying help-negation among suicidal individuals are multifactorial. At the cognitive level, suicidal states are characterized by hopelessness—a belief that nothing can improve one’s situation—which directly undermines motivation to seek assistance perceived as futile. Cognitive constriction, wherein individuals experiencing suicidal crises demonstrate narrowed thinking and difficulty generating alternative solutions, further impedes recognition that professional help might offer pathways beyond suicide (46, 47). At the interpersonal level, suicidal

individuals often experience thwarted belongingness and perceive themselves as burdens to others, cognitions that discourage reaching out for support (48). Disclosure of suicidal thoughts risks confirming one's burden status, thereby intensifying rather than relieving distress. At the societal level, suicide-specific stigma—characterized by beliefs that suicidal individuals are attention-seeking, manipulative, or morally weak—creates legitimate fears of negative social consequences upon disclosure. In the context of rural Iranian communities where mental illness stigma is pronounced, these concerns are amplified by realistic appraisals that disclosure may result in social ostracism, damaged marriageability (particularly for young women), and family dishonor.

Our findings underscore the urgent need for comprehensive, culturally adapted interventions addressing multiple levels of the mental health service pathway. At the community level, stigma reduction campaigns must specifically target suicide-related stigma, distinguishing it from broader mental health stigma. Educational initiatives should emphasize that suicidal thoughts represent treatable symptoms of mental health conditions rather than moral failings, criminal behavior, or permanent character flaws. Messaging should normalize help-seeking for suicidal crises, presenting it as a sign of strength and problem-solving rather than weakness. In rural Iranian contexts, engaging trusted community figures—including religious leaders, teachers, and traditional healthcare workers (*behvarz*)—as mental health advocates may enhance message credibility and reach. At the service delivery level, mental health systems must address structural barriers including geographic accessibility, affordability, and workforce shortages that disproportionately affect rural populations. The integration of mental health services into primary care settings, a strategy that Iran has progressively implemented, represents a promising approach for reducing stigma and improving access (29, 49). However, evidence suggests that despite integration policies, service utilization remains suboptimal, with more than 60% of Iranians with mental disorders receiving no treatment (50, 51). Strengthening primary care capacity through mental health training for general practitioners and community health workers, ensuring adequate psychotropic medication availability, and implementing proactive case-finding strategies could substantially improve treatment access.

Gender-tailored interventions appear essential given the distinct patterns observed in this study. For men, interventions should leverage the finding that depression itself may lower help-seeking barriers, designing targeted outreach to engage depressed men before suicidal crises develop. Male-specific programming that reframes help-seeking as compatible with masculine identities—emphasizing problem-solving, skill-building, and strength through adversity—has shown promise in Western contexts and warrants adaptation for rural Iranian populations. Peer-support initiatives, wherein men with lived experience of depression and recovery serve as role models, may reduce perceived stigma and normalize treatment-seeking

among male youth. For women, interventions must address both internalized stigma and structural barriers to access. Providing women-only therapeutic spaces, ensuring availability of female mental health professionals, and involving family members in psychoeducation to reduce intrafamilial stigma may enhance women's comfort accessing services. Additionally, screening for intimate partner violence and social isolation within mental health assessments for rural women with depression appears clinically warranted given the established associations between these factors and suicidality.

Crisis intervention services specifically designed for individuals with suicidal ideation require careful design to overcome help-negation. Evidence-based approaches such as the Collaborative Assessment and Management of Suicidality (CAMS) framework, which emphasizes collaborative rather than coercive engagement with suicidal individuals, may reduce disclosure fears and increase service acceptability (52). Safety planning interventions, which empower individuals to identify personal warning signs and coping strategies, offer structured yet non-judgmental approaches to suicide risk management (53). Importantly, services must balance safety concerns with respect for individual autonomy, avoiding unnecessarily restrictive interventions that may validate fears of loss of control. Training healthcare providers in empathic, non-judgmental communication when assessing suicidality, alongside clear guidelines for proportionate risk response, can foster therapeutic relationships that encourage rather than deter disclosure.

Youth-specific interventions merit particular attention given that our sample comprised individuals aged 15-34 years, a developmental period characterized by identity formation, educational transitions, and establishment of intimate relationships. School and university-based mental health programming offering accessible, low-stigma services within educational settings has demonstrated effectiveness in reaching young people otherwise unlikely to engage formal mental health systems. Gatekeeper training programs that equip teachers, coaches, and peer leaders to recognize signs of depression and suicidality and facilitate appropriate referrals can extend the reach of professional services (54). Digital mental health interventions, including smartphone applications for mood monitoring, web-based psychoeducation platforms, and telehealth counseling services, may circumvent barriers of geographic isolation and privacy concerns particularly salient in rural communities (55, 56). However, such interventions require adequate internet infrastructure and digital literacy, resources not uniformly available in rural Iranian settings.

The generalizability of our findings warrants consideration in light of several study design features and limitations. The cross-sectional design precludes causal inferences regarding the directionality of observed associations. While we interpret MDD as a risk factor for suicidal ideation and help-seeking barriers, reverse causation is plausible: individuals with untreated suicidal

thoughts may develop MDD, and negative help-seeking experiences may exacerbate depressive symptoms. Prospective cohort studies tracking temporal sequences of depression onset, help-seeking behavior, and suicidal ideation are necessary to establish causal pathways. The reliance on face-to-face interviews conducted by clinical psychologists, while ensuring diagnostic accuracy, may have introduced social desirability bias, particularly regarding sensitive topics such as suicidal thoughts and help-seeking attitudes. Anonymous self-report measures might yield different prevalence estimates, potentially revealing higher suicidality and lower help-seeking intentions. However, the structured nature of the CIDI 2.1 and the training of interviewers in non-judgmental assessment techniques are likely to minimize but could not eliminate this bias.

The geographic specificity of our sample—rural youth from the Sheshdeh region of Fars province—limits generalizability to urban Iranian populations and other Middle Eastern countries with distinct sociocultural contexts. Help-seeking attitudes and mental health service infrastructure vary substantially between rural and urban Iran, with urban residents generally experiencing greater service availability, mental health literacy, and reduced traditional masculinity norms. Replication of these findings in diverse Iranian settings, including metropolitan areas, other rural regions with different ethnic compositions (Kurdish, Azeri, Arab populations), and varying socioeconomic strata, would establish the external validity of our conclusions. Additionally, comparisons with rural populations in other low- and middle-income countries experiencing similar economic constraints and cultural stigma patterns would illuminate universal versus culture-specific determinants of help-seeking in depression.

Measurement considerations also warrant acknowledgment. The CIDI 2.1, though validated for Iranian populations, was developed based on Western diagnostic frameworks (DSM-IV/ICD-10) that may not fully capture culturally specific presentations of depression. Somatic symptom emphasis, spiritual distress, and interpersonal conflict manifestations of depression described in ethnographic research on Iranian populations may be underrepresented in standardized diagnostic instruments. The help-seeking attitude questionnaire, adapted from the National Comorbidity Survey Replication, assessed hypothetical intentions rather than actual service utilization behaviors. The intention-behavior gap in help-seeking is well-documented, with individuals reporting positive attitudes toward mental health services often failing to translate these attitudes into action when faced with actual need (57). Future research incorporating objective measures of service utilization—such as medical records, treatment adherence data, and longitudinal follow-up of help-seeking trajectories—would provide more robust evidence regarding barriers and facilitators of care engagement.

Finally, unmeasured confounding variables may influence the observed associations. Factors such as socioeconomic status, educational attainment, marital status, employment

status, access to transportation, distance to mental health facilities, previous treatment experiences, family history of mental illness, and medical comorbidities all influence both depression risk and help-seeking likelihood. While our multivariable models adjusted for age, sex, and marital status, residual confounding by unmeasured socioeconomic and contextual variables cannot be excluded. More comprehensive assessments incorporating these domains would strengthen causal inference.

Conclusion

This study reveals high MDD prevalence (26.2%) among rural Iranian youth with unexpected male predominance (30.4% vs. 20.5%). Males with MDD showed increased help-seeking intentions (aOR = 1.64), while females experienced greater stigma. MDD strongly predicted suicidal outcomes (aOR 4.40-7.28), with associations markedly stronger in females. Most critically, individuals with suicidal ideation demonstrated the help-negation paradox—reduced help-seeking and increased stigma precisely when intervention is most needed.

These findings demand targeted, gender-specific interventions: stigma reduction campaigns addressing suicide-specific stigma, accessible mental health integration into primary care, trained community health workers, and male-specific outreach. For women, interventions must provide women-centered services with female providers and address structural barriers. Crisis services should employ collaborative, non-coercive approaches like CAMS and safety planning to overcome help-negation.

Future research should employ prospective designs, qualitative methods, and rigorously evaluate culturally adapted interventions. Addressing treatment access barriers in rural youth populations represents an urgent public health imperative requiring sustained multi-level commitment.

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Competing Interests

The authors declare no conflict of interest.

Data Availability Statement

All data generated during the present study are available from the

corresponding author on reasonable request.

Ethical Approval

The Bioethics Committee of Fasa University of Medical Sciences approved all experimental procedures conducted in this study (Ethical code: IR.FUMS.REC.1403.015).

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