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Uncovering Hidden Trauma: School-Based Mental Health Screening Among Adolescents in Post-Disaster North Lombok

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Abstract

Mental health among adolescents in North Lombok, Indonesia, has become an urgent concern due to the high prevalence of psychological disorders following the 2018 earthquake. This community service program aimed to improve mental health literacy and screen psychological conditions among senior high school students through a structured educational seminar and training session. Forty students participated in the intervention, which included pre- and post-tests to evaluate knowledge gains, as well as completion of the Self-Reporting Questionnaire-29 (SRQ-29) to assess psychological conditions. The findings showed a significant increase in knowledge post-intervention (mean increase = 13.87 points, $p < 0.05$). SRQ-29 results revealed that 80.49% of respondents experienced depression/anxiety/stress, 70.73% showed psychotic symptoms, and 92.68% met the criteria for PTSD. Co-occurrence of multiple disorders was common, with 45% of students experiencing all three simultaneously. These figures significantly exceed national and international post-disaster mental health data. The program highlights the importance of school-based mental health initiatives, particularly in disaster-prone regions, and supports the use of early screening combined with psychoeducational efforts to mitigate long-term psychological effects in vulnerable youth populations.

Keywords: Adolescent mental health; Post-disaster trauma; Community engagement; School-based intervention; SRQ-29

1. Introduction

Indonesia Emas 2045 is a national vision aimed at creating a prosperous society on par with other developed nations [1,2] . The complete vision encompasses a sovereign, advanced, and sustainable archipelagic nation. Among its eight strategic pillars, population size is recognized as a fundamental asset—one that can serve as a driver of progress but may also pose a threat if not properly managed [3] . The objective of human resource development must address the entirety of the human being as a living entity [1].

Humans are holistic, biopsychosocial, and spiritual beings composed of physical and spiritual dimensions [4]. They possess unique needs that evolve across stages of development [5]. Within the framework of achieving Golden Indonesia, youth are a strategic target for development interventions, as they represent the future agents of national progress. The biological, psychological, and social components play pivotal roles in shaping the quality of youth.

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Therefore, human resource development strategies must extend beyond the health and education sectors to include the reinforcement of mental health.

According to the World Population Review, approximately 9 million Indonesians, or 3.7% of the population, suffer from depression. The 2018 Indonesian Basic Health Research (Riskesdas) reported that around 16 million individuals aged 15 years and older (6%) exhibited symptoms of anxiety or depression, while approximately 400,000 individuals (1.72%) suffered from more severe conditions such as psychosis [4]. Furthermore, 19% of adolescents reported having suicidal thoughts, with 45% of them having engaged in self-harming behaviors. A collaborative study conducted by several leading Indonesian universities, the University of Queensland (Australia), Johns Hopkins Bloomberg School of Public Health (USA), and the Indonesian Ministry of Health revealed that the most prevalent mental disorders among Indonesian adolescents were anxiety disorders (3.7%), followed by major depressive disorder (1.0%), behavioral disorders (0.9%), PTSD, and ADHD (each at 0.5%) [6]. Despite being the fourth most populous country in the world, Indonesia has a low ratio of psychiatrists—only 0.3 per 100,000 population—along with 450 psychologists and 48 mental health facilities [3]. This shortage presents a significant gap that could hinder the realization of a superior generation by 2045 [7].

West Nusa Tenggara (NTB) is one of the provinces in Indonesia that has placed mental health as a serious public health concern, particularly in response to recent data indicating 2,836 cases of mental disorders among adolescents aged 15–18. This number has shown a year-over-year increase, with suspected contributing factors including social pressure, economic instability, and the pervasive influence of technology in daily life. Screening results using the SIMKESWA mental health system across NTB until October 2024 showed that 2,836 adolescents were categorized as having abnormal or borderline conditions [8].

The urgency of mental health in Lombok has also grown, given the recent socio-economic volatility. Data from the Ministry of Health indicate a significant rise in mental health cases in the region in recent years, driven by economic stress, social conflict, and recurring natural disasters [5].

North Lombok is located at 8.35°S 116.15°E. Geographically, the district consists of mountainous areas extending from Bayan to Pemenang subdistricts. These mountain ranges serve as watersheds that channel freshwater toward coastal areas. North Lombok covers a land area of 809.53 km^2, with Bayan being the largest and Pemenang the smallest subdistrict. Data from the Central Statistics Agency (BPS) in 2015 documented several social issues in North Lombok, including abandoned children (1,340 cases), juvenile delinquency (35 cases), street children (4 cases), drug abuse victims (13 cases), and minors in conflict with the law (15 cases).

Additionally, there were 83 families reported with psychological issues. These numbers are compounded by a rise in individuals with mental disorders from 595 in 2021 to 601 in 2022. On the biological front, stunting remains a challenge, with the prevalence in North Lombok exceeding the national target—standing at 15.78% in 2024 [9] . These findings highlight the need for strategic and synergistic efforts to address the interrelated biological, psychological, and social problems in North Lombok [4].

Senior high school students represent a potential group that can act as agents of behavioral change in strengthening biopsychosocial components [1]. Students are critical stakeholders in the dissemination of health knowledge and in fostering awareness, behavior, and healthy lifestyles within the broader society [2].

This study aimed to improve adolescent mental health awareness and screen for psychological conditions in a post-disaster region through school-based community engagement. To address these intertwined mental health challenges and support the broader goal of producing high-quality human capital for Indonesia Emas 2045, localized and sustainable interventions are urgently needed. School-based community engagement programs offer a strategic entry point to promote mental health literacy and enable early detection of psychological conditions among adolescents. This community service initiative, carried out in post-disaster North Lombok, aligns with Sustainable Development Goal 3 (Good Health and Well-being), particularly Target 3.4, by promoting mental health through preventive education and early screening. By empowering youth as agents of behavioral change within their communities, the program serves as a practical model of grassroots contribution to national well-being targets.

2. Material and methods

Implementing the community service program involves optimizing the role of teachers and empowering high school students in North Lombok, West Nusa Tenggara. This program targets representatives of students from high schools in

the North Lombok region, with a total of 40 students participants. The implementation of community service program consists of several stages, namely:

2.1. Socialization

The Community Service Program will be socialized through coordination between the implementation team and partners. The partners will further coordinate with the participants, who are representatives of teachers and students within the North Lombok Branch Office of Education. During the implementation stage, a seminar will be provided to increase understanding of balanced nutrition, physical activity, mental health, and character development. This activity will also collect information related to the following:

- The characteristics of the target participants, including identity, education level, occupation, and other demographic statuses. All participants will be required to sign a consent form.
- Evaluation of the seminar implementation regarding time, location, and relevance of the material to the biopsychosocial components of human development, as well as feedback for future activities.
- Measurement of knowledge levels before and after the seminar. The instrument is a questionnaire consisting of 20 multiple-choice questions related to the presented educational material. The resulting data will be on a ratio scale and analyzed using comparative tests to determine whether there is a significant difference in knowledge before and after. Nominal-scale data will be presented descriptively.

2.2. Training

The training includes how to exercise correctly, safely, and measurably and how to detect stress early. The content covers skills such as measuring maximum heart rate, determining exercise intensity based on heart rate, and performing correct movements to prevent sports injuries. For mental health, training will include measuring and interpreting stress levels using the Self-Reporting Questionnaire-29 (SRQ-29).

2.3. Technology application

Implementation of community service program will include applying updated knowledge-based technology tailored to each material topic.

2.4. Assistance and evaluation

Participants will receive guidance throughout the program and post-program in producing dissemination videos. The evaluation will be carried out according to the objectives: knowledge improvement will be measured with pre- and post-seminar questionnaires; the success of the event will be assessed through feedback questionnaires on execution and usefulness; the role of Mental Health Ambassadors will be evaluated based on video content and engagement levels of the educational videos shared on social media.

2.5. Program sustainability

Program sustainability is expected to be maintained through the continued involvement of teachers as educators and the dissemination of educational videos produced and shared by the participants.

3. Results and discussion

Table 1 presents the characteristics of the respondents and the results of knowledge assessments conducted before (pretest) and after (post-test) the seminar, which involved 40 senior high school students in North Lombok. The respondents had a mean age of 17.30 ± 0.69 years, and all were unmarried. The seminar covered topics on adolescent nutrition, mental health, and physical activity. Knowledge assessment results indicated a significant increase in scores, from a pretest mean of 67.75 ± 8.08 to a post-test mean of 81.62 ± 9.36, with an average increase of 13.87 ± 2.40 points. A Wilcoxon test ($p < 0.05$) confirmed the statistical significance of this improvement, demonstrating that the seminar effectively enhanced participants' knowledge.

The success of this seminar aligns with previous studies supporting the effectiveness of seminars as a teaching-learning method (10–12). Seminars are student-centered and involve presenting topics and engaging in interactive discussions with peers, instructors, or facilitators [10]. Compared to traditional didactic lectures, seminars are more effective, relevant to personal development, and interactive, encouraging dialogue and helping students articulate opinions and clarify doubts [13,14].

Seminars are known to address all three core educational domains: cognitive (knowledge), affective (attitude), and psychomotor (practical skills), and are generally well received by students [10]. Participants reported that the knowledge gained would benefit them in the future and recommended continuing this seminar format [10]. Specifically, seminars have been shown to enhance communication skills, promote effective use of audiovisual tools, build confidence in public speaking, and improve comprehension and application of subject matter [12]. They also stimulate intellectual curiosity, encourage independent reading, and better prepare students for assessments, including viva voce examinations [10].

Table 1 Demographic Profile and Changes in Knowledge Scores Before and After the Health Education Seminar

Group		**Student**
n		40
Age	(years)	17.30±0.69
Marital status	Not married	40 (100%)
	Married	0 (0%)
	Divorced	0 (0%)
Knowledge	Pre-test	67.75±8.08
	Post-test	81.62±9.36[A]
	Δ	13.87±2.40

A: Wilcoxon test p<0.05 between pre-test and post-test

Other studies have similarly found that interactive methods like seminars significantly improve teaching performance, student engagement, and comprehension—demonstrating that active, participatory learning methods outperform passive learning in improving learning outcomes [11,13,14]. Although seminars require more preparation time and adequate facilities, their impact on knowledge and skill development is evident, as reflected in the significant post-test score improvements observed in this study.

Table 2 Overview of Respondents' Psychological Conditions Based on Self-Reporting Questionnaire (SRQ-29)

Classification	**Number of Students (n)**	**Prevalence (%)**
Normal	4	9.76
Depression/Anxiety/Stress	33	80.49
Psychotic	29	70.73
Post-Traumatic Stress Disorder (PTSD)	38	92.68

Prevalence = (Number of cases ÷ Total respondents) × 100%

Table 3 Incidence of Psychological Conditions Among Respondents Based on SRQ-29 Assessment

Psychological Condition	**Number of Students (n)**	**Percentage (%)**
Normal	4	10
Depression/Anxiety/Stress	0	0
Depression/Anxiety/Stress + Psychotic	0	0
Depression/Anxiety/Stress + PTSD	4	10
Depression/Anxiety/Stress + Psychotic + PTSD	18	45
Psychotic + PTSD	10	25
PTSD	4	10
Total	40	100

Following the seminar, participants were asked to complete the Self-Reporting Questionnaire-29 (SRQ-29), an effective tool for screening psychological conditions. Based on the SRQ-29 assessment, Table 2 provides an overview of the psychological classifications of the 40 respondents. The results show that only 9.76% of participants were categorized as having a normal psychological state. In contrast, 80.49% experienced symptoms of depression, anxiety, or stress; 70.73% showed signs of psychotic symptoms; and a striking 92.68% were identified with Post-Traumatic Stress Disorder (PTSD).

Further details are presented in Table 3, which outlines the specific incidence of co-occurring mental health conditions. The data show that 45% of the respondents experienced a combination of depression/anxiety/stress, psychotic symptoms, and PTSD—making it the most common cluster. Additionally, 25% experienced both psychotic symptoms and PTSD, 10% reported depression/anxiety/stress combined with PTSD, and another 10% experienced PTSD alone. Notably, none of the respondents experienced depression/anxiety/stress or psychosis in isolation, indicating a significant overlap of conditions, particularly involving PTSD.

The high prevalence of mental health problems, particularly PTSD, depression, and anxiety among respondents in North Lombok, is closely related to the region's experience with a devastating earthquake in 2018 [15]. Natural disasters are known to have a significant psychological impact [16,17], often triggering trauma and PTSD (18–20). Adolescents, being in a vulnerable and transitional developmental phase, are particularly at risk for mental health disturbances following such events. As confirmed by Molua (2024), natural disasters can traumatize individuals, leading to both acute and long-term psychological effects such as acute stress disorder, PTSD, anxiety, and depression. Research has also shown that the psychological impact of disasters can persist for years, requiring prolonged psychological support [19]. Factors such as proximity to the disaster's epicenter [18], intensity of the event or trauma exposure [19], and previous mental health history also contribute to variations in mental health outcomes [17,21].

A range of interconnected factors influences adolescent mental health [22]. These include individual aspects such as genetics, personality traits, and past trauma, where introverted personalities have been linked to lower psychological well-being [20,21]. Family dynamics, parental support, and household economic conditions also play a role [22], with financial instability and interpersonal family stressors exacerbating mental health issues [19]. At school, academic pressure, peer relationships, and teacher support are critical, as highly competitive academic environments can become major stressors [22,23]. Social influences such as social media, community environment, and access to mental health services matter significantly [18]. Negative societal labels or stigma may also worsen emotional and mental disturbances [22]. The interaction of these factors shapes adolescent mental health, where strong social support, a stable family environment, and sufficient mental health services can offer protection [18]. In contrast, academic pressure, bullying, and lack of support heighten the risks [16,22,23].

The extraordinarily high prevalence of mental health disorders in North Lombok—particularly the 92.68% rate for PTSD is strikingly above the national average. According to Indonesia's 2018 Basic Health Research (Riskesdas), the prevalence of emotional and mental disorders (such as depression and anxiety) among those aged 15 and older is around 6.1%, with a 6.2% depression rate among youth aged 15–24 [22]. The figures from North Lombok also far exceed those from other post-disaster regions. For instance, a study by Newnham et al. (2022) in China and Nepal found that 22.7% of adolescents reported possible PTSD, 45.2% reported depressive symptoms, and 46.6% reported anxiety. Similarly, after the 2015 Nepal earthquake, 43% of adolescents experienced PTSD symptoms, and 38% reported depressive symptoms [19]. In the aftermath of the 2008 Wenchuan earthquake in China, 15.8% had PTSD, 40.5% experienced depression, and 24.5% anxiety six months post-event [19]. The extremely high PTSD rate in North Lombok may point to ongoing trauma from the 2018 earthquake or a particularly vulnerable population. This underscores the profound and possibly long-lasting psychological impact of the disaster while also highlighting the urgent need for community resilience efforts and improved access to post-disaster mental health services [18].

Moreover, the SRQ-29-based screening revealed substantial overlap between PTSD, depression, and psychotic symptoms—highlighting a diagnostic complexity that often goes unnoticed in routine school health checks [16,17,19,21]. The co-occurrence of these symptoms in 45% of respondents calls for more nuanced mental health approaches that account for comorbidity and trauma history.

To our knowledge, this is the first school-based community intervention in a post-disaster Indonesian setting that simultaneously evaluates both mental health literacy improvement and psychological distress prevalence using SRQ-29. The integration of psychoeducation, screening, and youth empowerment under a community service framework provides a replicable model for other disaster-prone regions in low-resource contexts [22,24,25]. These findings contribute to the global discourse on school-centered mental health interventions, particularly in settings where access to professional care remains limited.

4. Conclusion

This study found that adolescents in North Lombok, an area impacted by the 2018 earthquake, had an extremely high prevalence of mental health conditions, particularly PTSD. Through the use of screening instruments such as the SRQ-29, the intervention showed that school-based educational seminars could successfully increase mental health knowledge while identifying psychological distress. The data highlighted the complex nature of teenage psychological issues in disaster-affected communities by demonstrating a significant overlap between respondents' PTSD, psychosis, and depression. These findings support the need for long-lasting, school-centered mental health programs, particularly in places with limited access to psychological services, and make a substantial contribution to the conversation on community-based mental health strategies. To improve resilience and recovery in adolescent populations affected by disasters, future studies should examine the long-term effects of such interventions and incorporate more comprehensive systemic support, such as parent and teacher involvement.

Compliance with ethical standards

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Disclosure of Conflict of interest

No conflict of interest is to be disclosed.

References

[1] Hadiningrat KPSS, Silalahi VAJM. Efforts To Enhance Excellent Human Resources Toward Golden Indonesia 2045. JIPOWER : Journal of Intellectual Power. 2024 Dec 17;1(3):52–66.

[2] Soleh N, Fajriah F, Rahman F. Kontribusi mahasiswa dalam meningkatkan kualitas sumber daya manusia dan mewujudkan visi Indonesia Emas 2045. J Smart Educ Learn. 2024 Apr 30;1(1):22–8.

[3] Nugroho I. Demographic dividend and human capital development in the manufacturing sector in anticipation of Golden Indonesia 2045. JSeD. 2025 Mar 8;7(2):115–20.

[4] Bisri MH, Norsuhaily Abu Bakar. Exploring Stakeholders' Psychosocial Persperctives In Adressing Mental Health Issues Within The Local Community: A Case Study In Mataram, West Nusa Tenggara. APJ. 2024 Apr 30;7(1):223–38.

[5] Yulianti Y, Hayati N, Wati L, Andini MF, Tugiartono W, Ramadhani DI. Faktor-Faktor yang Mempengaruhi Kesehatan Mental Remaja. AN-NUR. 2024 Apr 16;10(1):135.

[6] Wahdi AE, Wilopo SA, Erskine HE. 122. The Prevalence of Adolescent Mental Disorders in Indonesia: An Analysis of Indonesia – National Mental Health Survey (I-NAMHS). Journal of Adolescent Health. 2023 Mar;72(3):S70.

[7] Amalia SP, Ariani N, Lestari DA, Fawwazi MHAF, Ariska R, Fatimatuzzahrah. Edukasi Terpadu: Peningkatan Pengetahuan Penanganan Hygiene, Stunting, dan Penyalahgunaan Obat-Obat Terlarang Pada Masyarakat Banjarmasin Utara. JBN. 2024 Nov 30;4(2):109–17.

[8] Hawari D. 2.836 Remaja Gangguan Mental, Dikbud NTB Gandeng RSJ [Internet]. Portal Berita Harian Radar Lombok. 2024 [cited 2025 July 4]. Available from: https://radarlombok.co.id/2-836-remaja-gangguan-mental-dikbud-ntb-gandeng-rsj.html

[9] Harian PJ, Qalbiy S, Wahidah A, Yuliana D, Nabani T. Leveraging Tuan Guru's Standing Role: A Dramaturgical Approach to Stunting Prevention in East Lombok, Indonesia. ijss. 2024 Aug 22;5(4):1043–53.

[10] Babu K, Babu V, Bhagyalakshmi, Kumar. Evaluation of the effectiveness of seminar as an educational tool among the medical post graduate students. Int J Res Med Sci. 2016;877–80.

[11] Cruz ROD, Perez RC. Effect of Seminar on Teaching on the Performance of Teachers in Higher Education. PAJES. 2024 July 2;5(1):112–9.

[12] Dharmambal C, Anavarathan S. Comparison of seminar and lecture as teaching method and student perception on the seminar and lecture in medical education. Int J Res Dermatol. 2021 Feb 22;7(2):188.

[13] Garvasiuk OV, Namestiuk SV, Tkachuk SS, Guz LO, Velyka AYa, Lapa GM. The Effectiveness Of Interactive Methods In The Educational Process. Clin and experim pathol [Internet]. 2023 Sept 23 [cited 2025 July 5];22(2). Available from: http://cep.bsmu.edu.ua/article/view/287918

[14] Simbolon R, Arfandiansyah AD, Gultom IM. Implementation Of Active Learning Methods In Increasing Student Interest And Understanding In History Lessons At SMAN 14 Medan. ph. 2024 July 22;9(2):332.

[15] Kautsar R. Indonesia Re. 2018 [cited 2025 July 5]. Lombok Earthquake 2018. Available from: https://www.indonesiare.co.id/en/article/gempa-lombok-2018

[16] Brown MRG, Pazderka H, Agyapong VIO, Greenshaw AJ, Cribben I, Brett-MacLean P, et al. Mental Health Symptoms Unexpectedly Increased in Students Aged 11–19 Years During the 3.5 Years After the 2016 Fort McMurray Wildfire: Findings From 9,376 Survey Responses. Front Psychiatry. 2021 May 20;12:676256.

[17] Kelly JT, Danzi BA. Complex Health Needs in Hurricane-Affected Youth and Their Families: Barriers, Vulnerabilities, and Mental Health Outcomes. Res Child Adolesc Psychopathol. 2025 June;53(6):905–19.

[18] Molua CO. Impact of Natural Disasters on Mental Health and Behavioral Changes. JMHIB. 2024 June 26;(12):21–33.

[19] Newnham EA, Gao X, Guragain B, Jiao F, Nathan E, Boyes M, et al. Daily stressors and mental health following disaster: A school-based assessment of adolescent disaster survivors in China and Nepal. Journal of Traumatic Stress. 2022 Dec;35(6):1721–33.

[20] Patricia H, Rahmatiqa C, Apriyeni E. The Relationship Between Personality and Psychological Well Being Adolescents In Disaster-Prone Areas In Padang City. nhjk. 2020 Nov 10;9(2):244–50.

[21] Chiu HTS, Alberici A, Claxton J, Meiser-Stedman R. The prevalence, latent structure and psychosocial and cognitive correlates of complex post-traumatic stress disorder in an adolescent community sample. Journal of Affective Disorders. 2023 Nov;340:482–9.

[22] Bustomi S, Prihayati, Puspitasari Y. Factors that Affect Mental Health in Adolescents: A Literature Review. HTechJ. 2024 Aug 5;2(4):398–404.

[23] Harte P, Barry MM. A scoping review of the implementation and cultural adaptation of school-based mental health promotion and prevention interventions in low-and middle-income countries. Camb prisms Glob ment health. 2024;11:e55.

[24] Akera P, Kennedy SE, Lingam R, Obwolo MJ, Schutte AE, Richmond R. Effectiveness of primary school-based interventions in improving oral health of children in low- and middle-income countries: a systematic review and meta-analysis. BMC Oral Health. 2022 Dec;22(1):264.

[25] Grande AJ, Hoffmann MS, Evans-Lacko S, Ziebold C, De Miranda CT, Mcdaid D, et al. Efficacy of school-based interventions for mental health problems in children and adolescents in low and middle-income countries: A systematic review and meta-analysis. Front Psychiatry. 2023 Jan 6;13:1012257.