

PRIMARY RESEARCH

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Suicidal thoughts among university students in Ethiopia

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Abstract

Background: Suicide is a serious public health problem, responsible for 1.48% of all deaths worldwide, with suicidal ideation an important precursor. University and college students are among highly affected groups. This study aimed to determine the prevalence of suicidal ideation and to identify factors associated with suicidal ideation among university students in Ethiopia.

Methods: A random selection of 836 students was surveyed. Binary and multivariable logistic regression models were fitted, adjusting for potential confounders. Associations were measured using odds ratios (OR) and 95% confidence intervals (95% CI). Analyses were carried out using the SPSS version 20 software.

Results: The prevalence of suicidal ideation was 19.9% (95% CI 17.1–22.4%). The odds of suicidal ideation was higher among students who had mental distress (adjusted odds ratio (AOR) = 2.0, 95% CI 1.38–2.91), a family history of mental illness (AOR = 3.05, 95% CI 1.89–4.92) and for those who had low social support (AOR = 2.0, 95% CI 1.35–2.82). Financial distress (AOR = 1.59, 95% CI 1.09–2.33), Khat chewing (AOR = 1.78, 95% CI 1.05–3), and alcohol use (AOR = 1.6, 95% CI 1.05–2.42) were also significantly associated with suicidal ideation. We found no evidence of associations between suicidal ideation and gender, age, relationship status, or year of study.

Conclusions: One in five students reported suicidal ideation. There was strong evidence of associations between suicidal ideation and mental distress, family history of mental illness, low social support, financial distress, and substance use. It is, therefore, important to develop suicide prevention strategies targeting these risk factors for university students in Ethiopia.

Keywords: University students, Suicidal ideation, Risk factors

Background

Suicide is a serious public health problem, responsible for 1.48% of deaths worldwide [1]. The burden is much higher in adolescents and young adults, accounting for 8.64% of deaths among 20–24 years [1] and is the third leading cause of death among 15–24 years [2].

University and college students are among groups affected more than the general population. Suicide is the second leading cause of death among college students [3]. This may be due to the broad range of challenges faced

by university students, such as academic and social pressures [4] adaptation to a new social environment [5], and financial burdens [6, 7]. Moreover, common risk factors for suicide such as mental and substance use disorders are very common among university students [6, 8–12].

Suicidal thoughts, also known as suicidal ideation, are considered to be an important precursor to suicide [2]. At one American university, 12% of students had experienced suicidal thoughts during their studies, with 2.6% reporting persistent suicidal ideation [13]. Another study among medical students in Austria and Turkey revealed that 11% of Austrian students and 12% of Turkish students reported suicidal ideation during the 12 months prior to the survey [14]. Furthermore, a meta-analysis of studies conducted among college students in China

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reported an overall pooled prevalence of suicidal ideation of 10.72% (95%CI 8.41–13.28%) [15].

Higher prevalence of suicide ideation has been reported among university students in Africa, reaching 47.5% among Botswana students [16] and 32.3% among South African medical students [17]. However, there have been no reports of the prevalence of suicidal ideation among university students in Ethiopia.

Suicide prevention efforts depend largely on early identification and adequate treatment of high-risk populations. Although studies report depression as a significant risk factor for suicidal ideation among university students [18], other mental disorders (such as anxiety, adjustment disorder, schizophrenia, and affective dysregulation), substance use or dependence, family history of suicide or psychiatric illness, low social support, sexual violence, loss of close friends or family, and conflict have also been linked [2, 13, 18–22].

Although there are some studies among university students in other African countries, the results are limited by study design issues such as small sample size and the use of convenience samples. In addition, risk factors may vary between countries. Therefore, this study aimed to determine the prevalence of suicidal ideation and to identify factors associated with suicidal ideation among university students in Ethiopia. Results from this study will help in developing evidence based mental health promotion and suicide prevention programs.

Methods

Study design: Institution-based cross-sectional study.

Study setting: The study was conducted at University of Gondar, in Northwest Ethiopia.

Sampling size and sampling technique: Systematic random sampling was used to select study participants Eight hundred and thirty-six undergraduate students were included in the study.

Data collection tools and procedures

A self-administered questionnaire was used to collect data from participants. Suicidal thought was recoded into a binary variable to denote the presence or absence of suicide ideation in the 12 months prior to the survey. The self-reporting questionnaire (SRQ-20) was used to determine the magnitude of mental distress over the previous month; this was dichotomised using a cut-off score of 8 or more to indicate mental distress. The tool is validated in Ethiopia [23]. The 12-item Multidimensional Scale of Perceived Social Support tool (MSPSS) was used to assess level of social support (none/low or medium/high) in students [24].

Current use (at least once in the month preceding the study) of alcohol, cigarettes, and khat was self-reported by participants.

Data analyses

Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to present socio-demographic data and the prevalence of suicidal ideation. Binary logistic regression was used to identify factors associated suicidal thought. Multivariable logistic regression models were then fitted to control for the possible contribution of confounders. A significance level of $p < 0.05$ was used as the cut-off value for all statistical significance tests. The associations were measured using Odds Ratios (OR) and 95% confidence intervals (95% CI). All the analyses were carried out using the SPSS version 20 software.

Results

Socio-demographic characteristics of the respondents

A total of 836 students participated in the study, of whom 538 (64.4%) were male. The mean (\pm SD) age of respondents was 20 (\pm 1.54) years. Nearly, 65% of the respondents were from urban backgrounds (Table 1).

Prevalence of suicidal ideation

The prevalence of suicidal ideation in the total sample was 19.9% (95% CI 17.1–22.4%). The prevalence for

Table 1 Sociodemographic characteristics of the respondents

Socio-demographic characteristics	n	%
Sex		
Male	538	64.4
Female	298	35.6
Age (in years)		
\leq 19	160	19.1
20–24	658	78.7
25 and above	18	2.2
Residence		
Urban	544	65.1
Rural	292	34.9
Year of study		
1st	286	34.2
2nd	250	29.9
3rd and above	300	35.9
Relation ship		
Single	339	40.6
In relation	497	59.4

females (21.5%) was not significantly different to that for males (19%; $p = 0.72$).

Suicidal ideation among students with mental and substance use disorders

Of the total sample, 342 (41%) received SRQ-20 scores indicative of mental distress and 97 (11.6%) reported a family history of mental illness. Among individuals with suicidal ideation, 57.8% reported mental distress in the previous month. The prevalence of suicidal ideation was higher among those with a family history of mental illness (24.7%, $p < 0.0001$).

Among the respondents, 272 (32.5%) used alcohol, 114 (13.6%) chewed khat and 55 (6.6%) smoked cigarette in the month preceding the study. The prevalence of suicidal ideation was higher for those who chewed khat (29.8%; $p = 0.03$) and drink alcohol (27.7%; $p = 0.05$) (Table 2).

Factors associated with suicidal ideation among university students

The multivariate logistic regression analysis revealed that the odds of suicidal ideation was higher among students who had mental distress (adjusted odds ratio (AOR) = 2.0, 95% CI 1.38–2.91), family history of mental illness (AOR = 3.05, 95% CI 1.89–4.92), and for those who had low social support (AOR = 2.0, 95% CI 1.35–2.82). Financial distress (AOR = 1.59, 95% CI 1.09–2.33), Khat chewing (AOR = 1.78, 95% CI 1.05–3), and alcohol use (AOR = 1.6, 95% CI 1.05–2.42) were also significantly associated with suicidal ideation. We found no evidence of associations between suicidal ideation and gender, age, relationship status, or years of study (Table 3).

Discussion

This is the first study assessing suicidal ideation and suicidal risk among University students in Ethiopia. One in five students reported suicidal ideation in the 12 months preceding the study, which is almost two times higher than the existing literature analysing suicidal ideation during the same period of time in other non African student populations. For example, a study among medical students in Austria and Turkey reported prevalence of 11.3 and 12%, respectively [14]. Furthermore, the prevalence of 10.7% was reported for university students in China [15] and Portugal [25]. However, this finding was low compared with results of similar studies in Africa. For example, it was much lower than the prevalence of suicidal ideation reported among Botswana students (47.5%) [16]. Similarly, higher prevalence suicidal ideation has been reported among South African medical students (32.3%) [17]. These variations may be attributed to the difference on factors influencing suicide such as socioeconomic, culture, and lifestyle factors [26].

Table 2 Prevalence of suicidal ideation among Ethiopian university students, by mental distress, family history of mental illness, and current substance use

Variables	Suicidal ideation		p value
	Yes, number (%)	No, number (%)	
Mental distress			
Yes	96 (28.1)	246 (71.9)	< 0.0001
No	70 (14.2)	424 (85.8)	
Family history of mental illness			
Yes	41 (42.3)	56 (57.7)	< 0.0001
No	125 (16.9)	614 (83.1)	
Current alcohol user			
Yes	64 (23.5)	208 (76.5)	0.05
No	102 (18.1)	462 (81.9)	
Current cigarette smoker			
Yes	15 (27.3)	40 (72.7)	0.16
No	151 (19.3)	630 (80.7)	
Current khat chewer			
Yes	34 (29.8)	80 (70.2)	0.005
No	132 (18.3)	590 (81.7)	

In this study, mental distress was strongly associated with suicidal ideation. The odd of suicidal ideation was two times higher among students who had mental distress than those without. This aligns with numerous research findings, where mental health problems significantly correlated with suicidal thought [10, 18, 19, 27]. This may be due to the impact of mental disorders on the individual's daily performance and social relationships, which may in turn lead to suicidal ideation [27]. Moreover, the odds of suicidal ideation were three times higher for respondents with a family history of mental illness. This finding is in line with another study in which family history of psychiatric illness increased the risk of suicidal ideation [22]. However, it is important to note that the family history of mental illness is reported using a single question, rather than using formal diagnostic instruments.

The study also found that suicidal ideation was significantly associated with current substance use. Those students who chewed khat or use alcohol were 1.8 and 1.6 times, respectively, more likely to have had suicidal thought than to those who did not. This may be that students who drink alcohol or chew khat have characteristics that also dispose them towards suicidal ideation or that the use of alcohol and khat may contribute to depression and/or suicidal ideation. Associations between substance use and suicidal behaviour have been well documented [2, 10, 13, 28].

In agreement with the previous findings [2, 20, 29–31], the current study also found that lack of social support

Table 3 Bivariate and multivariate logistic regression models of suicidal ideation in Ethiopian university students

Variables	COR, 95% CI	AOR, 95% CI	p value
Gender			
Male	Ref		
Female	1.17 (0.82–1.66)	1.07 (0.73–1.58)	0.72
Age (years)			
17–19	Ref		
20–24	2.46 (0.85–7.14)	2.62 (0.83–8.22)	0.11
≥25	1.97 (0.73–5.36)	2.41 (0.84–6.91)	0.10
Residence			
Rural	Ref		
Urban	1.22 (0.85–1.76)	1.49 (0.99–2.21)	0.52
Year of study			
1st year	Ref		
2nd year	1.18 (0.78–1.79)	1.09 (0.69–1.73)	0.71
3rd year	0.87 (0.58–1.31)	0.87 (0.56–1.34)	0.52
Relationship status			
Single	0.7 (0.5–0.98)	0.71 (0.49–1.02)	0.06
In relationship	Ref		
Religious practice			
Yes	Ref		
No	1.23 (0.74–2.03)	1.54 (0.89–2.67)	0.13
Mental distress			
Yes	2.36 (1.67–3.34)	2.0 (1.38–2.91)	< 0.0001***
No	Ref		
Family history of mental illness			
Yes	3.60 (2.30–5.62)	3.05 (1.89–4.92)	< 0.0001***
No	Ref		
Social support			
Non or low	2.21 (1.56–3.1)	2.0 (1.35–2.82)	< 0.001**
Moderate or high	Ref		
Current cigarette smoker			
Yes	1.56 (0.84–2.91)	1.09 (0.52–2.31)	0.82
No	Ref		
Current kaht chewer			
Yes	1.9 (1.22–2.90)	1.78 (1.05–3.0)	0.03*
No	Ref		
Current alcohol user			
Yes	1.39 (0.91–1.93)	1.60 ((1.05–2.42)	0.03*
No	Ref		

Ref reference category, COR crude odds ratio, AOR adjusted odds ratio

* $p < 0.05$, ** $p < 0.001$, *** $p < 0.0001$

was an important risk factor for suicidal ideation. Those students with no or low social support were two times at high risk of suicidal thought than those with high social support. This may be through social support increasing a feeling of belonging and thus reducing the risk of suicidal

thought [31]. Conversely, students who feel loneliness may have thoughts of suicide.

Finally, this study showed that suicidal ideation was associated with financial distress. Similar studies conducted among university students in the United States and Poland found that financial burden was significantly related to suicidal thoughts [32, 33].

To our knowledge, this is the first study to assess suicidal ideation among university students in Ethiopia. Importantly, the study also measures important risk factors for suicidal ideation, such as mental distress, poor social support, substance use, and family history of mental disorders. Furthermore, it addresses some of the limitations of previous research (i.e., the use of convenience sampling and small sample sizes). Despite these strengths, the study has some limitations. As the study was cross section, causal relationships could not be determined. Furthermore, this study was based on self-reported data, which may reduce objectivity and introduce the possibility of reporting bias. Finally, the use of retrospective items in the questionnaire may have incurred recall bias

Conclusions

Suicidal ideation was found to be high. Future research efforts could be directed towards replicating these results. There was strong evidence of associations between suicidal ideation and mental distress, family history of mental illness, low social support, financial distress, and substance use. It is, therefore, important to develop suicide prevention programs and strategies for university students in Ethiopia. Programs aimed at preventing suicide should address these significant risk factors.

Abbreviations

AOR: adjusted odds ratio; COR: crude odds ratio; OR: odds ratio; SRQ-20: self-reporting questionnaire; SPSS: statistical package for the social sciences; MSPSS: multidimensional scale of perceived social support; 95% CI: 95% confidence interval.

Authors' contributions

BAD conceived and designed the study. DZA collected the data as a member of the research project. BAD and MAW performed the statistical analysis and drafted the original paper. BBB, BTT, and DZA critically reviewed the manuscript. All authors read and approved the final manuscript.

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Acknowledgements

The authors would like to acknowledge the study participants for their dedicated cooperation. We would like to thank the University of Gondar for providing ethical clearance. We would like to extend our heartfelt gratitude to Dr. Caroline Salom for editing the manuscript.

Competing interests

The authors declare that they have no competing interests.

Availability of data and materials

All data generated or analyzed during this study are included in this published article.

Consent for publication

Not applicable.

Ethics approval and consent to participate

The study was approved by the Institute Review Board (IRB) of the University of Gondar and written informed consent was obtained from all participants.

Funding

The authors received no specific funding for this work.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Received: 20 November 2017 Accepted: 25 December 2017

Published online: 04 January 2018

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