

Research Article

## Emotional and Behavioral Problems Among Senior High School Adolescents

Keswari Aji Patriawati<sup>1\*</sup>, Wiradi Suryanegara<sup>2</sup>, and Tiara Angelica Lucita Abineno<sup>3</sup>

<sup>1</sup> Department of Pediatrics, Faculty of Medicine, Universitas Kristen Indonesia, Jakarta, Indonesia;  
e-mail : [keswari.patriawati@uki.ac.id](mailto:keswari.patriawati@uki.ac.id)

<sup>2</sup> Department of Medical Community, Faculty of Medicine, Universitas Kristen Indonesia, Jakarta, Indonesia;  
e-mail : [wiradi.suryanegara@uki.ac.id](mailto:wiradi.suryanegara@uki.ac.id)

<sup>3</sup> Faculty of Medicine, Universitas Kristen Indonesia, Jakarta, Indonesia;  
e-mail : [tiara.abineno@uki.ac.id](mailto:tiara.abineno@uki.ac.id)

\* Corresponding Author : Keswari Aji Patriawati

**Abstract:** Emotional and behavioral problems among adolescents represent a critical issue influencing psychological and social development during a transitional phase of life. The aim of this study is to describe the prevalence and patterns of emotional and behavioral difficulties among adolescents at SMA Kristen Citra Bangsa Kupang, East Nusa Tenggara in 2024. This cross sectional study was conducted from July to August 2024 with a sample of 391 students from grades X to XII. Data collection was performed using the standardized Strengths and Difficulties Questionnaire (SDQ) to measure dimensions including emotional symptoms, conduct problems, hyperactivity, peer relationship issues, and prosocial behavior. The findings indicate that abnormal emotional symptoms were significantly more prevalent in female students (22.5%) than in males (4.9%), while abnormal prosocial behavior was more frequently observed in males (2.3%). Age-based analysis revealed that abnormal emotional problems peaked at age 15 (19.6%), whereas hyperactivity reached its highest abnormal levels at age 16 (4.8%). The study concludes that adolescent emotional and behavioral issues manifest in distinct patterns influenced by age and gender. These results synthesize the need for systematic mental health screening within schools to facilitate early intervention. Implementing gender-specific support and age-appropriate psychological services is essential to mitigate long-term negative consequences, such as academic decline and social withdrawal, thereby ensuring optimal adolescent development in the region.

**Keywords:** Adolescent Behavior; Emotional Problems; Kupang; Mental Health; SDQ.

### 1. Introduction

Adolescence is a critical transition period from childhood to adulthood, involving significant biological, psychological, and social changes that often trigger behavioral and emotional instability. Nationally, data from the 2018 Basic Health Research indicates that approximately 9.8% of the Indonesian population over 15 years old experience emotional disorders such as depression and anxiety, while 6.2% of adolescents face severe stress with self-harm tendencies.

Previous methods used to assess these conditions often relied on diverse psychological assessments, but many adolescents still lack access to precise diagnostic tools and early interventions. A widely utilized instrument for screening is the Strengths and Difficulties Questionnaire (SDQ), which categorizes mental health into five dimensions: emotional symptoms, conduct problems, hyperactivity, peer relationship issues, and prosocial behavior. While effective, previous studies have shown varying results regarding gender and age prevalence. For instance, some research suggests higher prosocial behavior in females due to traits like honesty and friendship, while others argue males score higher due to rapid decision-making in challenging situations. The weakness in many existing approaches is a lack of localized data that considers specific regional demographics, which is crucial for developing targeted school-based mental health policies.

The primary research problem addressed in this study is the high risk of long-term negative impacts such as academic decline, social isolation, and increased criminality in adulthood resulting from undetected and unmanaged emotional issues in high school

Received: April,16,2026;  
Revised: May,17,2026;  
Accepted: June,13,2026;  
Published: June,15,2026;  
Curr. Ver.: June,15,2026;



Copyright: © 2025 by the authors.  
Submitted for possible open access  
publication under the terms and  
conditions of the Creative  
Commons Attribution (CC BY SA)  
license  
(<https://creativecommons.org/licenses/by-sa/4.0/>)

students. To address this, the study proposes a descriptive quantitative approach using the standardized SDQ instrument to screen a sample of 391 students in Kupang. The solution involves identifying specific vulnerability patterns based on age and gender to provide a foundation for early intervention.

The main contributions of this research include: (1) providing empirical evidence of emotional and behavioral problem distributions among adolescents in Kupang, (2) identifying age-specific and gender-specific patterns of mental health difficulties, and (3) offering a reference for educational institutions to implement systematic screening and psychological support services. The rest of this paper is organized as follows: Section 2 reviews the theoretical framework of adolescent development; Section 3 details the research methodology; Section 4 discusses the findings and data analysis; and Section 5 presents the conclusions and recommendations.

## 2. Materials and Method

The research object of this study is the prevalence of emotional and behavioral problems among senior high school students in Kupang, East Nusa Tenggara during the year 2024. This study conducted a systematic descriptive quantitative framework to screen and categorize adolescent mental health status. The research process is structured into four primary phases: preparation, data acquisition via questionnaire instruments, scoring analysis, and categorical synthesis. The research was conducted at SMA Kristen Citra Bangsa Kupang from July to August 2024. The study subjects involved a sample of 391 students from grades X, XI, and XII. Demographically, the respondents consisted of 183 males and 208 females, with the majority falling within the 15 to 16-year age range.

The primary instrument for data collection was the Indonesian version of the Strengths and Difficulties Questionnaire (SDQ), which has been standardized to ensure cultural and linguistic validity for the target population. This screening tool is developmentally calibrated to capture cognitive and emotional nuances during the adolescent transition for ages 11 to 18. The questionnaire measures five core dimensions: emotional symptoms, conduct problems, hyperactivity, peer relationship issues, and prosocial behavior.

The data processing procedure followed uniform psychological assessment protocols. The initial stage involved calculating sub-scores for each difficulty dimension, which were then aggregated to produce a total difficulty score. This total score is derived from the combined values of emotional symptoms, conduct problems, hyperactivity, and peer issues. Conversely, the prosocial behavior sub-score was calculated independently as a measure of personal strength. The resulting scores were mapped against standardized cut-off points to determine the categorical status of each respondent as Normal, Borderline, or Abnormal.

Prevalence analysis within this adolescent population was calculated based on the ratio of the frequency of students in specific SDQ categories to the total number of respondents, expressed as a percentage. To maintain data integrity, incomplete questionnaires were excluded from the analysis to ensure a high level of confidence in the research findings. Furthermore, the study adhered to ethical compliance through informed consent protocols and anonymity to minimize social desirability bias in student responses. The final results of this process were cross-tabulated with demographic data such as age and gender to produce a comprehensive prevalence distribution as a basis for identifying mental vulnerability patterns in adolescents.

## 3. Results and Discussion

### Results

Distribution of Respondent Characteristics Based on Gender, Grade, and Age

**Table 1.** Distribution of respondent characteristics based on gender, grade, and age

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	183	46.8
Female	208	53.2
Grade		
X	165	42.2
XI	99	25.3

XII	127	32.5
Age		
14	34	8.7
15	127	32.5
16	134	34.5
17	92	23.5
18	4	1
Total	391	100

Study at SMA Kristen Citra Bangsa Kupang involved 391 students, primarily females (53.2%) aged 15-16 years. This demographic reflects the critical psychological transition in adolescence. Aligning with Hoosen et al., higher female participation relates to gender-specific social patterns and greater openness in reporting mental health symptoms.

**Distribution of Characteristics in Emotional Symptoms Aspect Based on Gender**

**Table 2.** Distribution of emotional symptoms aspect characteristics based on gender

Gender	Emotional Symptoms			Total (%)
	Normal (%)	Borderline (%)	Abnormal (%)	
Male	142 (36.3%)	22 (5.6%)	19 (4.9%)	183 (46.8%)
Female	97 (24.8%)	23 (5.9%)	88 (22.5%)	208 (53.2%)
Total	239 (61.1%)	45 (11.5%)	107 (27.4%)	391 (100%)

Research data reveals a significantly higher prevalence of abnormal emotional symptoms in females (22.5%) compared to males (4.9%). Consistent with studies by Emerson and Ediati, female adolescents are more susceptible to internalizing issues such as anxiety and depression, whereas males typically exhibit externalizing behaviors. This vulnerability is driven by hormonal factors, low self-esteem, and interpersonal stress, emphasizing the need for age and gender-sensitive mental health interventions.

**Distribution of Conduct Problems Aspect Characteristics Based on Gender**

**Table 3.** Distribution of conduct problems aspect characteristics based on gender

Gender	Conduct Problems			Total (%)
	Normal (%)	Borderline (%)	Abnormal (%)	
Male	80 (20.5%)	36 (9.2%)	67 (17.1%)	183 (46.8%)
Female	98 (25.1%)	42 (10.7%)	68 (17.4%)	208 (53.2%)
Total	178 (45.5%)	78 (19.9%)	135 (34.5%)	391 (100%)

Research data shows a similar prevalence of abnormal conduct problems between males (17.1%) and females (17.4%). This finding indicates that all adolescents are vulnerable to behavioral issues driven by internal factors and social pressure. According to Emerson, maladaptive behaviors such as aggression or rule-breaking often stem from peer pressure and poor emotional regulation as adolescents seek social acceptance. Ultimately, these destructive actions exacerbate their psychosocial condition and negatively impact both themselves and others.

**Distribution of peer relationship problems aspect characteristics based on gender**

**Table 4.** Distribution of peer relationship problems aspect characteristics based on gender

Gender	Peer Relationship Problems			Total (%)
	Normal (%)	Borderline (%)	Abnormal (%)	
Male	106 (27.1%)	56 (14.3%)	21 (5.4%)	183 (46.8%)
Female	128 (32.7%)	56 (14.3%)	24 (6.1%)	208 (53.2%)
Total	234 (59.8%)	112 (28.6%)	45 (11.5%)	391 (100%)

Research data indicates a slightly higher prevalence of abnormal peer relationship problems in females (6.1%) than in males (5.4%). Consistent with a 2019 study, female adolescents are more susceptible to social hurdles and feelings of rejection, often leading to withdrawal or aggression. Furthermore, Rizkiah et al. highlight that peer issues and conduct

problems frequently co-occur; poor social integration triggers maladaptive behaviors, which subsequently further deteriorate the adolescent's social relationships.

**Distribution of Hyperactivity Aspect Characteristics Based on Gender**

**Table 5.** Distribution of hyperactivity aspect characteristics based on gender

Gender	Hyperactivity			Total (%)
	Normal (%)	Borderline (%)	Abnormal (%)	
Male	156 (39.9%)	16 (4.1%)	11 (2.8%)	183 (46.8%)
Female	172 (44.0%)	20 (5.1%)	16 (4.1%)	208 (53.2%)
Total	328 (83.9%)	36 (9.2%)	27 (6.9%)	

While most respondents fall within the normal range, the prevalence of abnormal hyperactivity is slightly higher in females (4.1%) than in males (2.8%). According to Ediaty and Rosenfield, this condition stems from genetic, biological, and environmental factors influencing brain development. The increased vulnerability among female adolescents underscores the necessity for gender-specific attention and interventions in managing hyperactivity.

**Distribution of Prosocial Behavior Aspect Characteristics Based on Gender**

**Table 6.** Distribution of prosocial behavior aspect characteristics based on gender

Gender	Prosocial Behavior			Total (%)
	Normal (%)	Borderline (%)	Abnormal (%)	
Male	168 (43.0%)	6 (1.5%)	9 (2.3%)	183 (46.8%)
Female	193 (49.4%)	13 (3.3%)	2 (0.5%)	208 (53.2%)
Total	361 (92.3%)	19 (4.9%)	11 (2.8%)	391 (100%)

Research data indicates higher prosocial behavior among females, with only 0.5% in the abnormal category compared to 2.3% for males. Aligning with Fitroh et al., this female dominance is attributed to strengths in friendship, honesty, and generosity. However, Istiana suggests that males may exhibit higher prosociality in challenging contexts due to decisive action and risk management, whereas females may hesitate due to perceived situational risks.

**Distribution of Total Difficulties Score Aspect Characteristics Based on Gender**

**Table 7.** Distribution of total difficulties score aspect characteristics based on gender

Gender	Total Difficulties Score			Total (%)
	Normal (%)	Borderline (%)	Abnormal (%)	
Male	118 (30.2%)	32 (8.2%)	33 (8.4%)	183 (46.8%)
Female	92 (23.5%)	55 (14.1%)	61 (15.6%)	208 (53.2%)
Total	210 (53.7%)	87 (22.3%)	94 (24.0%)	391 (100%)

Research findings reveal a higher prevalence of abnormal total difficulties scores among females (15.6%) compared to males (8.4%). This confirms that female adolescents are more susceptible to internalizing issues, such as anxiety and depression, which elevate their overall difficulty scores. Conversely, male adolescents tend to exhibit externalizing behaviors, albeit in lower proportions. These results emphasize the necessity of gender-tailored interventions to effectively address the specific emotional and behavioral challenges faced by each group.

**Distribution of SDQ Component Characteristics Based on Age**

Age	Emotional Symptoms		
	Normal (%)	Borderline (%)	Abnormal (%)
14	23 (5.9%)	3 (0.8%)	8 (2.0%)
15	90 (23.0%)	17 (4.3%)	20 (5.1%)
16	75 (19.2%)	13 (3.3%)	46 (11.8%)
17	48 (12.3%)	12 (3.1%)	32 (8.2%)
18	3 (0.8%)	0	1 (0.3%)
Total	239 (61.1%)	45 (11.5%)	107 (27.4%)

Conduct Problems

Age	Normal (%)	Borderline (%)	Abnormal (%)
14	19 (4.9%)	3 (0.8%)	12 (3.1%)
15	67 (17.1%)	22 (5.6%)	38 (9.7%)
16	48 (12.3%)	31 (7.9%)	55 (14.1%)
17	41 (10.5%)	21 (5.4%)	30 (7.7%)
18	3 (0.8%)	1 (0.3%)	0
Total	178 (45.5%)	78 (19.9%)	135 (34.5%)

  

Hyperactivity			
Age	Normal (%)	Borderline (%)	Abnormal (%)
14	30 (7.7%)	1 (0.3%)	3 (0.8%)
15	110 (28.1%)	8 (2.0%)	9 (2.3%)
16	106 (27.1%)	17 (4.3%)	11 (2.8%)
17	78 (19.9%)	10 (2.6%)	4 (1.0%)
18	4 (1.0%)	0	0
Total	328 (83.9%)	36 (9.2%)	27 (6.9%)

  

Peer Relationship Problems			
Age	Normal (%)	Borderline (%)	Abnormal (%)
14	27 (6.9%)	6 (1.5%)	1 (0.3%)
15	79 (20.2%)	38 (9.7%)	10 (2.6%)
16	76 (19.4%)	39 (10.0%)	19 (4.9%)
17	49 (12.5%)	28 (7.2%)	15 (3.8%)
18	3 (0.8%)	1 (0.3%)	0
Total	234 (59.8%)	112 (28.6%)	45 (11.5%)

  

Prosocial Behavior			
Age	Normal (%)	Borderline (%)	Abnormal (%)
14	30 (7.7%)	3 (0.8%)	1 (0.3%)
15	114 (29.2%)	7 (1.8%)	6 (1.5%)
16	127 (32.5%)	7 (1.8%)	0
17	87 (22.3%)	1 (0.3%)	4 (1.0%)
18	3 (0.8%)	1 (0.3%)	0
Total	361 (92.3%)	19 (4.9%)	11 (2.8%)

  

Total Difficulties Score (E+C+H+P)			
Age	Normal (%)	Borderline (%)	Abnormal (%)
14	23 (5.9%)	5 (1.3%)	6 (1.6%)
15	82 (21.0%)	21 (5.4%)	24 (6.1%)
16	58 (14.8%)	35 (9.0%)	41 (10.5%)
17	44 (11.3%)	25 (6.4%)	23 (5.9%)
18	3 (0.8%)	1 (0.3%)	0
Total	210 (53.7%)	87 (22.3%)	94 (24.0%)

The study reveals that most respondents fall within the normal range across all SDQ dimensions. However, the 15–17 age group, particularly at age 16, exhibits the highest prevalence of abnormal emotional symptoms, conduct problems, and hyperactivity. Consistent with Emerson and Willcutt, age 16 represents a critical transition phase marked by academic pressure, hormonal shifts, and social transitions. Conversely, prosocial behavior remains high among 15–16-year-olds due to rapid empathetic development. Overall, psychological challenges in this period are driven by future-related anxieties and the transition to adulthood, highlighting the necessity for robust coping strategies and social support.

**Discussion**

***Analysis of Emotional and Behavioral Difficulties***

The results indicate that while the majority of students fall within the normal range, a significant portion of the population exhibits symptoms classified as borderline or abnormal. Emotional symptoms emerged as a prominent concern. This aligns with the developmental transition of adolescence, a period characterized by heightened emotional reactivity and the search for identity. The prevalence of these symptoms suggests that many students face internalizing pressures, such as anxiety or low mood, which may be exacerbated by academic demands or social dynamics within the school environment.

### ***Patterns in Conduct and Hyperactivity***

The data regarding conduct problems and hyperactivity show lower frequencies compared to emotional symptoms, yet they remain critical. Behavioral issues often manifest as externalizing symptoms, which are more visible to educators and parents. The presence of these problems, even in a minority, indicates a need for targeted interventions to prevent potential disruptions in both academic performance and social cohesion. Hyperactivity levels among these high school students suggest that while most have developed self-regulation skills, a subset continues to struggle with attention and impulse control, which are essential for structured classroom learning.

### ***Peer Relationships and Prosocial Strength***

A noteworthy finding is the status of peer relationship problems. Adolescents rely heavily on peer validation, and difficulties in this area can lead to social isolation or conflict. Conversely, the high levels of prosocial behavior observed in the sample represent a significant protective factor. Strong prosocial tendencies such as helpfulness and empathy indicate that the school environment fosters a positive social climate. These strengths can be leveraged as a resource for peer-support programs, helping to mitigate the impact of emotional and behavioral difficulties through community-based resilience.

### ***Implications for School-Based Interventions***

The distribution of results across different age groups and grades suggests that mental health risks are present throughout the high school journey. The findings underscore the importance of integrating mental health screening into the school's health services. Early identification of students in the borderline and abnormal categories allows for proactive counseling and support before these issues escalate into more severe psychological conditions. By focusing on both the identified difficulties and the existing prosocial strengths, the school can develop a comprehensive support system that addresses the holistic well-being of its students.

## **4. Conclusions**

This research demonstrates that while the majority of adolescents at SMA Kristen Citra Bangsa Kupang exhibit "Normal" psychological profiles, significant vulnerabilities exist within specific demographics. The findings indicate that abnormal emotional symptoms are predominantly experienced by females (22.5%), whereas abnormal conduct problems are distributed almost equally across genders (17.1% for males and 17.4% for females). The age of 16 emerges as the most critical phase, showing the highest prevalence of emotional difficulties and hyperactivity. These results support the hypothesis that mid-adolescence is a period of heightened psychological risk due to internal developmental changes and external social pressures.

The implication of these findings suggests that school-based mental health programs must move beyond general approaches. Interventions should be specifically tailored to address gender-based symptom manifestation focusing on internalizing issues for females and externalizing behaviors for both genders with prioritized support for students in the 15–17 age bracket. Although the study is limited to a single institution, it provides an empirical foundation for future longitudinal research on adolescent mental health in urban Indonesian settings..

## **References**

- Abas, J., Boekoesoe, L., & Tarigan, S. F. N. (2023). Analisis determinan gangguan kesehatan mental emosional remaja di SMA Negeri 1 Limboto. *Health Information: Jurnal Penelitian*, 15(1), e1302–e1302.
- Achmad, L. N., Aritonang, J. M., Puspitasari, F., & Pariama, G. (2026). Profile of patients with multidrug-resistant pulmonary tuberculosis at Merauke Regional General Hospital, Merauke Regency, South Papua, January 2021–December 2024. *Journal of Innovation Research and Knowledge*, 5(8), 5–8.
- Amdadi, Z., Nurdin, N., Eviyanti, E., & Nurbaeti, N. (2021). Gambaran pengetahuan remaja putri tentang risiko perkawinan dini dalam kehamilan di SMAN 1 Gowa. *Jurnal Inovasi Penelitian*, 2(7), 2067–2074.
- Andri, M. (2023). *Hubungan antara keterlibatan pengasuhan ayah dan kematangan emosi dengan empati pada generasi Z* (Doctoral dissertation, UIN Raden Intan Lampung).

- Athina, N., & Pudjiati, S. R. R. (2024). Rational emotive behavior therapy (REBT) approach in improving anger emotion regulation in adolescents with a family history of bipolar disorder. *Psikostudia: Jurnal Psikologi*, 13(2), 321–328.
- Auha, I. (2013). *Hubungan kematangan emosi dengan keharmonisan keluarga (suami-istri) Desa Golokan Kecamatan Sidayu Kabupaten Gresik* (Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim).
- Batubara, F. R., Patriawati, K. A., & Sistaningrum, N. M. E. V. (2025). The relationship between body image, eating behavior, and physical activity on the nutritional status of adolescents among medical students. *KESANS: International Journal of Health and Science*, 5(1), 125–131.
- Budiyono, A. (2021). Peran keluarga dalam pengelolaan emosi anak usia golden age di Desa Gambarsari. *Jurnal Mahasiswa BK An-Nur: Berbeda, Bermakna, Mulia*.
- Ediati, A. (2015). Profil problem emosi/perilaku pada remaja pelajar SMP-SMA di Kota Semarang. *Jurnal Psikologi Undip*, 14(2), 190–198.
- Emerson, E. (2005). Use of the strengths and difficulties questionnaire to assess the mental health needs of children and adolescents with intellectual disabilities. *Journal of Intellectual and Developmental Disability*, 30(1), 14–23.
- Fakhraihansyah, M. (2024). *Faktor yang berhubungan dengan pengelolaan sampah rumah tangga di Kelurahan Padang Sarai Kecamatan Koto Tangah Kota Padang Sumatera Barat Tahun 2024* (Doctoral dissertation, Universitas Andalas).
- Fitri, A., Neherta, M., & Sasmita, H. (2019). Faktor-faktor yang memengaruhi masalah mental emosional remaja di sekolah menengah kejuruan (SMK) swasta se Kota Padang Panjang tahun 2018. *Jurnal Keperawatan Abdurrah*, 2(2), 68–72.
- Fitri, N. F., & Adelya, B. (2017). Kematangan emosi remaja dalam pengentasan masalah. *JPGI (Jurnal Penelitian Guru Indonesia)*, 2(2), 30–39.
- Fitroh, R., Oktavia, W. K., & Hanifah, H. (2019). *Perbedaan perilaku prososial ditinjau dari jenis kelamin pada relawan sosial* (Doctoral dissertation, Universitas Ahmad Dahlan).
- Gultom, A., Sistaningrum, N. M. E. V., & Prihantini, N. N. (2025). G2P1A0 37–38 weeks pregnant with cephalopelvic disproportion, previous caesarean section scar and anemia: Risk factors, prevention and management—Case report. *KESANS: International Journal of Health and Science*, 5(1), 107–112.
- Harahap, A., Mahadewi, E. P., Ahmadi, D., Tj, H. W., Ganiem, L. M., Rafika, M., & Hartanto, A. (2021). Monitoring of macroinvertebrates along streams of Bilah River, North Sumatra, Indonesia. *International Journal of Conservation Science*, 12(1), 247–258.
- Hoosen, N., Davids, E. L., de Vries, P. J., & Shung-King, M. (2018). The strengths and difficulties questionnaire (SDQ) in Africa: A scoping review of its application and validation. *Child and Adolescent Psychiatry and Mental Health*, 12(1), Article 6.
- Istiana, I. (2018). Perbedaan perilaku prososial remaja ditinjau dari jenis kelamin di Kelurahan Tanjung Rejo Medan Sunggal. *Jurnal Diversita*, 4(1), 58–67.
- Jamnik, M. R., & DiLalla, L. F. (2019). Health outcomes associated with internalizing problems in early childhood and adolescence. *Frontiers in Psychology*, 10, Article 60.
- Karlana, S. E. (2022). *Preferensi masyarakat perkotaan: Studi pembiayaan kepemilikan rumah pada bank syariah*. Publica Indonesia Utama.
- Khadijah, K. (2020). Perkembangan jiwa keagamaan pada remaja. *Jurnal Al-Taujih: Bingkai Bimbingan dan Konseling Islami*, 6(1), 1–9.
- Kountul, Y. P., Kolibu, F. K., & Korompis, G. E. (2018). Hubungan jenis kelamin dan pengaruh teman sebaya dengan tingkat stres mahasiswa Fakultas Kesehatan Masyarakat Universitas Sam Ratulangi Manado. *Jurnal Kesmas*, 7(5), 1–7.
- Langi, L. A., & Tanggo, C. R. (2025). The relationship between compliance of jumantik cadres in larvae eradication and the incidence of dengue hemorrhagic fever (DHF). *KESANS: International Journal of Health and Science*, 5(3), 540–548.

- Lestarina, N. N. W. (2022). Problem emosi dan perilaku remaja di wilayah Gresik. *Jurnal Penelitian Kesehatan*, 12(2), 56–61.
- Luhulima, D. E. J., & Sirait, B. I. (2026). D-dimer in pregnancy. *International Journal of Health, Engineering and Technology (IJHET)*, 4(6), 2673–2679.
- Luhulima, D. E. J., Tanggo, C. R., & Amelia, R. (2026). Laboratory examination of hemolytic disease in neonates due to rhesus incompatibility. *Journal of Innovation Research and Knowledge*, 5(8), 9111–9116.
- Marlina, L., Tiroy Sari B, S., & Adur, M. M. B. (2025). Relationship between personal audio system use and tinnitus among medical students. *International Journal of Health Engineering and Technology (IJHET)*, 4(4), 869–875.