Comprehensive approaches to suicide prevention in undergraduate students: A scoping review of psychological, social, and institutional strategies

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Abstract

Background: Suicide represents a significant mental health issue worldwide, particularly among undergraduate students, and is intensified by various psychological, social, and institutional stressors. Despite heightened awareness of the problem, existing prevention strategies frequently concentrate on discrete interventions while overlooking broader systemic and societal factors that influence student well-being.
Purpose: This scoping review seeks to investigate current suicide prevention methods aimed at undergraduate students by organizing these strategies into three main domains: psychological, social, and institutional.
Methods: The research adhered to Arksey and O'Malley's (2005) framework for scoping reviews as well as PRISMA-ScR guidelines. A comprehensive search was performed across numerous databases—such as PubMed, ScienceDirect, ProQuest, and Google Scholar—for studies published between 2010 and 2024. The inclusion criteria targeted interventions specifically designed for undergraduate populations utilizing either psychological or social approaches within an institutional context. Thematic synthesis facilitated the categorization of intervention types while descriptive statistics provided a summary of study characteristics.
Results: Seventeen studies were included in this review that assessed suicide prevention initiatives across different levels. Psychological approaches like cognitive-behavioral therapy (CBT), digital mental health resources, along with peer support programs demonstrated considerable effectiveness in reducing suicide risk and improving overall mental wellness. Social elements such as family involvement, cultural sensitivity, and community-based programs were identified as vital contributors to emotional resilience enhancement. Institutional measures—including gatekeeper training sessions, crisis response policies, and adaptable academic accommodations were highlighted as essential components necessary for fostering supportive environments within universities. Importantly, "digital"mental health solutions are gaining traction; although they present scalable opportunities for improvement.
Conclusion: The study emphasizes the need for a comprehensive approach to suicide prevention in university settings, involving psychological, social, and institutional strategies. Future efforts should focus on building digital-human hybrid models that strengthen early detection and empathetic engagement.

Keywords: higher education; mental health interventions; suicide prevention; undergraduate students

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Introduction

Suicide among undergraduate students has emerged as a critical public health concern, with rising instances of suicidal ideation and attempts reported globally (World Health Organization [WHO], 2021). College students encounter numerous stressors, including academic pressures,

social expectations, and emotional challenges, which frequently culminate in mental health issues such as depression, anxiety, and suicidal inclinations (Auerbach et al., 2018). Studies indicate that approximately 10–15% of university students experience suicidal thoughts annually, with 1–2% making suicide attempts each year (Mortier et al., 2018; Eskin et al., 2016). Significant contributors to suicidal behavior among this demographic encompass emotional distress, substance abuse, lack of adequate social support, and the weight of academic demands (Garlow et al., 2008; Ribeiro et al., 2018). Furthermore, documented variations in suicide risk correlate with factors such as gender identity, cultural background, and access to mental health resources (Arnett et al., 2014). Given these alarming trends, it is essential for universities and policymakers to adopt effective suicide prevention strategies. These may include mental health screenings, accessible counseling services, and peer support programs (Lipson et al., 2019; Liu et al., 2019). The interplay between these elements often creates a complex web of vulnerabilities that heighten the risk of suicide.

Conventional mental health interventions such as counseling services and crisis hotlines, are crucial for providing immediate support. Nonetheless, their effectiveness is frequently compromised by obstacles like stigma surrounding mental health issues, limited service availability, and inadequate coordination with broader institutional and community support frameworks (Eisenberg et al., 2013; Zalsman et al., 2016). Stigmatization remains a significant barrier that prevents individuals from seeking assistance due to apprehensions about judgment or discrimination (Clement et al., 2015). Accessibility challenges—including geographical barriers and financial constraints—further restrict the utilization of these services, particularly in rural or disadvantaged regions (Andrade et al., 2014). Additionally, the disjointed nature of mental health services across educational institutions, workplaces, and community organizations often results in fragmented care that diminishes intervention efficacy (Kral et al., 2018). Consequently, there is an urgent need for comprehensive suicide prevention strategies that address psychological, social, and institutional dimensions. Integrating digital mental health tools with community-based initiatives and policy-driven approaches is vital for establishing a more accessible and stigma-free supportive system (Luxton et al., 2012; Torous et al., 2021).

Suicide prevention refers to a series of evidence-based strategies aimed at reducing suicidal ideation, suicide attempts, and deaths by suicide through early detection, timely intervention, and sustained support (World Health Organization [WHO], 2023; Niederkrotenthaler et al., 2022; Zalsman et al., 2016). In this study, suicidal ideation is defined as the presence of thoughts about self-inflicted harm or death, while suicide prevention interventions encompass both psychological and social approaches implemented at the individual, community, and institutional levels (Klonsky et al., 2019; Wasserman et al., 2021). These definitions are provided to ensure conceptual clarity for readers who may be less familiar with suicide prevention terminology.

Current suicide prevention initiatives targeting undergraduate students frequently emphasize individual-level strategies such as therapy or medication (Cuijpers et al., 2019). While these approaches are valuable in their own right, they tend to neglect the wider social and institutional factors influencing suicide risk. For instance, peer support networks on campuses along with proactive policies from faculty members are often underutilized despite their potential to foster a supportive atmosphere for vulnerable students (Horgan et al., 2016; Lattie et al., 2019). Moreover, the insufficient integration of psychological support with social and institutional measures can lead to ineffective prevention efforts characterized by fragmentation (Klonsky et al., 2018). This gap highlights the necessity for a holistic methodology that merges individual assistance with systemic reforms aimed at enhancing mental health awareness and resilience within college environments. Therefore, this scoping review is crucial because previous reviews have been limited in scope, focusing predominantly on individual-level strategies while lacking integration of psychological support with social and institutional efforts. These gaps highlight the need for a more comprehensive mapping of suicide prevention approaches for undergraduate students to better inform the development of future campus-based interventions.

This scoping review intends to compile existing research on psychological, social, and institutional methods for preventing suicide among undergraduate students. It draws upon theoretical frameworks such as the Interpersonal Theory of Suicide (Joiner, 2005) alongside the Stress-Vulnerability Model (Zubin & Spring, 1977), both emphasizing how individual vulnerabilities interact with environmental stressors contributing to suicide risk. Additionally, the Public Health Framework adopts a multi-tiered perspective underlining the significance of addressing risk factors across individual, social, and institutional levels. These frameworks advocate for an integrated approach combining psychological,social,and institutional tactics tailored to effectively mitigate student suicide risks.

Through analysing current intervention practices, this study aims to uncover best practices, rising trends, and areas needing further research within this field. The outcomes have significant implications for shaping institutional policies improving mental health services while fostering campus environments centered on student well-being. The specific objectives include: 1) Mapping existing psychological, social, and institutional strategies related to suicide prevention among undergraduate students.; 2) Identifying effective practices and

emerging interventions within higher education contexts.; 3) Highlighting gaps in both research and practical applications, to lay groundwork for future investigations.

Materials and Methods

Study Design

This scoping review was carried out in accordance with the framework developed by Arksey and O'Malley (2005) and subsequently refined by Levac et al. (2010). The methodology comprises five key steps: (1) formulating the research question, (2) identifying pertinent studies, (3) selecting studies based on established criteria, (4) extracting and organizing data, and (5) summarizing and presenting pivotal findings. This method was selected to systematically investigate existing literature concerning suicide prevention strategies aimed at undergraduate students while pinpointing research gaps that warrant further exploration. Adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews guidelines (PRISMA-ScR), as outlined by Tricco et al. (2018), ensured methodological transparency and rigorous reporting.

Search Strategy

The scoping review followed the PRISMA-ScR guidelines. A thorough literature search was conducted utilizing various electronic databases such as PubMed, Science Direct, ProQuest, and Google Scholar to find studies published from 2010 through 2024. The search strategy incorporated both controlled vocabulary terms ((MeSH terms)) along with keywords while employing Boolean operators like AND/OR to refine results effectively. Essential search phrases included "suicide prevention," "undergraduate students," "mental health interventions," "psychological support," "social support," "institutional policies," and "university mental health programs." Only peer-reviewed journal articles written in English were considered within this review scope; additionally, reference lists of qualifying articles alongside previous systematic reviews were manually scrutinized for other relevant sources. To enhance comprehensiveness in searching efforts a consultation with a research librarian took place.

Inclusion and Exclusion Criteria

The following inclusion criteria guided which studies were accepted into the review: 1) Focused specifically on suicide prevention strategies tailored for undergraduate students. 2) interventions targeting suicidal ideation, behavior, or risk among university students. 3) Examined psychological or social approaches aiming at reducing suicide risk. 3) Empirical articles using quantitative or qualitative methodology that have been peer-reviewed. 4) Published between 2010–2024 in English. Conversely, exclusion criteria encompassed: 1) Studies addressing populations outside those of undergraduate students, such as high schoolers or general adult demographics. 2) Research centred mainly around postvention measures rather than preventative tactics. 3) Articles categorized merely as commentaries, opinion pieces, editorials, case reports, or conference abstracts lacking original empirical findings. 4) Studies without publicly accessible full-text versions or failing specifically report concrete suicide intervention methods. 5) studies focused solely on non-suicidal self-injury, 6) commentaries or editorials, and 7) non-university populations. Studies were categorized into three domains: (1) individual-level interventions (e.g., CBT, mindfulness, resilience training), (2) social and peer-based interventions, and (3) institutional or digital-based prevention models.

Data Extraction

To maintain consistency during data capture processes, a structured extraction framework was created capturing essential study details accurately. Extracted information comprised authorship attributes including publication year, design specifics regarding methodology involved, population characteristics paired sample size descriptions, detailed accounts related each intervention examined primarily observed outcomes coupled any limitations noted throughout investigation process. Two independent reviewers performed extractions cross-referenced entries ensuring accuracy validating integrity extracted content where discrepancies occurred consensus facilitated via third reviewer's involvement.

Quality Assessment

Methodological rigor across included publications assessed using appropriate evaluative tools corresponding respective designs employed. For instance Joanna Briggs Institute Critical Appraisal Checklist utilized assess quality among cohort-based cross-sectional qualitative investigations Moola et al. (2020), randomized controlled trials evaluated through Cochrane Risk Bias Tool Higgins et al. (2011). Each individual piece classified low moderate high-risk bias categories according predefined evaluation standards although no exclusions applied solely due identified methodological shortcomings consistent principles underpinning scoping reviews approach taken here.

Data Analysis & Synthesis

Extracted datasets underwent thematic synthesis analysis revealing recurring patterns present strategic initiatives targeting suicides preventive practices. Findings organized three core themes: First theme revolves around psychological intervention techniques inclusive cognitive-behavioural therapy (CBT) digital mental wellness instruments peer-support networks formed second category describes sociocultural factors involving family engagement community-driven programming

Table 1. Characteristics of included studies (n=17)

Author(s) & Year	Study Design	Sample	Instrument	Intervention Name	Approach	Duration	Content	Findings
Worsley et al. (2022)	Systematic review	Review of multiple interventions in higher education settings	Analysis of intervention effectiveness	Various institutional and psychological interventions	Institutional, psychological	Varied intervention durations	Institutional policies, mental health services, digital interventions	Multi-component interventions improve mental health and reduce suicide risk
Horgan et al. (2020)	Qualitative study	30 undergraduate students	Semi-structured interviews	Peer support for mental health	Peer-led, social support	Ongoing peer support programs	Peer-led discussions, emotional support	Peer support reduces stigma and enhances help-seeking behaviors
Lattie et al. (2019)	Systematic review	Various digital mental health interventions	Evaluation of digital mental health interventions	Digital mental health interventions	Digital, psychological	Varied based on intervention type	Online CBT, self-guided digital mental health tools	Digital interventions effectively reduce anxiety and depression
Lipson et al. (2019)	Longitudinal analysis	National data from U.S. college students	Survey on mental health service utilization	Tracking mental health trends	Policy-level, survey-based	10-year trend analysis (2007–2017)	Analysis of increased mental health service use	Increasing mental health service utilization over a decade
Wang et al. (2023)	Randomized controlled trial (RCT)	University students (exact number unspecified)	e-Mental health intervention assessment	e-Mental Health Intervention	Digital mental health support	Short-term intervention (exact duration unspecified)	Co-designed digital support tools	e-Mental health programs can improve student mental health
Mortier et al. (2018)	Meta-analysis	60,000+ students from 19 countries	Standardized mental health surveys	WMH-ICS project	Survey-based epidemiological research	Cross-sectional meta-analysis	Prevalence of suicidal ideation and behavior	17.2% of students experienced suicidal ideation; 2.8% attempted suicide
Spafford et al. (2024)	Systematic review & meta-analysis	15 gatekeeper training studies	Assessment of gatekeeper training impact	Gatekeeper training programs	Gatekeeper intervention	Varied training program durations	Training programs for suicide prevention	Gatekeeper training improves knowledge and intervention skills
Stanley et al. (2018)	RCT	1,200 participants, including college students	Safety Planning Intervention (SPI) assessment	Safety Planning Intervention (SPI)	Safety planning, crisis intervention	Follow-up intervention compared to usual care	Safety planning techniques for crisis intervention	SPI significantly reduces suicidal behaviors

Cont. Table 1. Characteristics of included studies (n=17)

Author(s) & Year	Study Design	Sample	Instrument	Intervention Name	Approach	Duration	Content	Findings
Torous et al. (2021)	Review	Various digital mental health approaches	Analysis of mental health technology adoption	Digital mental health support	Digital mental health enhancement	Analysis of past and present interventions	Use of technology for mental health support	Digital approaches are effective but require integration with traditional care
Kral & Kidd (2018)	Community-based participatory research	University students and local community groups	Community-driven research methods	Community engagement for suicide prevention	Community-based participatory approach	Long-term community engagement	Community-driven suicide prevention initiatives	Community involvement is key to effective suicide prevention
Fajarwati (2023)	Qualitative study	University faculty and students in Indonesia	Interviews, thematic analysis	University Suicide Prevention Program	Psychological and social	Ongoing university initiative	University-led suicide prevention through faculty-student collaboration	Effective in fostering collaboration but requires institutional support
Hjelvik et al. (2022)	Intervention study	Medical students	Workshop participation and feedback surveys	Peer-to-Peer Suicide Prevention Workshop	Peer-support and psychological	Single-session workshop	Medical students trained to identify and support peers at risk	Improved peer intervention skills and awareness of suicide risk
Hasimoto et al. (2021)	Quasi-experimental study	University teachers in Japan	Pre-post intervention survey	Gatekeeper Training for University Teachers	Educational and gatekeeping	Multi-session program	University teachers trained to recognize and intervene in suicide risk cases	Increased confidence and knowledge among university teachers in suicide prevention
Mariyati (2020)	Experimental study (RCT)	Undergraduate students with suicidal ideation	Psychological assessment tools	Group Cognitive Therapy for Suicide Prevention (GCT-SP)	Cognitive therapy	8-week program	CBT-based group intervention to reduce suicidal ideation	Significant reduction in suicidal ideation among participants
Nugraha (2020)	Educational intervention study	College students in Indonesia	Infographic-based learning assessment	Infographic-Based Suicide Prevention Education	Educational media intervention	One-time educational intervention	Animated infographics as an educational medium for suicide prevention	Enhanced understanding of suicide prevention strategies
Scalora et al. (2022)	Open trial study	University students with depressive symptoms	Mental health assessment scales	Awakened Awareness Spiritual-Mind-Body Program	Holistic mind-body approach	4-week program	Holistic intervention integrating spirituality and mental health strategies	Reduced depressive symptoms and improved resilience
Willson et al. (2020)	Educational intervention study	Pharmacy students in the U.S.	Training evaluation questionnaire	Pharmacy Student Suicide Awareness Training	Educational and skill-based	One-day training session	Pharmacy students trained to provide suicide awareness and prevention support	Enhanced suicide awareness and intervention skills among pharmacy students

Table 2. Summary of Suicide Prevention Strategies by Core Intervention Domains

Core Theme	Representative Studies	Key Intervention Strategies	Main Components / Activities	Findings / Outcomes	Implications for University Settings
Individual-Level Interventions	Mariyati (2020); Scalora et al. (2022); Stanley et al. (2018)	Cognitive Behavioral Therapy (CBT), Safety Planning Intervention (SPI), Holistic Mind–Body Program	CBT-based group therapy, safety planning for crisis management, mind-body resilience and spiritual integration	Significant reductions in suicidal ideation, depressive symptoms, and self-harm risk	Psychological training programs should be embedded in counseling centers to enhance coping and resilience among students
Social and Peer Based Interventions	Horgan et al. (2020); Hjelvik et al. (2022); Hasimoto et al. (2021); Kral & Kidd (2018)	Peer support workshops, gatekeeper training, community engagement initiatives	Peer-led discussions, skill-based training for suicide awareness, community-based participatory approaches	Increased peer awareness, reduced stigma, improved confidence and help-seeking behavior	Peer-support and gatekeeper systems should be institutionalized through student organizations and trained mentors
Institutional and Digital Based Interventions	Worsley et al. (2022); Wang et al. (2023); Torous et al. (2021); Lipson et al. (2019); Fajarwati (2023); Nugraha (2020); Spafford et al. (2024)	Institutional mental health policies, e-Mental health platforms, digital education media, gatekeeper training for staff	Campus-wide mental health initiatives, AI-based monitoring tools, online counseling, infographic-based learning	Improved service utilization, increased literacy on suicide prevention, enhanced detection and crisis response	Universities should integrate digital and policy-level mental health strategies into the 'Kampus Sehat Mental' framework

lastly institutional policy frameworks focus university-provided arrangements staff training procedures administrative regulations oriented towards preventing suicidal behavior. Descriptive statistics summarized overall study traits narrative synthesis interpreted trends assessing effectiveness whilst illuminating crucial existent knowledge voids evident field explorations undertaken. A comprehensive understanding emerged outlining avenues necessitating additional scrutiny moving forward surrounding topic area addressed herein respectively.

Results

Search results

After applying category adjustments, the number of relevant studies was refined to 1,564. The screening process ensured that selected journals met inclusion and exclusion criteria related to suicide prevention in college students, focusing on studies published between 2019 and 2023. Literature selection was guided by criteria such as the last five years' publication range, inclusion in Medline, open access availability, relevance to nursing and science, and mental health and prevention topics. Ultimately, 17 studies and scoping reviews were included in the final analysis (Figure 1).

Characteristics of Included Studies

The selected studies employ a diverse range of quantitative and qualitative methodologies, including systematic reviews (Worsley et al., 2022; Lattie et al., 2019; Spafford et al., 2024), randomized controlled trials (Stanley et al., 2018; Wang et al., 2023; Mariyati, 2020), meta-analyses (Mortier et al., 2018), intervention studies (Hjelvik et al., 2022), and community-based participatory research (Kral & Kidd, 2018). The sample sizes vary widely, with some studies analyzing large-scale epidemiological data, such as Mortier et al. (2018), which included over 60,000 students from 19 countries, while others, such as Horgan et al. (2020), conducted in-depth qualitative research with smaller groups of 30 undergraduate students. Most interventions were implemented in higher education settings, targeting undergraduate students, faculty, and university administrators. The instruments used ranged from psychological assessment tools (Mariyati, 2020), training evaluation questionnaires (Willson et al., 2020), and digital mental health platform assessments (Torous et al., 2021) to survey-based mental health monitoring (Lipson et al., 2019).

Psychological Intervention Techniques

One of the dominant themes in the reviewed literature is the use of cognitive-behavioral therapy

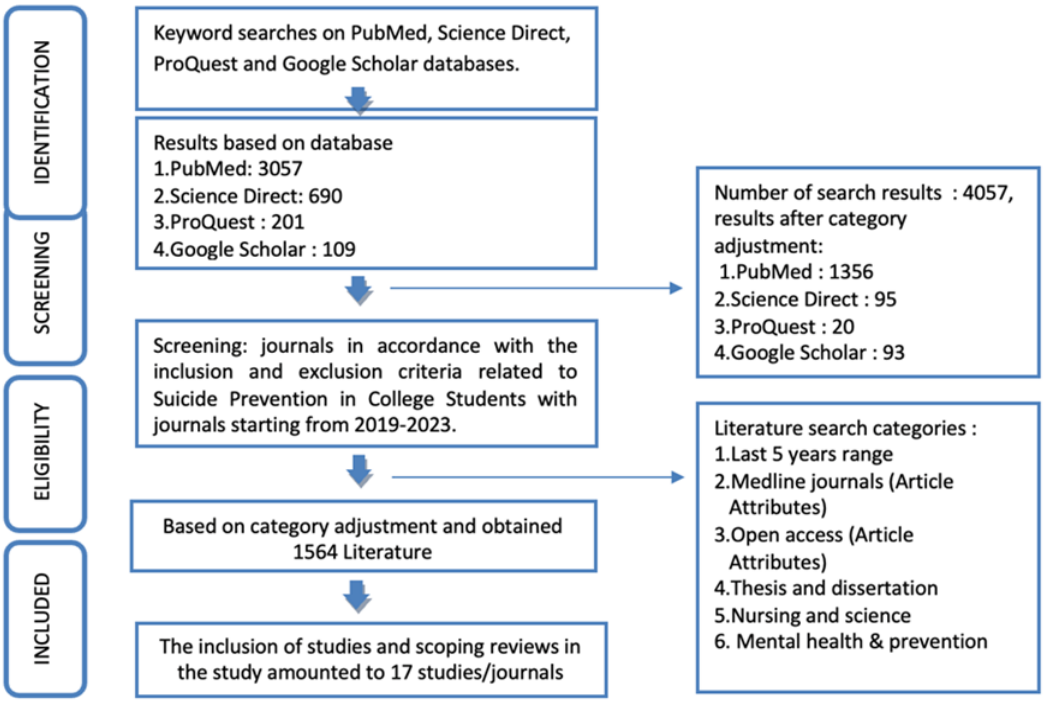


Figure 1. Searching results flow

(CBT), digital mental health interventions, and peer-support networks to mitigate suicide risk. Studies emphasize that CBT-based interventions, such as Mariyati (2020), demonstrate significant reductions in suicidal ideation, reinforcing CBT's role in structured intervention programs. Lattie et al. (2019) and Wang et al. (2023) highlight the effectiveness of digital mental health interventions, with findings suggesting that e-mental health programs and self-guided CBT-based digital tools improve student mental health outcomes. Horgan et al. (2020) and Hjelvik et al. (2022) explore peer-support networks, finding that peer-led suicide prevention discussions and emotional support programs help reduce stigma and encourage help-seeking behaviors among students. The results of these studies indicate that multi-component interventions combining CBT, digital tools, and peer-support mechanisms are highly effective in reducing mental health distress and preventing suicidal ideation.

Sociocultural Factors: Family Engagement and Community-Driven Programming

A second thematic category focuses on the role of sociocultural influences in suicide prevention, including family engagement, cultural adaptation of mental health interventions, and community-driven programming. Kral & Kidd (2018) and Fajarwati (2023) underscore the importance of community-based participatory approaches, finding that long-term community engagement and collaboration between faculty and students foster a more inclusive support system for mental health awareness. Nugraha (2020) investigates the use of educational media interventions, showing that infographic-based suicide prevention education enhances students' understanding of mental health issues, while Scalora et al. (2022) introduces a spiritual-mind-body approach to mental health, demonstrating that holistic interventions integrating spirituality and psychological well-being significantly reduce depressive symptoms. These findings highlight the value of cultural sensitivity in designing effective suicide prevention strategies, particularly in diverse university settings where social dynamics play a crucial role in shaping mental health perceptions.

Institutional Policy Frameworks: University-Provided Arrangements and Administrative Regulations

The third thematic category focuses on institutional efforts in suicide prevention, including university-led policies, staff training procedures, and administrative measures to address suicide risk. Worsley et al. (2022) and Lipson et al. (2019) explore the impact of institutional mental health policies, with findings indicating that Universities implementing structured mental health programs and crisis intervention protocols report improved student mental health outcomes over time. Spafford et al. (2024) and Hasimoto et al. (2021) examine gatekeeper training programs, which equip faculty and staff with the skills to identify and intervene in potential suicide cases, showing notable improvements in confidence and intervention capabilities among university personnel. Stanley et al. (2018) evaluates the effectiveness of the Safety Planning Intervention (SPI), revealing that SPI significantly reduces suicidal behaviors

compared to standard care approaches. These studies collectively suggest that institutional investment in suicide prevention through staff training, crisis intervention mechanisms, and policy-driven support structures is crucial in mitigating suicide risk among undergraduate students. The findings suggest that multilevel and integrated interventions particularly those involving both digital platforms and human support, show promise in reducing suicidal ideation among university students. These findings have strong implications for campus-based policy and practice, highlighting the need for sustained funding and structural integration of mental health services within Kampus Sehat Mental frameworks. Moreover, Universities should prioritize partnerships with mental health professionals and student organizations to ensure early identification and continuous psychological support.

Discussion

This scoping review sought to explore existing psychological, social, and institutional strategies aimed at suicide prevention among undergraduate students. The goal was to identify effective interventions while highlighting gaps in current research and practical applications. The findings demonstrate a broad spectrum of strategies, ranging from individualized psychological support to institution-wide policy changes, emphasizing the complexity of suicide prevention within higher education. While these results align with prior research, they also underscore emerging trends and areas that require further investigation.

The review's findings are consistent with existing literature that underscores the necessity of multi-level interventions in suicide prevention. Studies such as those by Mortier et al. (2019) and Worsley et al. (2022) have demonstrated that gatekeeper training and peer-support programs effectively reduce suicidal ideation among university students. Similarly, this review identifies gatekeeper training as a widely adopted and effective strategy, particularly when supplemented with mental health awareness initiatives and accessible counseling services. However, a notable distinction from previous reviews is the increasing emphasis on digital interventions, including mobile mental health applications and online cognitive behavioral therapy (CBT), which have proven beneficial for students who may be reluctant to engage in traditional in-person therapy (Wang et al., 2023). While earlier research primarily focused on psychological and peer-support approaches, this review highlights the evolving role of institutional policies in shaping a supportive academic environment. Universities are now increasingly incorporating policies that alleviate academic stress, such as flexible assignment deadlines and designated mental health days, measures that received less emphasis in past literature (Lipson et al., 2019). This shift suggests a growing awareness of systemic contributors to student mental health challenges.

The insights from this review carry important implications for clinical practice and policy development within higher education institutions. First, the demonstrated effectiveness of gatekeeper training and peer-support initiatives suggests that these interventions should be prioritized and expanded across campuses. Integrating these programs into existing mental health support frameworks can enhance accessibility and impact. Second, the rise of digital interventions presents a promising solution for overcoming common barriers to mental health care, such as stigma and limited access to in-person services. Clinicians and university administrators should consider incorporating evidence-based digital tools, including CBT-based mobile apps and online mental health screenings, as complementary resources alongside traditional therapy. However, these tools must be culturally adaptable and tailored to the specific needs of undergraduate populations to maximize their effectiveness. Finally, this review highlights the necessity of institutional policies that foster a comprehensive, student-centered approach to suicide prevention. Universities should implement policies that not only support individual students but also address broader systemic factors, such as reducing academic pressure, promoting mental health awareness, and ensuring inclusivity in mental health services. By adopting a holistic, multi-faceted approach, higher education institutions can create an environment that prioritizes student well-being and effectively mitigates suicide risk. The results underscore the importance of institutional responsibility in suicide prevention. Beyond individual-level interventions, universities should develop policies that systematically integrate mental health literacy, peer counseling programs, and digital monitoring mechanisms into academic life. Within this framework, nursing practice—particularly psychiatric nursing—plays a strategic yet often underrecognized role in university settings. Psychiatric nurses working in university hospitals, student clinics, and campus health centers are positioned to conduct early detection of psychological distress, deliver crisis intervention, provide psychosocial support, and promote mental health literacy among the student population.

In addition to clinical services, psychiatric nurses can extend outreach efforts to student dormitories, student activity centers, and surrounding campus communities, thereby creating a more comprehensive safety network for at-risk students. The integration of these roles strengthens the campus mental health ecosystem by bridging clinical care, community engagement, and preventive efforts. At the national level, insights from nursing practices in university settings may inform funding priorities and guide the development of mental health policies that are responsive to the needs of young adults. Such initiatives align with Indonesia's National Strategy on Mental Health Promotion and

can support evidence-based decision-making for higher education policymakers.

Study Limitations

Despite its extensive coverage, this review is not without limitations. Firstly, by only including studies published in English, it may have omitted pertinent research from non-English-speaking regions, thereby constraining the applicability of the findings. Secondly, concentrating solely on peer-reviewed articles likely resulted in missing out on critical information present in grey literature such as institutional reports and policy documents. Additionally, the diversity among the methodologies and outcome measures of the included studies complicated efforts to reach conclusive insights regarding the effectiveness of particular interventions. Lastly, given that digital mental health strategies are rapidly evolving, some new approaches might not be represented within this review.

Conclusions

This scoping review concludes that effective suicide prevention among university students requires hybrid interventions that combine psychological support, social connectedness, and institutional commitment. Future efforts should focus on building digital-human hybrid models that strengthen early detection and empathetic engagement. Actionable recommendations include :

(1) integrating suicide prevention training into university health programs, (2) developing AI-assisted tools for emotional risk screening, and (3) establishing cross-sectoral collaboration between universities, ministries, and mental health institutions to ensure sustainability.

Implications for Nursing Knowledge, Practice, and Future Research

This scoping review carries substantial implications for the nursing discipline, particularly in strengthening nursing knowledge, clinical and community practice, and future research directions related to mental health and suicide prevention among university students. From a knowledge standpoint, the findings expand the understanding of how psychological, social, and institutional factors interact to influence suicide risk, thereby providing a more holistic conceptual framework for nurses in conducting assessment and intervention. In terms of practice, the review underscores the critical role of psychiatric nurses working in university hospitals, campus clinics, student health centers, and community outreach programs. Nurses occupy a strategic position in early screening, crisis intervention, facilitation of peer-support programs, and the enhancement of mental health literacy within academic environments. Moreover, this review identifies several key gaps that warrant future nursing research, including the development of hybrid digital human nursing interventions, culturally sensitive prevention strategies, and evidence based protocols that integrate clinical services with campus mental health systems. Overall, these implications position the nursing profession as a central pillar in strengthening the mental health ecosystem for university students and in shaping national mental health policies for young adult populations.

Declaration of Interest

All author declare no conflict of interest.

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Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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