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Original Research Article

Analysis of Strengths and Difficulties in Adolescent Mental Health in Jayapura City: A Cross-Sectional Study

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ABSTRACT

Early detection of mental health problems among adolescents remains limited. This cross-sectional study aimed to analyze the mental health profiles of school-age adolescents and to compare mean rank scores for emotional, behavioral, hyperactivity, peer, and prosocial aspects by education level. The research was conducted from August to October 2024; subject were 397 adolescents aged 11–17 years from 12 secondary schools in four districts in Jayapura City. The results shows that only 51.1% of adolescents fell into the normal category for emotional problems. Significant differences were found in behavioral problems (p = 0.000) and prosocial behavior (p = 0.000) between junior high and high school students, whereas no significant differences were observed in emotional problems (p = 0.099), hyperactivity (p = 0.216), or peer problems (p = 0.511). These results highlight that behavioral and prosocial issues differ by education level, while emotional, hyperactivity, and peer issues do not. The study underscores the importance of early detection and targeted interventions to address behavioral and prosocial challenges among adolescents.

Keywords: Behavioral Problems; Education; Emotional Problems; Mental Health; Prosocial

INTRODUCTION

Adolescent is a period of rapid growth and development during which individuals achieve physical, mental, and social maturity. Adolescents face various situations amid practical lifestyle trends in the era of digitalization. These conditions determine mental health issues in adolescents that lead to risky behavior. Global data show that 1 in 7 adolescents aged 10-19 years' experience mental disorders, which account for 13% of the disease burden in this group. Depression, anxiety, and behavioral disorders are among the leading causes of illness and disability among adolescents (WHO, 2022).

A survey conducted in Indonesia by the Ministry of Health in collaboration with 5 universities from and outside Indonesia found that 34.9% of adolescents had one mental health problem in the past 12 months; anxiety disorders were the most common mental disorders experienced by adolescents (Queensland Centre for Mental Health Research, 2022). A survey of 101 high school students in Semarang found that 47.5% experienced moderate stress and 35.6% experienced severe stress (Rendra Zola et al., 2021). In Papua, only 5.49% of people with mental disorders who were detected received services at health care facilities (Direktorat Kesehatan Jiwa, 2022). Meanwhile, based on the results of early detection activities conducted on adolescents at a junior high school in the Sorong area of West Papua, it was found that 30% of adolescents experience anxiety and depression. Furthermore, research conducted on

adolescents from the Lani tribe in Papua also found that 15.8% of adolescents have poor mental health care behaviors (Agustarika et al., 2023; Kogoya et al., 2023).

Preventive measures and handling of mental health issues are important to prevent negative impacts on character development and to ensure that adolescents do not experience disorders that make their lives suboptimal and uncomfortable (Khairunnisa & Usiono, 2023). Several studies show that adolescent health problems have significant impacts, such as adolescent bullying behavior, anxiety among adolescents, unemployment, poor problem-solving skills, and prolonged stress (Essau et al., 2014; Pangaribuan et al., 2019). In theory, adolescent mental health can be influenced by demographic characteristics, such as age, gender, and education, as well as by the adolescent's social environment, including family, friends, and technology (Aisyaroh et al., 2022).

Mental health is a state of mental well-being that enables a person to cope with the stresses of life, realize their abilities, learn effectively, work effectively, and contribute to their community (WHO, 2022). According to the World Health Organization (WHO), mental health is influenced by individual, social, and structural factors that can protect or weaken mental health. This study departs from the basic theory of determinants of healthy behavior proposed by Lawrence Green, namely that healthy behavior is determined by predisposing factors (demographic characteristics such as education and knowledge), enabling factors (health care facilities and infrastructure), and facilitating factors (social support) (Sarwono, 2012). Based on the theory described above, the researcher used education as a comparison to describe the prosocial dimension of adolescents as a strength, and the dimension of difficulties, consisting of emotional problems, behavioral problems, peer problems, and hyperactivity problems, as aspects of adolescent mental health.

Early detection is still rarely carried out in efforts to prevent mental health problems. A national survey on mental health shows that only 2.6% of adolescents with mental health problems have accessed services that provide support or counseling for emotional and behavioral problems in the last 12 months (Center for Reproductive Health University, University of Queensland, 2022). Data from the 2018 Riskesdas survey shows that the prevalence of Emotional Mental Disorders remains quite high in Indonesia, at 9.8%. Early detection of mental health issues and drug abuse nationwide is at 63.6%, but only reaches 10.3% in Papua Province (Kemenkes RI., 2021). Meanwhile, in 2022, only 0.09% of the population aged ≥ 15 years in Papua Province with a risk of mental health problems received screening (Direktorat Kesehatan Jiwa, 2022). Given the low coverage of early detection, particularly in Papua Province, this study aims to analyze the mental health profile of junior high and high school adolescents as an effort to detect mental health problems early in this adolescent group. This study also analyzes differences in mean rank scores for emotional problems, behavioral problems, hyperactivity problems, peer problems, and prosocial scores among adolescents in Jayapura City, by level of education. Based on the research objectives, the formulated research hypothesis is that there is a significant difference in mean rank scores for the variables of emotional, behavioral, hyperactive, peer problems, and prosocial problems between junior high school and high school adolescents in Jayapura City.

METHODS

Research Design

This is quantitative research with a cross-sectional design. The independent variable in this study is the education adolescents are currently pursuing. The dependent variable is

adolescent mental health, which comprises five dimensions: emotional problems, behavioral problems, hyperactivity problems, problems with peers, and prosocial dimensions.

Population and Sample

The population consisted of all junior high and high school students aged 11-17 years who were active students and had smartphones and/or other devices. The exclusion criterion was students who did not complete the questionnaire because they were absent during the research. The sampling technique used was multistage random sampling. The first stage began by randomly selecting junior high and high schools in each subdistrict, resulting in 12 schools (5 junior high schools and 7 high schools). The second stage involved randomly selecting students from each school to determine the proportional sample size for each grade level. The final stage involved randomly selecting classes to be designated as samples for each grade level. The sample size was calculated using the sample size formula for health research in cross-sectional surveys (N= 30000, P= 0.05, 5% margin of error) from *Stanley Lameshow* (Susanto, 2010). A minimum of 344 was obtained from the calculation results, but 397 respondents were obtained during data collection in the field. This research was conducted in Jayapura City, located in 12 junior high schools and high schools/vocational schools spread across five sub-districts. The research period was from August to October 2024.

Data Collection Technique

Data collection for the study was conducted through completion of the Strengths and Difficulties Questionnaire (SDQ), an indicator of adolescent mental health. This questionnaire has been translated into 40 languages, including Indonesian (*https://www.sdqinfo.org/py/sdqinfo/b3.py?language=Indonesian*). A study conducted among high school adolescents in Indonesia on validity and reliability concluded that the Strengths and Difficulties-Self Report (SDQ-SR) can be used to assess adolescent mental health (Widyastuti et al., 2023). In addition, the questionnaire included questions about respondents' identities, namely age, education, and gender. The data collection procedure began with an initial explanation of how to complete the questionnaire, followed by the respondents completing the informed consent form, and then the questionnaire.

Data Analysis

The research data were analyzed using univariate analysis to calculate the frequency distributions of variables, followed by bivariate analysis to examine differences in mental health scores between junior high school and high school students using the Mann-Whitney test (CI 95%, α= 0.05) with the help of SPSS 21 software. The data were presented in tables and narratives to aid interpretation.

RESULTS AND DISCUSSION

This research collected the data from 397 adolescents aged 11 to 17 years, enrolled in 12 secondary schools across four districts of Jayapura City. The analysis first describes respondent characteristics, including age, gender, and educational level, followed by the distribution of adolescent mental health dimensions as measured by the Strengths and Difficulties Questionnaire (SDQ). Univariate and bivariate analyses were carried out to examine patterns and differences in emotional, behavioral, hyperactivity, peer, and prosocial

domains. The results present a complete understanding of adolescent mental health profiles and highlight differences between junior high and high school students, supplying insights to support early detection and focused interventions.

Table 1. Distribution of Respondents Based on Age, Gender, and Education

Respondent Characteristics	Number (n=397)	Percentage (%)
Age (Year)		
10-12	99	24.9
13-15	170	42.8
16-19	128	32.2
Gender		
Male	114	28.7
Female	283	71.3
Education		
Junior High School	198	49.9
Senior High School	199	50.1

Based on Table 1, it can be seen that the majority of adolescents are in the middle adolescent age group, aged 13-15 years, accounting for 42.8%, while the smallest number are in the early adolescent age group, aged 10-12 years, accounting for 24.9%. Based on gender, the largest proportion (71.3%) of adolescents is female. The sample selection was conducted without considering the proportion of students based on gender. The proportions of junior high school and high school adolescents are almost equal, with high school adolescents accounting for 50.1%.

Table 2. Distribution of Respondents Based on Dimensions of Adolescent Mental Health Issues

Variable Dimensions	Number (n= 397)	Percentage (%)
Emotional problems		
Normal	203	51,1
Borderline	64	16,1
Abnormal	130	32,7
Behavioral problems		
Normal	257	64,7
Borderline	66	16,6
Abnormal	74	18.6
Hyperactivity problems		
Normal	293	73.8
Borderline	63	15.9
Abnormal	41	10.3
Peer problems		
Normal	267	67.3
Borderline	104	26.2
Abnormal	26	6.5
Prosocial		
Normal	357	89.9
Borderline	23	5.8
Abnormal	17	4.3

Table 2 shows that in terms of emotional problems, only 51.1% of adolescents were in the normal category, and 32.7% were in the abnormal category. In the behavioral problems dimension, the majority (64.7%) of adolescents were in the normal category. Similarly, in the hyperactivity dimension, 73.8% were in the normal category, and 67.3% in the peer problems

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dimension were in the normal category. For the strength dimension, namely, prosocial behavior as an indicator of mental health, 89.9% were in the normal category. This study also analyzed the differences in mental health dimensions between junior high school and high school adolescents using the Mann-Whitney test. The Mann-Whitney test was chosen because the data were not normally distributed. Before determining the hypothesis test to be used, a data normality test was conducted using the Kolmogorov-Smirnov test.

Tabel 3. Analysis of Differences in Mental Health Scores among Junior High School and High School Students

	n	*Mean Rank*	*Median Score*	*Sig p value*
Emotional problem scores				
Junior high school	198	189.54	5.00	*0.099*
Senior high school	199	208.42	6.00	
Behavioral problem scores				
Junior high school	198	221.06	3.00	*0.000**
Senior high school	199	177.05	2.00	
Hyperactivity problem scores	198	206.06	4.00	*0.216*
Junior high school	199	191.98	4.00	
Senior high school				
Peer problem scores				
Junior high school	198	202.71	3.00	*0.511*
Senior high school	199	195.30	3.00	
Prosocial scores				
Junior high school	198	171.42	8.00	*0.000**
Senior high school	199	226.40	9.00	

The p-values shown in Table 3 indicate that there is no difference in mean rank scores (for the dimensions of emotional problems, hyperactivity problems, and peer problems, but there is a difference in mean rank scores for the dimensions of behavioral problems and prosocial problems between junior high school and high school adolescents in Jayapura City.

In general, this study has provided an overview of the results of mental health screening among school-aged adolescents in Jayapura City. Table 2 shows the interesting finding that 16.1% of junior high school and high school students in Jayapura City experience emotional problems and are classified as borderline, while 32.7% are classified as abnormal. Furthermore, other findings are also shown in Table 3, where the mean rank score is higher in high school adolescents than in junior high school adolescents. Although the difference is not statistically significant, there is a tendency for emotional problems to increase with higher levels of education. High school adolescents are generally older than junior high school adolescents. The results of this study confirm that there are no significant differences based on the dimensions of emotional problems between junior high school and high school students. However, the higher mean rank score for emotional problems among high school students is consistent with similar studies in Jayapura City, which show a positive correlation between age and emotional problem scores among adolescents (Pamangin et al., 2025). During adolescence, emotional maturity is not yet fully developed, but adolescents are expected to manage their emotions in accordance with their developmental stage. William Kay's theory states that one of the tasks that must be completed during adolescent development is achieving emotional independence from parents or authority figures (Putro, 2017).

During adolescence, psychosocial changes occur, making emotional aspects particularly sensitive. Emotional problems that cannot be resolved in adolescents can have an impact on their quality of life and lead to mental and emotional disorders in the form of anxiety, an inability to make decisions, behavioral problems, and even severe depression. Previous studies have shown that adolescents in Indonesia can experience internet addiction, depression, bullying, and low self-esteem (Juliansen et al., 2024). These problems are forms of mental health issues that can occur due to adolescents' inability to manage their emotions. The high number of adolescents experiencing emotional problems in the abnormal category indicates the need for intervention related to healthy life skills education for adolescents, especially in managing emotions, so that adolescents can achieve a good level of emotional maturity. In line with this study, research conducted on adolescents in Depok, Jakarta, Tangerang, and Denpasar also shows that among the 972 junior high school students, only 46.3% have good mental health, while the rest have moderate or poor mental health (Sulistiowati et al., 2019). Research on 216 junior high school students in Pekanbaru also showed that 36.1% of adolescents experienced abnormal emotional mental conditions and 28.7% experienced emotional mental conditions that fell into the borderline category (Malfasari et al., 2020).

In addition to abnormal emotional problems, this study also shows significant differences in mean rank scores for behavioral problems between junior high school and high school adolescents (Table 3). Adolescents gradually mature and undergo biopsychosocial development. The difference in adolescent behavioral problems (Table 3) is indicated by the high mean rank scores for behavioral problems, hyperactivity, and peer problems in junior high school adolescents compared to high school adolescents. In general, this is normal, as puberty is the early stage of development in early adolescence, which is mostly experienced in junior high school. The results of a bivariate analysis using the Mann-Whitney test indicate significant differences in behavioral problems and prosocial behaviors between junior high school and high school adolescents. The behavioral problem scores of junior high school adolescents were higher than those of high school adolescents. This means that high school adolescents tend to exhibit more positive behavior than junior high school adolescents. In terms of behavioral problems, junior high school adolescents still experience various problems and are not yet able to behave positively in a perfect manner. The behavioral problems measured in this study were indicated by respondents who admitted to becoming very angry and often unable to control their anger (only 37.0% of 397 adolescents chose the answer "not true"). Other measurements related to behavioral problems included behaving well and doing what others told them to do, fighting with others, lying or cheating, and taking things that did not belong to them. Another study conducted on 3,452 adolescents in Indonesia found that mental health problems were more common among adolescents in junior high school and those living in rural areas. The study concluded that mental health problems in adolescents are related to education level and place of residence (Pandia et al., 2021).

The presence of behavioral differences aligns with significant differences in prosocial aspect scores between junior high school and high school adolescents. The higher mean rank of prosocial aspect scores among high school adolescents illustrates that adolescents can interact with their social environment and function as social beings. In this study, high school adolescents were already able to perform their duties in developing concepts about community life. The prosocial aspect was measured using five indicators, namely caring for others, sharing, helping, being kind to younger people, and offering help to others. The results show that most adolescents (89.9%) are in the normal range for prosocial. Prosocial behavior can

be influenced by parenting patterns, peer social support, and empathy (Pratiwi et al., 2025; Wang et al., 2024). Some findings relevant to this study include: research conducted on junior high school students in Padang City found that of 400 adolescents, only 51.2% exhibited high levels of prosocial behavior (Purna, 2024). Prosocial behavior is positive behavior that certainly has implications for a better life for adolescents. Research conducted in China on seventh and eighth graders found that prosocial behavior has a statistically significant contribution to student achievement (Emagnaw & Hong, 2018). In addition to social support for school-aged adolescents, it was also found that school climate, psychological resilience, and prosocial behavior were all positively correlated (Luo et al., 2023).

CONCLUSION

In Jayapura City, only 51.1% of adolescents fall within the normal range for emotional problems, while the majority are within the normal range for behavioral, hyperactive, and prosocial issues. Bivariate analysis indicates significant differences in mean rank scores for behavioral and prosocial problems between junior high and high school students. Self-regulation is identified as a key factor influencing adolescent mental health and may be enhanced through early life skills education. Health workers, the National Population and Family Planning Agency, and educational institutions are encouraged to provide such education and to involve adolescents in health services to foster participation and the development of life skills. Future research should consider expanding the scope to include adolescent-focused interventions, such as the development of information media. Due to the cross-sectional design of this study, causal relationships between mental health scores and education level cannot be established. Therefore, interpretation is limited to observed differences in mean rank scores between junior high and high school students, which are discussed in the context of adolescent developmental task theory. The findings provide an overview of the mental health status of junior and senior high school adolescents across all subdistricts in Jayapura City. This research was funded by a competitive grant from Cenderawasih University.

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