ReviewArticle
doi:10.31674/mjn.2026.v18i01.017

MJN

The Dual Role of Nurses in Adolescent Mental Health: A Systematic Review of Stigma, Policy Barriers, and Digital Health Challenges in Indonesia

Mohammad Saljan[1*], Isak Jurun Hans Tukayo[1], Syaifoel Hardy[2]
[1]Nursing Department, Polytechnic of Health of Jayapura, Merauke, Papua, 99613 Indonesia
[2]Training Department, Indonesian Nursing Trainers, Malang, East Java, 65216 Indonesia

**Corresponding Author's Mail: saljan65@gmail.com*

ABSTRACT

Background: Nurses in Indonesia are uniquely positioned to address adolescent mental health through digital tools while mitigating associated risks, yet no systematic review has synthesized evidence on this dual role. **Objectives**: This review aimed to map the scope of digital mental health resources for adolescents in Indonesia and assess digital risks impacting their care to clarify the nursing role. **Methods**: This systematic review followed the PRISMA framework. Four databases (PubMed, Scopus, Web of Science, and Google Scholar) were used in identifying 2,051 records. Inclusion criteria comprised peer-reviewed studies (2019-2024) focusing on mental health nursing within the Indonesian context. Exclusion criteria involved non-empirical articles, studies with non-Indonesian populations, and publications lacking full-text access or a DOI. After screening, 12 articles were selected. Methodological quality was appraised using CASP/JBI checklists by two independent reviewers, showing substantial agreement ($\kappa = 0.71$). **Results**: The synthesis identified three core themes: 1) pervasive systemic and socio-cultural barriers (e.g., stigma, low mental health literacy) that shape the care context; 2) notable absence of empirical research on nurses' use of digital resources or management of digital risks; and 3) consistent identified need for nursing capacity building and policy support. Quality appraisal revealed a mix of high, moderate, and low methodological rigors among the included studies, with substantial inter-rater agreement ($\kappa = 0.71$). **Conclusion**: This review reveals a critical socio-technical gap. Digital tools hold transformative potential, but nurses currently lack the competencies, guidelines, and systemic support needed to use them safely. To bridge this gap, the urgent development of a digital mental health competency framework for nursing education and the establishment of enabling policies are imperative.

Keywords: Adolescent Mental Health; Digital Technology; Mental Health Nursing

INTRODUCTION

Adolescent mental health has emerged as a critical global public health priority, with the digital era presenting a complex duality of unprecedented challenges and innovative opportunities (Zeck & Lai, 2020). Worldwide, estimates indicate that one in seven adolescents experiences a mental disorder, with depression, anxiety, and behavioral conditions constituting leading causes of illness and disability within this age group (Suratmini *et al*., 2024; WHO, 2017). Digital technology creates a paradox: it offers support but also exposes adolescents to risks such as cyberbullying and harmful content (Balhara *et al*., 2018). Conversely, the same technology offers revolutionary tools for support, such as telehealth services that improve access to care and digital applications for mental health screening and education (Endriyani *et al*., 2024; Hernandez, 2022).

In Indonesia, the mental health of 45 million adolescents is a strategic determinant of national human capital and productivity (BPS, 2020). The country faces unique challenges, including entrenched cultural stigma, traditional beliefs about mental illness, and low mental health literacy. These factors contribute to

Received: December 6, 2025 Received in revised form: June 12, 2026 Accepted: June 20, 2026

harmful practices like *pasung* and major treatment gaps (Pangiras *et al*., 2021; Subu *et al*., 2022). Furthermore, a severe shortage of specialized mental health professionals strains the healthcare system and further limits access to care (Susanti *et al*., 2024).

Within this complex environment, nurses, as the largest and most widely distributed component of the health workforce, are thrust into a pivotal position. In community health centers (*Puskesmas*) and clinical settings, they are often the first and sometimes only point of contact for adolescents and their families (Rachmawati *et al*., 2023). Understanding the scope and evidence for this dual role is essential for shaping effective nursing practice and policy.

Global research now splits into two key areas: one examines digital harms like youth anxiety and internet addiction, while another explores the development and efficacy of Digital Mental Health Interventions (DMHIs) (Bond *et al*., 2023; Shoji *et al*., 2025). In Indonesia, scholarly attention has focused on mapping systemic and cultural barriers that hinder conventional care (Putri *et al*., 2021; Kuusisto *et al*., 2022). Studies on the nursing workforce predominantly examine traditional roles and workplace challenges, often overlooking the digital dimension of modern care (Marthoenis *et al*., 2023; Tasijawa *et al*., 2021).

A significant research gap exists at the intersection of these global and local trends. While the dual facets of the digital paradox are studied in isolation globally, and Indonesian nursing research remains focused on traditional paradigms, no study has systematically integrated these perspectives. Consequently, the dual, interdependent role required of nurses in this context remains unexamined.

This review therefore addresses this critical gap by investigating how nurses in Indonesia can simultaneously harness digital tools for mental health promotion and mitigate associated digital risks for adolescents. Specifically, it aims to synthesize existing literature to: 1) map accessible digital mental health resources for adolescents in Indonesia and 2) assess digital risks impacting their mental health. The findings will clarify nurses' dual role in the digital era, inform competency development, and support evidence-based guidelines to strengthen the national mental healthcare system.

METHODOLOGY

Study Design

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page *et al*., 2021). To ensure methodological rigor and transparency, a detailed study protocol outlining the search strategy, eligibility criteria, and data synthesis plan was developed prior to commencing the review. For the quality assessment, two reviewers (EK and SS) independently appraised the methodological quality of the included studies. Inter-rater reliability for these categorical quality scores was calculated using Cohen's kappa (κ), yielding substantial agreement ($\kappa = 0.71$) (Li *et al*., 2023).

Search Methods

The search strategy was developed using the PCC (Population, Concept, Context) framework (Chan *et al*., 2024). The key concepts were population (adolescents), concept (digital mental health and nursing role), and context (Indonesia). Boolean operators were used (Picalho *et al*., 2022) to combine the following keywords and MeSH terms across four databases (PubMed, Scopus, Web of Science, and Google Scholar). ResearchGate was not used as a search database because it is an unrecognized bibliographic database for systematic reviews. The complete database-specific search strings were as follows: PubMed: ("adolescent"[MeSH] OR "youth"[tiab] OR "teen"[tiab]) AND ("mental health"[MeSH] OR "psych*"[tiab]) AND ("digital health"[tiab] OR "telehealth"[tiab] OR"mHealth"[tiab] OR "eHealth"[tiab] OR"mobile

app"[tiab]) AND ("nurs*"[tiab] OR"nursing"[MeSH]) AND "Indonesia"[tiab]. Scopus: TITLE-ABS-KEY ((adolescent* OR youth OR teen) AND (mental health OR psych*) AND (digital health OR telehealth OR mHealth OR eHealth OR mobile app) AND (nurs* OR nursing) AND Indonesia). Web of Science: TS=((adolescent* OR youth OR teen) AND (mental health OR psych*) AND (digital health OR telehealth OR mHealth OR eHealth OR mobile app) AND (nurs* OR nursing) AND Indonesia). Google Scholar: allintitle: adolescent mental health nursing digital Indonesia (with year restriction applied via advanced search).

The search was limited to literature published between January 2019 and December 2024 to ensure contemporary relevance. Two reviewers (MS and IJHT) independently conducted the searches. The duplicate search term "digital" was removed from the final string.

Inclusion and Exclusion Criteria

Inclusion criteria were: 1) Population: Adolescents (aged 10-24) in Indonesia or Indonesian nurses working with adolescents. 2) Intervention/Exposure: Focus on the use of digital resources (e.g., telehealth, apps, social media) or digital risks (e.g., cyberbullying, problematic internet use) in mental health contexts. 3) Outcome: Discussion of nursing roles, competencies, interventions, or challenges related to digital adolescent mental healthcare. 4) Study Design: Primary qualitative, quantitative, or mixed-methods research. 5) Language: English or Indonesian articles published between January 2019 and December 2024. Studies were excluded if they focused on other populations, were irrelevant to digital health/nursing/Indonesian context, were non-empirical (e.g., editorials, commentaries), or were unavailable in full text.

Study Selection and Screening Procedures

The screening process was conducted in two stages by two independent reviewers (MS and IJHT). Stage 1 (Title and Abstract Screening): Both reviewers independently screened the titles and abstracts of all retrieved records against the eligibility criteria. Any disagreements were resolved through discussion or, when necessary, by arbitration from a third reviewer (SH). Stage 2 (Full-Text Screening): The full texts of articles that passed Stage 1 were obtained and independently assessed by the same two reviewers for final eligibility. Reasons for exclusion at this stage were documented.

The initial database search yielded 2,051 records. After removing 463 duplicates, 1,588 records proceeded to title and abstract screening, resulting in the exclusion of 1,216 irrelevant records. The full texts of the remaining 372 articles were assessed for eligibility, of which 360 were excluded for not meeting the inclusion criteria (e.g., outdated publication, wrong study design, or incomplete data). Consequently, 12 studies were included in the final review. A PRISMA flow diagram (Figure 1) provides a complete visual representation of this screening process.

Data extraction and methodological quality assessment were performed independently by two reviewers (EK and SS) using standardized forms and checklists (e.g., JBI) (Barker *et al*., 2024). Any disagreements were resolved through consensus or, when necessary, by arbitration from a third reviewer (YA).

Data Analysis

The analysis followed the PRISMA framework, combining qualitative synthesis with descriptive statistics. Data from the 12 included studies were extracted into a matrix. Thematic analysis was applied to the 10 qualitative/mixed-methods studies to identify patterns concerning nurses' dual role, digital resources, and risks in adolescent mental health (Konstantinos, 2024). Concurrently, descriptive statistics summarize study characteristics and methodological trends. This dual approach is widely supported for providing a comprehensive understanding of the evidence base (Page *et al*., 2021).

RESULTS

Study Selection

The systematic search and selection process are summarized in the PRISMA flow diagram (Figure 1). A total of 12 studies met the inclusion criteria and were included in this review.

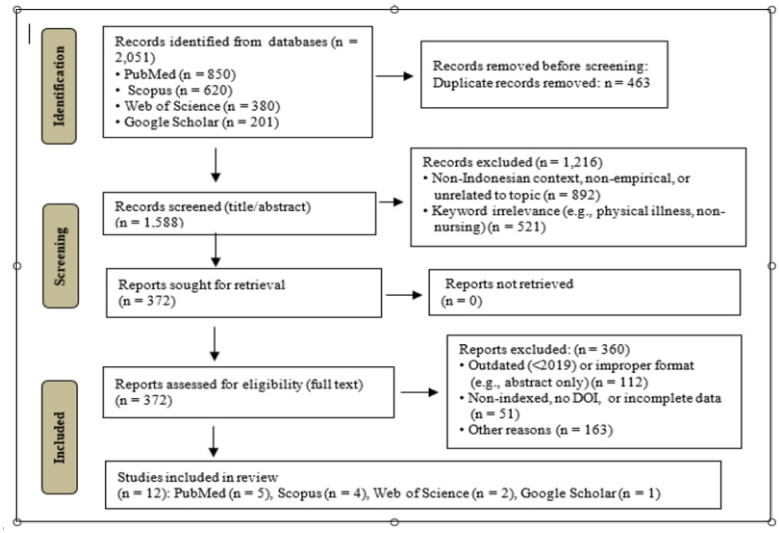

Figure 1: PRISMA Analysis

Quantitative Summary of Included Studies

A total of 12 studies met the final inclusion criteria. Thematic analysis revealed that the overwhelming majority of the evidence base (83%, n=10) addressed fundamental systemic, organizational, and sociocultural barriers to mental health care in Indonesia, such as policy gaps, workforce shortages, pervasive stigma, and traditional beliefs. Studies providing foundational prevalence or psychometric data constituted 17% (n=2) of the reviewed literature. A critical finding is the complete absence (0%, n=0) of empirical studies from Indonesia specifically investigating the role of nurses or digital interventions in adolescent mental health, underscoring a significant research gap despite the identified theoretical need.

Characteristics of Included Studies

The 12 included studies, along with their key methodological characteristics and primary thematic codes relevant to this review, are presented in Table 1. The majority (n=10) employed qualitative or mixed-methods designs, with only two being systematic or narrative reviews. No experimental or longitudinal studies were found.

Table 1: Characteristics and Thematic Focus of Included Studies

Author(s), Year	Design	Sample Size	Study Setting	Key Outcomes (Related to Nurses' Role)	Quality Rating
Putri *et al.*, 2021	Qualitative	21 stakeholders	Multiple sites, Indonesia	Identified systemic barriers and need for training; nurses described as frontline but under-resourced	Medium
Hidayat *et al.*, 2023	Policy Analysis	15 policy documents	National policy review, Indonesia	Revealed policy gaps in *pasung* elimination; implications for nursing practice in community settings	High
Natalia & Fridari, 2022	Cross-sectional	320 university students	Universities, Indonesia	Stigma mediated by collectivist culture and low mental health literacy; nurses need cultural competence	Medium
Subu *et al.*, 2022	Qualitative	30 participants (community members & healers)	Community settings, Indonesia	Traditional beliefs influence help-seeking; nurses must engage with local healers and beliefs	Medium

Hidayat *et al* ., 2020	Systematic Review	28 studies	International (including Indonesia)	Synthesized evidence on *pasung* practices; highlighted need for nurse-led community interventions	Medium
Habita *et al*., 2020	Qualitative	25 community members	Rural communities, Indonesia	*Pasung* persists due to lack of access and stigma; nurses as key entry point for care	Low
Suratmini *et al.,* 2024	Psychometric	200 adolescents (substance use)	Clinical settings, Indonesia	Validated Indonesian version of internalized stigma instrument; enables nurse-led screening	Medium
Isni *et al*., 2024	Mixed-methods	15 health centers + 200 adolescents	Rural primary health care (*Puskesmas*), Indonesia	Severe shortage of professionals (>70% of centers); nurses require training to fill gaps	Medium
Pham *et al*.,2024	Cross-sectional	4,500 adolescents (national sample)	Nationwide, Indonesia	Prevalence 15-25% for depression/anxiety; nurses need capacity for early detection	High
Maravilla *et al*., 2025	Cross-national comparative	3,200 adolescents (Indonesia, Kenya, Vietnam)	Schools and communities, Indonesia	Low family/peer support associated with poorer outcomes; nurses can leverage social support	High
Yosep *et al*., 2021	Cross-sectional	120 mental health nurses	Psychiatric facilities, Indonesia	Gaps in digital competencies within nursing curricula; training needs identified	Medium
Susanti *et al*., 2024	Qualitative	40 lay health workers (cadres)	Community health centers, Indonesia	Lay workers support nurses; training for digital tools is absent but needed	Medium

As shown in Table 1, the 12 included studies demonstrate a stronger focus on adolescent mental health in Indonesia, with the majority employing qualitative or cross-sectional designs and no experimental or longitudinal studies identified. Sample sizes ranged from 15 participants in qualitative studies to 4,500 adolescents in the national survey by Pham *et al*. (2024), which reported depression prevalence rates of approximately 15–25%. Study settings were diverse, including rural primary health centers (*Puskesmas*), national surveys, psychiatric facilities, and community settings. Across all studies, key outcomes consistently identified pervasive stigma, systemic barriers, workforce shortages, and critical gaps in nurse training. Notably, three studies were rated as high quality (Hidayat *et al*., 2023; Pham *et al*., 2024), while eight were medium and one was low. Critically, no study directly examined nurses' use of digital tools or management of digital risks in adolescent mental health care, confirming a foundational gap in the evidence base.

Quality Appraisal

The methodological quality of the 12 included studies was independently appraised by two reviewers (EK and SS). For qualitative and mixed-methods studies, the Critical Appraisal Skills Programme (CASP) checklist was applied, while the Joanna Briggs Institute (JBI) tools were used for quantitative studies and systematic reviews. Inter-rater reliability for the categorical quality ratings showed substantial agreement (Cohen's $\kappa = 0.71$). Discrepancies were resolved through discussion to reach a consensus.

Based on the consensus scores (Supplementary Material Table S1), the overall methodological quality of the evidence base was mixed. Three studies (25%, n=3) were rated as high quality (Hidayat *et al*., 2020; Maravilla *et al*., 2025), eight studies (67%, n=8) as medium, and one study (8%, n=1) as low. The detailed appraisal per criterion (Supplementary Material Table S2) revealed that while all studies clearly stated their aims and presented relevant findings, reporting consistency varied. Ethical approval was explicitly reported in

83% (n=10) of the empirical studies, and strategies to enhance methodological rigor were clearly described in 66% (n=6) of the applicable qualitative or mixed-methods studies. Common areas of unclear or insufficient reporting included the justification of sampling methods and sample size. The studies rated high, particularly the cross-sectional studies by Pham *et al*. (2024) and Maravilla *et al*. (2025), as well as the policy analysis by Hidayat *et al*. (2023), were distinguished by their strong methodological reporting, including the use of validated measurement tools and transparent, representative sampling strategies.

DISCUSSION

Building on the findings presented in the Results section, the Discussion now interprets these findings, applies to theoretical frameworks, and derives implications for practice, education, and policy.

Empirical Summary of Findings

This review synthesizes evidence from 12 studies conducted in Indonesia, revealing three interconnected findings that shape the context for nurses' dual role in adolescent digital mental health. First, the prevalence of mental health problems among Indonesian adolescents is substantial, with recent national data indicating that approximately 15-25% of adolescents experience depression or anxiety symptoms (Pham *et al*., 2024). However, this prevalence must be understood within a broader systemic context of persistent barriers to care. This finding implies that nurses are likely to encounter adolescents with mental health needs in routine practice, yet they lack the digital tools and training to address these needs effectively. Second, pervasive socio-cultural stigma and low mental health literacy continue to suppress help-seeking behaviors and reinforce harmful traditional practices such as *pasung* (Natalia & Fridari, 2022; Subu *et al*., 2022). This suggests that digital interventions introduced without addressing stigma will likely fail. Third, the healthcare system faces critical organizational constraints, including a severe shortage of mental health professionals, inadequate training for frontline nurses, and a lack of integrated, adolescent-friendly services—particularly in rural areas where professional services are absent (Isni *et al*., 2024a; Susanti, 2024). While social support is identified as a protective factor (Maravilla *et al*., 2025), the overall evidence demonstrates a systemic gap between adolescent mental health needs and service capacity. This indicates that systemic barriers must be addressed before digital tools can be effectively implemented. Critically, across all 12 included studies, no empirical research directly examined nurses' use of digital tools or management of digital risks in adolescent mental health care. This absence underscores a foundational gap in the evidence base, meaning that any recommendations for digital nursing practice must be derived from indirect evidence and theoretical synthesis rather than tested interventions.

Theoretical Interpretation

TOE Framework: The Technology-Organization-Environment (TOE) framework provides a structured lens to interpret these systemic barriers (Suradi & Dharma, 2025). From this perspective, the adoption and effective use of potential digital health solutions are hindered by factors at all three levels. Environmentally, profound socio-cultural stigma and low mental health literacy create a context that suppresses help-seeking and validates alternative, often harmful, practices (Hidayat *et al*., 2020; Subu *et al*., 2022). Organizationally, the healthcare system exhibits critical unreadiness. This is evidenced by gaps in digital competencies within nursing curricula and a lack of supportive institutional policies for digital integration (Yosep *et al*., 2021). Technologically, this organizational and environmental context explains why digital tools remain an underexplored dimension in Indonesian nursing practice and research. The framework clarifies that technological potential is stimulated by unfavorable conditions in the other two domains.

Theoretical Interpretation: Socio-Technical Systems Theory

A socio-technical systems perspective further elucidates this impasse by emphasizing the need for joint optimization of social and technical subsystems (Sharafkhani *et al*., 2025). In this review, the social subsystem—encompassing community beliefs, adolescent behaviors, and nursing practices—is heavily burdened by stigma and lacks digital literacy. Concurrently, the technical subsystem of digital tools is being introduced without the requisite social and organizational support. This misalignment creates a significant

gap, explaining the scarcity of empirical studies on digital nursing care in Indonesia and underscoring that technology alone cannot transform practice.

Synthesis and Implications

Converging, these theories position the nurse as a critical broker between subsystems—a digitally competent guardian who must navigate technical resources while mitigating social risks (Düzgün & Demir, 2023). However, this expanded role is not formally recognized. The absence of direct empirical studies on digital nursing interventions identified in this review leads to three key implications for practice, education, and policy.

First, for nursing practice: The absence of studies examining nurses' use of digital tools indicates they lack evidence-based guidance. This necessitates context-specific clinical protocols for digital mental health screening, risk assessment (e.g., cyberbullying, problematic internet use), and referral pathways.

Second, for nursing education, the pervasive systemic barriers identified—stigma, low literacy, and workforce shortages—imply that simply providing digital tools will fail without corresponding investments in nurse training. Current curricula lack specific competencies for digital mental health literacy and risk assessment (Hidayat *et al*., 2023). Therefore, structured educational interventions to build digital competence are a prerequisite for safe and effective practice.

Third, for health policy: The TOE framework analysis reveals that unfavorable environmental and organizational conditions currently stifle technological potential. This implies that policy reforms must address not only technology access but also stigma reduction, workforce development, and institutional support for digital integration. Without enabling policies, individual nursing efforts will remain fragmented and unsustainable.

A key strength of this review is its systematic, PRISMA-guided methodology focused on the Indonesian context. A primary limitation is the scarcity of high-quality studies directly investigating digital nursing roles, meaning the findings reflect the methodological constraints (e.g., cross-sectional designs) of the source material. Consequently, these conclusions serve as a preliminary mapping. The central implication is the urgent need for future interventional research to evaluate digital health nursing models. Concurrently, advocacy for policy reform is required to integrate digital mental health competencies into national nursing standards.

Limitations

This review has several limitations that should be considered when interpreting its findings. Very few studies directly examined the role of nurses in using digital tools for adolescent mental health in Indonesia. Most of the available studies focused on general barriers to mental health care, such as stigma and lack of staff, rather than specifically on digital resources or risks. The quality of the included studies varied, with three rated as high quality and one as low methodological rigor. This means some findings may be less reliable. No experimental or longitudinal studies were found, so this review cannot show cause-and-effect relationships. All included studies were from Indonesia, which means the findings may not apply directly to other countries with different cultures or health systems. The search was limited to articles published between 2019 and 2024, so older but potentially relevant studies were not included. Because there is very little research on this topic, the conclusions of this review are mostly based on identifying gaps and needs, rather than on strong evidence of what works.

Future Scope

Future research should move beyond describing problems and instead focus on developing and testing practical solutions that help Indonesian nurses use digital tools safely for adolescent mental health. Researchers should create and evaluate a digital mental health competency framework specifically for nursing education and training. Intervention studies are urgently needed to test how tools like mobile apps, telehealth,

or online screening can be used by nurses in community health centers (Puskesmas). Future studies should explore how nurses can help adolescents cope with digital risks such as cyberbullying and problematic internet use. Researchers should include experimental and longitudinal designs to understand what works over time, rather than relying solely on cross-sectional or qualitative studies. Future work should also examine the role of policy in supporting digital mental health nursing, including guidelines, funding, and legal protections. Comparative studies between Indonesia and other low- and middle-income countries could help identify shared challenges and successful strategies.

CONCLUSION

Addressing the dual role of nurses in adolescent mental health—as both potential users of digital tools and mitigators of digital risks—this review reveals a critical disconnect between policy aspirations and empirical evidence in Indonesia.

First, corresponding to Objective 1 (to map digital mental health resources for adolescents), this review found no empirical studies examining digital resources for adolescents that specifically involve nurses. Second, aligned with Objective 2 (to assess digital risks impacting adolescent mental health), no studies examined how nurses manage or mitigate digital risks such as cyberbullying or problematic internet use.

Framed by the TOE and socio-technical systems theories, the analysis identifies nurses as pivotal but under-supported agents who lack digital competencies, clear protocols, and systemic support. This gap represents a systemic limitation that affects both service delivery and adolescent safety in digital spaces. However, it is critical to explicitly state that this review found no direct empirical studies on digital nursing interventions for adolescent mental health in Indonesia. Consequently, the recommendations for a digital mental health competency framework and policy reforms are based on identified gaps, indirect evidence from related barriers (e.g., stigma, policy, service challenges), and theoretical synthesis, rather than on tested interventions or proven effectiveness.

The primary implication is the urgent need to integrate a structured digital mental health competency framework into nursing education and practice standards in Indonesia. Future research should advance from descriptive studies to the design and evaluation of targeted intervention models. Concurrently, policy advocacy is required to formalize this expanded role and ensure institutional support. This dual approach – capacity building and systemic reform – is essential to fully empower nurses to navigate digital tools safely and effectively for adolescent mental well-being. A key limitation of this review is the nascent state of the field, reflected in the scarcity of high-quality, directly relevant studies, which constrains the generalizability of findings and emphasizes the necessity of further primary research.

CRediT Authorship Contribution Statement

M.S: Conceptualization, Methodology, Formal analysis, Writing – Original Draft, Writing – Review & Editing, Supervision. I.J.H.T: Investigation, Data curation, Validation, Writing – Review & Editing. S.H: Software, Resources, Visualization, Project administration.

AI Assistance Declaration

During the preparation of this work, the authors used AI only to improve language, fix spelling errors, and find unclear sentences. The authors take full responsibility for the content and originality of the article.

Conflict of Interests

The authors affirm that there are no conflicting objectives.

ACKNOWLEDGEMENT

The authors are thankful to the institutional authority for completion of the work.

REFERENCES

Balhara, Y. P. S., Mahapatra, A., Sharma, P., & Bhargava, R. (2018). Problematic internet use among students in South-East Asia: Current state of evidence. *Indian Journal of Public Health, 62*(3), 197–210. https://doi.org/10.4103/ijph.IJPH_288_17

Barker, T. H., Habibi, N., Aromataris, E., Stone, J. C., Leonardi-Bee, J., Sears, K., Hasanoff, S., Klugar, M., Tufanaru, C., Moola, S., & Munn, Z. (2024). The revised JBI critical appraisal tool for the assessment of risk of bias for quasi-experimental studies. *JBI Evidence Synthesis, 22*(3), 378–388. https://doi.org/10.11124/JBIES-23-00268

Bond, R. R., Mulvenna, M. D., Potts, C., Neill, S. O., Ennis, E., & Torous, J. (2023). Digital transformation of mental health services. *Mental Health Research, 2*(13), 1–9. https://doi.org/10.1038/s44184-023-00033-y

Badan Pusat Statistik. (2020). Statistik Indonesia 2020 [Indonesian Statistics 2020]. *Badan Pusat Statistik*. https://www.bps.go. id/publication/2020/04/29/e9011b3155d45d70823c141f/statistik-indonesia-2020.html

Chan, S. L., Ho, C. Z. H., Khaing, N. E. E., Ho, E., Pong, C., Guan, J. S., Chua, C., Li, Z., Lim, T., Lam, S. S. W., Low, L. L., & How, C. H. (2024). Frameworks for measuring population health: A scoping review. *PLoS ONE, 19*(2 February), 1–18. https://doi.org/10.1371/journal.pone.0278434

Düzgün, N., & Demir, S. (2023). Professional experiences of nurses working in community mental health centers: A phenomenological study. *Journal of Psychiatric Nursing, 14*(3), 224–231. https://doi.org/10.14744/phd.2023.17037

Endriyani, S., Martini, S., & Pastari, M. (2024). Youth Mental Health Education and Screening with Application. *Madaniya, 5*(1), 192–198. https://doi.org/10.53696/27214834.687

Hernandez, J. (2022). Impacts of Telehealth on Access-to-Care for Mental Health Patients. *International Neuropsychiatric Disease Journal, 18*(2), 1–7. https://doi.org/10.9734/indj/2022/v18i2345

Hidayat, M. T., Lawn, S., Muir-Cochrane, E., & Oster, C. (2020). The use of pasung for people with mental illness: a systematic review and narrative synthesis. *International Journal of Mental Health Systems, 14*(1), 1–21. https://doi.org/10.1186/s13033-020-00424-0

Hidayat, M. T., Oster, C., Muir-Cochrane, E., & Lawn, S. (2023). Indonesia free from pasung: a policy analysis. *International Journal of Mental Health Systems, 17*(1), 1–22. https://doi.org/10.1186/s13033-023-00579-6

Isni, K., Fitri, M., Emma, S., Jatmika, D., Marie, J., Leon, G. De, Rachmayanti, R. D., Qomariyah, N., & Sulistyawati, S. (2024a). The implementation of adolescent mental health services: opportunities and challenges. *International Journal of Public Health Science, 13*(2), 810–819. https://doi.org/10.11591/ijphs.v13i2.23597

Isni, K., Lugiana, N. A., Trisnowati, H., Santri, N., & Qomariyah, N. (2024b). How Can Adolescents Get Mental Health Services Without the Availability of Professionals? A Lesson Learned from Rural Primary Health Care. Jurnal Promkes: *The Indonesian Journal of Health Promotion and Health Education, 12*(1), 133–145. https://doi.org/10.20473/jpk.V12.I1SP.2024.133-145

Konstantinos, G. (2024). Thematic analysis: A practical guide. *European Journal of Psychotherapy & Counselling, 26*(3–4), 461–464. https://doi.org/10.1080/13642537.2024.2391666

Kuusisto, A., Santavirta, J., Saranto, K., Suominen, T., & Asikainen, P. (2022). Nursing staff's assessments of medication management process in the psychiatric and operative domains: A cross-sectional study after introduction of an electronic medication chart. *Scandinavian Journal of Caring Sciences, 36*(4), 935-946. https://doi.org/10.1111/scs.12989

Li, M., Gao, Q., & Yu, T. (2023). Kappa statistic considerations in evaluating inter-rater reliability between two

raters: which, when and context matters. *BMC Cancer, 23*(1), 1–5. https://doi.org/10.1186/s12885-023-11325-z

Maravilla, J. C., Fine, S. L., Ramaiya, A., Li, M., Wado, Y. D., Wahdi, A. E., ... & Erskine, H. E. (2025). Social support and mental health among adolescents in Kenya, Indonesia, and Vietnam: A latent class analysis using the National Adolescent Mental Health Surveys. *Child and Adolescent Psychiatry and Mental Health, 19*(Suppl 1), 1–13. https://doi.org/10.1186/s13034-025-00923-3

Marthoenis, M., Sari, H., Martina, M., Alfiandi, R., Asnurianti, R., Hasniah, H., Safitri, S. D., & Fathiariani, L. (2023). The prevalence of and perception toward mental illness: a cross-sectional study among Indonesian mental health nurses. *BMC Psychiatry, 23*(1), 1–6. https://doi.org/10.1186/s12888-023-05063-6

Natalia, S. J., & Fridari, I. G. A. D. (2022). The role of collectivist culture and mental health literacy in mental illness stigma among university students in Indonesia. *Psychology, 12*(4), 166-175. https://doi.org/10.17265/2159-5542/2022.04.002

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *The BMJ, 372*. https://doi.org/10.1136/bmj.n71

Pangiras, G., Ibrahim, I. M. B., & Latif, T. B. A. (2021). A Review of the Perceptions of Mental Illness and Mental Health Literacy in Indonesia. *European Journal of Behavioral Sciences, 4*(2), 18–25. https://doi.org/10.33422/ejbs.v4i2.612

Pham, M. D., Wulan, N. R., Sawyer, S. M., Agius, P. A., Fisher, J., Tran, T., ... & Azzopardi, P. S. (2024). Mental Health Problems Among Indonesian Adolescents: Findings of a Cross-Sectional Study Utilizing Validated Scales and Innovative Sampling Methods. *Journal of Adolescent Health, 75*(6), 929–938. https://doi.org/10.1016/j.jadohealth.2024.07.016

Picalho, A. C., Lucas, E. R. de O., & Amorim, I. S. (2022). Boolean logic applied to the construction of search expressions. *AtoZ: New Practices in Information and Knowledge, 11*, 1–12. https://doi.org/10.5380/atoz.v11i0.81838

Putri, A. K., Gustriawanto, N., Rahapsari, S., Sholikhah, A. R., Prabaswara, S., Kusumawardhani, A. C., & Kristina, S. A. (2021). Exploring the perceived challenges and support needs of Indonesian mental health stakeholders: a qualitative study. *International Journal of Mental Health Systems, 15*(1), 1–9. https://doi.org/10.1186/s13033-021-00504-9

Rachmawati, I., Meigawati, D., & Trang, P. D. K. (2023). The implementation of the Sistem Inovasi Cepat Penanganan ODGJ Terpadu (SICEPOT) in Sukabumi City. *Jurnal Pendidikan Vokasi, 13*(3), 262-272. https://doi.org/10.21831/jpv.v13i3.70160

Sharafkhani, M., Geary, U., Kennedy, C., Browne, M., Codd, M., Dea, A. O., Shields, D., Hennessy, A., Mcdonagh, L., Hara, S. O., Kennedy, B., Mccullagh, C., Reilly, M. O., & Ward, M. E. (2025). Using Socio-Technical Systems Analysis to Understand the Enablers of Resilience in Clinical Handover in Acute Hospital Settings. *Theoretical and Applied Ergonomics, 1*(1), 5. https://doi.org/10.3390/tae1010005

Shoji, Y., Irwan, A. M., Ochiai, R., Syahrul, S., Shinohara, E., Fiqri, A. M., Takeuchi, S., Erfina, E., Iida, M., Saleh, A., Moriguchi, F., Nakamura, S., & Kanoya, Y. (2025). The Impact of eHealth Literacy on Health Behaviors for Non-communicable Disease Prevention among University Students in Japan and Indonesia. *Cureus, 17*(2), 1–13. https://doi.org/10.7759/cureus.78450

Subu, M. A., Holmes, D., Arumugam, A., Al-Yateem, N., Maria Dias, J., Rahman, S. A., Waluyo, I., Ahmed, F. R., & Abraham, M. S. (2022). Traditional, religious, and cultural perspectives on mental illness: a qualitative study on

causal beliefs and treatment use. *International Journal of Qualitative Studies on Health and Well-Being, 17*(1), 2123090. https://doi.org/10.1080/17482631.2022.2123090

Suradi, A., & Dharma, U. W. (2025). A Theoretical Extension of Technology Organization Environment (TOE) in E-Government: A Systematic Literature Review and Theory Evaluation. *Journal of Computer Science and Technology (JCS-TECH), 5*(1), 29–36. https://doi.org/10.54840/jcstech.v5i1.361

Suratmini, D., Daulima, N. H. C., & Wardani, I. Y. (2024). Validity and Reliability of the Indonesian Version of the Internalized Stigma Mental Illness Instrument: Substance Abuse in Adolescents. *Jurnal Keperawatan Soedirman, 19*(2), 65–71. https://doi.org/10.20884/1.jks.2024.19.2.7680

Susanti, D. (2024). Description of Mental Health in Young Women Who Participate in Islamic Mentoring at Stikes Budi Luhur Cimahi. In *Proceeding of The International Conference on Health Sciences (TICHes)* (Vol. 3, No. 3). https://doi.org/10.62817/tiches.v3i3.328

Susanti, H., Brooks, H., Yulia, I., Windarwati, H. D., Yuliastuti, E., Hasniah, H., & Keliat, B. A. (2024). An exploration of the Indonesian lay mental health workers' (cadres) experiences in performing their roles in community mental health services: a qualitative study. *International Journal of Mental Health Systems, 18*(1), 1–13. https://doi.org/10.1186/s13033-024-00622-0

Tasijawa, F. A., Sutini, T., & Maelissa, S. R. (2021). Recovery from 'schizophrenia': Perspectives of mental health nurses in the Eastern island of Indonesia. *Belitung Nursing Journal, 7*(4), 336. https://doi.org/10.33546/bnj.1621

World Health Organization (WHO). (2017). Mental health status of adolescents in South-East Asia: Evidence for action. https://www.who.int/publications/i/item/9789290225737

Yosep, I., Mediani, H. S., & Abstract, L. L. (2021). Working alliance among mental health nurses in Indonesia: A comparative analysis of socio-demographic characteristics. *Belitung Nursing Journal, 7*(2), 125–130. https://doi.org/10.33546/bnj.1259

Zeck, W., & Lai, J. (2020). *Adolescent Mental Health Matters*. UNICEF. https://www.unicef.org/media/82926/file/Adolescent-Mental-Health-Matters-Report-Final-July2020.pdf