



Framework for suicide prevention among college students in low- and middle-income countries

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ABSTRACT

Suicide prevention in low- and middle-income countries (LMICs) faces unique challenges due to limited epidemiological data and contextual variations. This article highlights the urgency of addressing suicide, the second leading cause of death among individuals aged 15 to 29 globally, emphasizing the heightened vulnerability during college years. While high-income countries (HICs) have established surveillance systems, LMICs struggle due to inadequate resources, cultural stigma, and competing health priorities. The scarcity of reliable data hinders the formulation of evidence-based prevention programs and national policies.

The article advocates for the implementation of surveillance systems on university campuses, utilizing cost-effective online mental health surveys like the WHO International College Student Initiative. Understanding the etiology of suicidal behavior is crucial, with psychosocial stressors affecting both HIC and LMIC college students, but the latter facing additional challenges like gender-based violence and financial stress. Cultural nuances further necessitate qualitative research to design context-sensitive prevention interventions.

Access to mental healthcare is identified as a key preventive measure, especially on campuses, but challenges persist in encouraging help-seeking behavior. Digital interventions are proposed as promising solutions, considering their efficacy and potential to bridge treatment gaps in resource-constrained environments.

KEYWORDS: Student Health Services (MesH); Young Adult (MesH); College (Non-MesH); Suicidal behaviour (Non-MesH); Suicide, Attempted (MesH); Suicidal Ideation (MesH); Suicide Prevention (MesH); Developing Countries (MesH); Low- and Middle-Income Countries (Non-MesH); Pakistan (MesH).

THIS ARTICLE MAY BE CITED AS: Khan A, Yousafzai AW, Bantjes J. Framework for suicide prevention among college students in low- and middle-income countries. *Khyber Med Univ J* 2024;16(3):270-73. <https://doi.org/10.35845/kmuj.2024.23563>

Suicide is a major public health concern, claiming approximately 800,000 lives worldwide each year.¹ Rates of suicidal behaviour are particularly high among adolescents and young adults,^{2,3} contributing to 6% of deaths in this age group worldwide.⁴ Among individuals aged 15 to 29, suicide is the fourth leading cause of death,⁵ with the onset of suicidal behavior typically occurring in late adolescence.⁶ These statistics emphasize the importance of early identification and intervention during this critical developmental period, highlighting colleges as key settings for implementing targeted suicide prevention strategies.^{7,8}

According to Mortier P, et al., a study on suicidal thoughts and behaviors among first-year college students found a lifetime prevalence of 32.7% for suicidal

ideation, 17.5% for suicide planning, and 4.3% for suicide attempts. The 12-month prevalence rates were 17.2% for suicidal ideation, 8.8% for planning, and 1.0% for attempts.⁸ Although data on the prevalence of suicidal behaviour in low- and middle-income countries (LMICs) is limited, emerging evidence suggests that rates of non-fatal suicidal behavior may be even higher than those typically reported in high-income countries (HICs).⁹ For instance, a study of first-year students in South Africa reported 12-month prevalence rates of 40.9% for suicidal ideation, 22.3% for suicide planning, and 3.9% for suicide attempts.¹⁰

The need for reliable epidemiological data: Reliable and timely epidemiological data are the cornerstone of evidence-based suicide

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prevention. However, reliable data on adolescent suicidal behavior is scarce in many countries, especially in LMICs. Several factors contribute to the lack of suicide data from LMICs, including inadequate surveillance systems, cultural factors such as stigma, legal factors like the criminalization of suicidal behavior that deter reporting, and competing health demands from infectious diseases like Human Immunodeficiency Virus, Tuberculosis, and Malaria, which make suicide prevention a lower priority for health agencies.

The shortage of accurate epidemiological data in LMICs impedes suicide prevention efforts, creating a significant barrier to establishing priorities and planning evidence-based programs. This is evident from the lack of national suicide prevention policies in many LMICs.¹¹ Despite global evidence indicating that the college years are a high-risk period for mental health issues, there is a paucity of data on college student mental health in Pakistan, even though suicide rates are suspected to be very high. Most suicide prevalence studies in Pakistan have focused on medical students due to easier access, reduced stigma around mental health among this group, and their greater willingness to disclose vulnerability and seek help. Multiple studies report over 30% prevalence of suicidal ideation in the past year among

medical students.^{12,13} With proper knowledge and resources, assessing and mapping the prevalence of suicidal ideation and deliberate self-harm among the broader college student population in Pakistan should become a national priority, given their lack of awareness and access to resources.

Establishing surveillance systems to monitor suicidal behaviour on university campuses and collecting accurate data on risk and protective factors would enable the development of targeted interventions that address the specific needs of students in LMICs. This can be achieved efficiently and affordably through online mental health surveys, similar to those conducted by the World Health Organization's International College Student Initiative (WHO-ICSI),¹⁴ which utilized the methodologies of the WHO World Mental Health Surveys to assess the mental health care needs of college students across the globe.¹⁵

Understanding the etiology of suicidal behaviour among college students is crucial for designing effective suicide prevention programs in LMICs. In HICs, the elevated rates of suicidal behavior among college students are often linked to psychosocial stressors characteristic of this developmental stage, such as increased academic pressure, substance use, bullying, insufficient conflict resolution skills, and the stigma surrounding mental health care access.^{16,17} These factors undoubtedly contribute to suicidal behaviour among college students in LMICs as well. However, additional contextual factors are likely particularly important in low-resource settings, such as gender-based violence, food and housing insecurity, and financial stress. Understanding the specific context in which students in LMICs experience suicidal behaviour will enable the development of context-sensitive suicide prevention interventions tailored to these settings.

Understanding the cultural context of suicide: There is growing appreciation for the situated meanings that suicidal behaviour holds and the role of culture in the etiology of suicide,^{18,19} as well as the importance of documenting first-person narratives of suicidal individuals' lived experience.²⁰ Qualitative research, including

ethnographies, of suicidal behaviour in colleges in LMICs will provide insight into the role of cultural factors, like gender roles, norms and religious beliefs. Without this kind of nuanced contextual knowledge, it will not be possible to design culturally appropriate suicide prevention interventions.

Promoting help-seeking and access to mental healthcare: It is well understood that psychopathology is strongly associated with suicidal behavior,²¹ underscoring the importance of providing accessible, affordable, and evidence-based mental healthcare services on college campuses to prevent suicide. A systematic review and meta-analysis found that individuals with a mental disorder face an almost eight-fold higher risk of suicide compared to those without a mental disorder.²² However, the association between psychopathology and suicidal behaviour appears to be less pronounced in many LMICs. For instance, psychological autopsy studies in China have reported that less than 50% of individuals who died by suicide had a diagnosed mental disorder,²³ while similar studies in India found mental disorders in fewer than 40% of suicide completers.²⁴ Nonetheless, improving access to mental healthcare remains a critical component of suicide prevention both in the general population²⁵ and among students.⁷

Despite this, young people experiencing suicidal thoughts often hesitate to seek help, are less likely to access formal treatment, and frequently miss scheduled appointments.¹⁶ In Canada and the USA, a national survey of college counselling centre directors revealed that 80% of students who died by suicide on campus had never used campus-based counselling services.²⁶ Even when these services are available at no cost, many students do not utilize them due to a lack of knowledge about where to go²⁷ and time constraints.¹⁷

Future research should explore the barriers and facilitators to accessing mental health services on college campuses in LMICs and identify sustainable treatments for common mental disorders that can be delivered in resource-constrained environments. Digital interventions may offer

particular promise for closing the mental health treatment gap on college campuses in LMICs, as evidence suggests these can be as effective as standard treatments for mild to moderate common mental disorders.^{28,29} The need for effective and affordable campus-based mental health services is especially important given the high rates of common mental disorders reported in this population.³⁰

Collaboration and cooperation: Collaboration and cooperation across university campuses in LMICs will be essential to achieve economies of scale and make campus-based interventions affordable in low-resource settings. Additionally, such collaboration can enable economies of scope, potentially making a broader range of interventions available to college students. Establishing a network of researchers and practitioners dedicated to promoting student mental health in LMICs should be a priority for suicide prevention. This network could not only develop sustainable interventions but also test them in controlled and pragmatic trials. A focus on implementation science will be key to the effectiveness of such a collaborative network, facilitating the dissemination of evidence-based suicide prevention interventions and promoting their sustained inclusion in everyday practices and policies on college campuses.³¹

However, establishing research networks in LMICs presents numerous challenges, like inadequate funding, heavy clinical workloads, limited research support staff, and insufficient research infrastructure and capacity.^{32,33} Addressing these challenges will be crucial to the success of collaborative efforts in improving student mental health and preventing suicide in these settings.

CONCLUSION

Suicide prevention on college campuses in LMICs is crucial, given the high rates of suicidal behaviour and common mental disorders among this population. However, intervention efforts are hindered by a lack of reliable epidemiological and context-sensitive data. Advancing suicide prevention in these settings requires the

establishment of surveillance systems, understanding the cultural context in which student suicides occur, and promoting access to sustainable and effective interventions. Creating research networks would facilitate knowledge sharing and advance research and practice in this important yet neglected field.

Given that suicide is the second leading cause of death among individuals aged 10-34 years, it is imperative for countries like Pakistan, where three-quarters (75%) of the population is under the age of 35 years, to prioritize suicide prevention as a national issue.

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CONFLICT OF INTEREST

Authors declared no conflict of interest, whether financial or otherwise, that could influence the integrity, objectivity, or validity of their research work.

GRANT SUPPORT AND FINANCIAL DISCLOSURE

Authors declared no specific grant for this research from any funding agency in the public, commercial or non-profit sectors

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