Original Article

The Role of Self-Esteem, Family Relationships, and Social Support With Mental Health Among High School Adolescents: A Cross-Sectional Study

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ABSTRACT

Background: Adolescent mental health has become a major public health concern worldwide. Although self-esteem, family relationships, and social support are recognized as important psychosocial protective factors, evidence regarding their combined contribution to adolescent mental health in the Indonesian context remains limited. This study aimed to examine the associations of self-esteem, family relationships, and social support with mental health among high school adolescents.

Methods: This cross-sectional study was conducted among 146 high school students aged 15–18 years in Padang, West Sumatra, Indonesia, and reported in accordance with the STROBE guidelines. Participants were selected using simple random sampling. Self-esteem, family relationships, social support, and mental health were assessed using the Rosenberg Self-Esteem Scale (RSES), Family Adaptability and Cohesion Evaluation Scale IV (FACES-IV), Multidimensional Scale of Perceived Social Support (MSPSS), and General Health Questionnaire-12 (GHQ-12). Data were analyzed using descriptive statistics, chi-square tests, and multivariable ordinal logistic regression, with adjusted odds ratios (AORs) and 95% confidence intervals (95% CIs) reported to identify factors associated with adolescent mental health.

Results: Bivariate analysis indicated that gender, self-esteem, family dynamics, and social support were significantly correlated with adolescent mental health (all $p < 0.05$). In the multivariable ordinal logistic regression model, adolescents with low self-esteem had significantly lower odds of being in a higher mental health category compared to those with high self-esteem (AOR = 0.00004; 95% CI: 0.000001–0.002; $p < 0.001$). Similarly, adolescents with weak family ties had reduced chances of improved mental health compared to those with strong family ties (AOR = 0.0002; 95% CI: 0.000005–0.007; $p < 0.001$). Gender continued to show a significant association with adolescent mental health (AOR = 82.43; 95% CI: 3.63–1877.76; $p = 0.006$), while social support lost its significance after adjustment.

Conclusion: Self-esteem, family relationships, and social support were significantly associated with adolescent mental health. Although they were not independent predictors in the multivariate model, these factors remain important psychosocial resources. Mental health promotion programs should target multiple psychosocial domains simultaneously, particularly within school and family environments.

Keywords: Adolescents; Mental Health; Self-Esteem; Social Support; Family

Relations; Psychological Resilience

Implications for Practice:

- linical practice should incorporate routine screening for self-esteem, family relationships, and perceived social support during adolescent health assessments to facilitate early identification of psychological vulnerability and timely referral to appropriate mental health services.
- Health policy should prioritize the integration of school- and family-based mental health promotion programs that strengthen self-confidence, family communication, and supportive peer networks as part of comprehensive adolescent health strategies.
- Midwifery education should equip students with competencies in adolescent mental health assessment, counseling, and family-centered care that are adaptable to low- and middle-income countries and other resource-limited settings where access to specialized mental health services remains constrained.

Introduction

Adolescent mental health has emerged as a significant public health issue globally. The World Health Organization (WHO) indicates that approximately one in seven adolescents aged 10 to 19 years suffers from a mental health disorder, with anxiety, depression, and conduct disorder being major contributors to the burden of disease and disability in this demographic (World Health Organization (WHO), (2025). Mental health challenges during adolescence can impact academic achievement, social interactions, emotional development, and ultimately, long-term quality of life (Erskine et al., 2024).

In Indonesia, adolescent mental health is a significant public health issue. Findings from the Indonesian National Adolescent Mental Health Survey (I-NAMHS) indicate that approximately 34.9% of Indonesian adolescents experience mental health problems, with 5.5% meeting the criteria for a mental disorder (Wahdi et al., 2023). Despite this relatively high prevalence, only a small proportion of adolescents seek mental health services, indicating a significant gap between the need for mental health care and the accessibility of professional support (UNICEF, 2024). This situation underscores the critical need to identify protective factors that can improve adolescent mental health.

Many studies have shown that self-esteem, family relationships, and social support act as significant psychosocial protective factors for adolescent mental health. High self-esteem is associated with better emotional regulation, more adaptive coping strategies, and a lower risk of anxiety and depression. Good family relationships can provide a sense of security, emotional support, and guidance needed for adolescents to face various developmental challenges (Medina-Maldonado, V., et al., 2025; Zhang et al., 2024). Furthermore, support from family, peers, and the surrounding environment plays a crucial role in strengthening resilience and reducing mental distress (Cao et al., 2024; Healy et al., 2024).

However, research findings on the impact of psychosocial factors on adolescent mental health have been mixed. Some studies suggest that self-esteem, family relationships, and social support serve as independent indicators of mental health among adolescents (Yu et al., 2025; Zhang et al., 2024). However, growing evidence suggests that the relationship between psychosocial protective factors and adolescent mental health is more complex than a simple direct association. Several studies have reported that resilience, coping strategies, family functioning, and environmental influences may mediate or modify the effects of self-esteem, family relationships, and social

support on mental health outcomes, resulting in weaker direct effects when these factors are examined simultaneously (Liu et al., 2021b; Lu et al., 2024; Medina-Maldonado, V., et al., 2025). This inconsistency in findings suggests that adolescent mental health may be influenced by a complex interaction between individual, family, and social factors, rather than by a single protective factor in isolation (Tietbohl-Santos, et al., 2024).

Furthermore, cultural context may influence how psychosocial factors affect adolescent mental health. Indonesia is characterized by strong collectivist values, close family ties, and community-oriented social relationships. Within this context, families often play a central role in adolescents' emotional development, decision-making processes, and daily activities. Community support and social connectedness may also serve as important protective resources for mental well-being. In contrast, many Western societies place greater emphasis on individual autonomy and independence. These cultural differences suggest that findings derived from Western populations may not be fully generalizable to Indonesian adolescents (Bai et al., 2022; Healy et al., 2024; Huang et al., 2022; Zhang et al., 2024).

Based on Erikson's Theory of Psychosocial Development, Family Systems Theory, Social Support Theory, and Resilience Theory, this study argues that self-esteem plays a role in coping skills, family ties provide emotional stability, and social support enhances resilience, all of which ultimately impact adolescent mental health (Santrock, 2021; Zhang et al., 2024). Therefore, this study aims to investigate the relationship between self-esteem, family ties, social support, and mental health among adolescents in high schools in Padang City, West Sumatra, Indonesia.

Methods

Study Design

This study employed a quantitative design with a descriptive-correlational and cross-sectional approach. The study was reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. A cross-sectional design was considered appropriate because it enabled the examination of the relationships between self-esteem, family relationships, social support, and adolescent mental health at a single point in time. The study began with obtaining ethical approval and research permissions, followed by the selection of participants through simple random sampling. Data were then collected using standardized questionnaires, checked for completeness, and analyzed using IBM SPSS Statistics version 16.

This study was conducted by principal investigators with a background in nursing and a strong commitment to adolescent mental health. These researchers also brought substantial experience in public health and mental health research, particularly regarding the psychosocial determinants that affect adolescents. During the data collection phase, the researchers were supported by several enumerators who had undergone training on the study's objectives, questionnaire administration methods, research ethics considerations, and procedures for verifying the completeness of respondents' answers.

Prior to the start of the study, the researchers had no personal or direct academic affiliations with the respondents. Their interactions were limited to relationships with educational institutions to secure research permits and to facilitate data collection. Consequently, interactions between researchers and respondents occurred exclusively within a professional

framework throughout the research process.

To minimize researcher bias, the entire data collection methodology was applied uniformly using identical instruments and procedures for each respondent. Enumerators also received standardized training to ensure that the dissemination of information and guidance on completing the questionnaire remained consistent throughout the process. Furthermore, the researchers conducted a thorough re-evaluation of data completeness, ensuring that no questions were omitted, while also maintaining objectivity during the analytical phase by focusing on the results derived from the collected data.

Participants

The study population consisted of 230 students enrolled at SMAN 5 Padang, located in West Sumatra, Indonesia. The minimum sample size was calculated using G*Power software version 3.1, employing a priori power analysis for several regression models that included three predictor variables. Assuming a moderate effect size ($f^2 = 0.15$), a 5% significance level ($\alpha = 0.05$), and 80% statistical power ($1-\beta = 0.80$), the required minimum sample size was determined to be 77 respondents. Regarding the actual sample used for this study, a total of 146 respondents was determined by applying the Slovin formula, drawn from a population of 230 students. Consequently, the sample size used exceeded the required minimum sample size and was considered adequate to identify significant relationships among the variables under investigation.

Respondents were selected using a simple random sampling method, ensuring that every student meeting the criteria had an equal chance of being selected as part of the research sample. The inclusion criteria for this study included active students aged 15 to 18 who expressed a willingness to participate and signed an informed consent form. Exclusion criteria included students who were absent during the data collection period or who failed to complete the entire questionnaire.

Of the 230 students screened, 155 met the inclusion criteria and were subsequently invited to participate in this study. A total of 9 students were excluded from the analysis due to incomplete questionnaire submissions. Therefore, data from 146 respondents were analyzed in this study, resulting in a response rate of 94.2% (146/155). No respondents chose to withdraw after completing the questionnaire, and no missing data were detected in the final dataset to be analyzed.

Instruments

Four standardized self-administered questionnaires were used to measure the study variables, including mental health, self-esteem, family relationships, and perceived social support. Mental health was assessed using the General Health Questionnaire-12 (GHQ-12), self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES), family relationships were evaluated using the Family Adaptability and Cohesion Evaluation Scale IV (FACES-IV), and perceived social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS). Before the main study, the questionnaires were pilot-tested among a small group of students who were not included in the final sample to assess the clarity and feasibility of the instruments.

The GHQ-12 consists of 12 items designed to assess general mental health and psychological distress experienced over recent weeks. The RSES comprises 10 items that evaluate global self-esteem and self-worth. The FACES-IV measures family functioning by assessing family cohesion and flexibility, whereas the MSPSS consists of 12 items assessing perceived social

support from family, friends, and significant others. Responses to each instrument were scored according to their respective scoring guidelines, and the resulting scores were categorized into three levels (low/poor, moderate, and high/good) for subsequent statistical analysis.

Data Collection

Data collection was conducted from 28 August to 15 December 2025 at SMAN 5 Padang, West Sumatra, Indonesia. Prior to data collection, ethical approval and permission from the school were obtained. The data collection process was carried out by the principal researcher with the assistance of trained enumerators. Before the main study, the enumerators participated in a one-day training session conducted by the researcher, which covered the study objectives, research procedures, ethical considerations, questionnaire administration, and procedures for checking the completeness of responses. A pilot test was also conducted on a small group of students outside the study sample to assess the clarity and feasibility of the questionnaire. During the main data collection, eligible students were informed about the study objectives and procedures, and those who agreed to participate provided informed consent before completing the questionnaire independently at school during the scheduled session. To ensure data quality, all completed questionnaires were checked immediately for completeness and consistency by the researcher and enumerators. Data were entered using a double-entry procedure to minimize input errors. Questionnaires with incomplete responses were excluded from the analysis. All paper-based questionnaires were stored in a locked cabinet, while electronic data were password-protected and accessible only to the research team.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Univariate analysis was performed to describe respondents' characteristics and the distribution of study variables using frequencies, percentages, means, and standard deviations, as appropriate for the type of data. Before inferential analyses were conducted, the distribution of continuous variables was assessed for normality to determine the most appropriate statistical tests.

Bivariate analysis was performed to examine the relationships between mental health and the independent variables, including self-esteem, family ties, and social relationships. The chi-square test was used to assess associations between categorical variables, whereas correlation analysis was conducted to determine the direction and strength of the relationships between continuous variables. Effect size was also calculated to facilitate the interpretation of the practical significance of the bivariate findings.

Multivariate analysis was performed using ordinal logistic regression because the dependent variable, mental health, was classified into three ordered categories (poor, moderate, and good). Multicollinearity among the independent variables was assessed after model development to ensure that no high correlations existed among the predictors. The regression results are presented as regression coefficients, p-values, and 95% confidence intervals (95% CIs). Model adequacy was evaluated using model-fitting information, goodness-of-fit tests, and pseudo R-squared statistics. A two-tailed p-value of <0.05 was considered statistically significant for all analyses.

Ethical Considerations

This study has been approved by the Health Research Ethics Committee of Alifah University, Padang, under number 001834/KEP-Universitas Alifah Padang/2026. Additionally, before data collection, the researchers received an inquiry from SMAN 5 Kota Padang. Before participating in the study, each respondent is provided with an explanation of the study's purpose, methodology, benefits, and their role as participants. Before making a decision, respondents who are willing to participate in the study are asked to sign a written informed consent form.

The confidentiality and anonymity of responses are maintained throughout the entire research process. The questionnaire does not include any information that could personally identify respondents, and all data is used solely for research purposes. Printed data is stored in secure locations, while electronic data is encrypted and accessible only to researchers.

Results

Participant Characteristics and Distribution of Research Variables.

Table 1. Participant Characteristics and Distribution of Study Variables (n = 146)

Characteristic	Category	n (%)
Gender	Male	60 (41.1)
	Female	86 (58.9)
Age (years)	15	28 (19.2)
	16	49 (33.6)
	17	41 (28.1)
	18	28 (19.2)
Self Esteem	Low	35(24.0)
	Moderate	71 (48.7)
	High	40 (27.4)
Family Relationships	Poor	28 (19.2)
	Moderate	60 (41.1)
	Good	58 (39.7)
Social Support	Low	31(21.1)
	Moderate	65 (44.5)
	High	50 (34.2)
Mental Health	Poor	38 (26.0)
	Moderate	59 (30.4)
	Good	49 (33.6)
Total		146 (100)

Note:*Mean age of participants = 16.47 years (SD = 1.01; range = 15–18 years).*

The final analysis included 146 adolescents. The majority of participants were female (58.9%), while 41.1% were male. The average age of the participants was 16.47 ± 1.01 years, with the highest percentage in the 16-year-old age group (33.6%) (**Table 1**).

Regarding mental health status, 59 participants (40.4%) were classified as having moderate mental health, 49 participants (33.6%) reported good mental health, and 38 participants (26.0%) reported poor mental health. Nearly 50% of participants reported moderate self-esteem (48.6%), with 27.4% reporting high self-esteem and 24.0% reporting low self-esteem. Regarding family dynamics, 41.1% of participants reported moderate family relationships, 39.7% reported good family relationships, and 19.2% reported low-income family relationships. Regarding perceived social support, 44.5% reported moderate support, 34.2% reported high support, and 21.2% reported low support.

Patterns of Association Among Research Variables and Adolescent Mental Health

Table 2. Bivariate Associations Between Participant Characteristics, Psychosocial Factors, and Adolescent Mental Health (n = 146)

Variable	Mental Health			χ^2	p-value	Cramer's V
	Poor n (%)	Moderate n (%)	Good n (%)			
Gender				23.984	0.001	0.405
Male	21 (35.0)	10 (16.7)	29 (48.3)			
Female	17 (19.8)	49 (57.0)	20 (23.3)			
Self-esteem				27.148	0.001	0.305
Low	20 (57.1)	10 (28.6)	5 (14.3)			
Moderate	12 (16.9)	35 (49.3)	24 (33.8)			
High	6 (15.0)	14 (35.0)	20 (50.0)			
Family relationships				18.176	0.001	0.249
Poor	15 (53.6)	9 (32.1)	4 (14.3)			
Moderate	14 (23.3)	28 (46.7)	18 (30.0)			
Good	9 (15.5)	22 (37.9)	27 (46.6)			
Social support				35.865	0.001	0.350
Low	18 (58.1)	10 (32.3)	3 (9.7)			
Moderate	14 (21.5)	34 (52.3)	17 (26.2)			
High	6 (12.0)	15 (30.0)	29 (58.0)			

Note: Chi-square test was used for bivariate analysis. Percentages are presented as row percentages within each category of the independent variable. Statistical significance was set at p < .05. Cramer's V was reported as an effect size measure.

Bivariate analysis showed that gender, self-esteem, family dynamics, and social support were significantly associated with adolescents' mental well-being. Gender showed a substantial association with mental health status (χ^2 = 23.984; p < 0.001). Male participants were more frequently categorized in the good mental health group, whereas female participants were more frequently placed in the good mental health group. Based on Cramer's V, the strongest bivariate association with adolescent mental health was observed for gender (V = 0.405), followed by social support (V = 0.350) and self-esteem (V = 0.305), all of which indicated moderate effect sizes. Family relationships showed a small-to-moderate effect size (V = 0.249) (**Table 2**).

Self-esteem demonstrated a significant association with adolescents' mental health (χ^2 = 27.148; p < 0.001). Teenagers with low self-esteem tended to report worse mental health, whereas those with high self-esteem were more likely to report better mental health. Similarly, family connections were significantly associated with mental health (χ^2 = 18.176; p = 0.001). Participants with strained family connections were more inclined to experience poor mental health, while those with strong family ties were more likely to indicate good mental health.

A significant association was found between social support and adolescents' mental health (χ^2 = 35.865; p < 0.001). Teenagers experiencing low social support were more prone to having poor mental health, whereas those with high social support tended to indicate better mental health. In general, these results indicate that improved psychosocial conditions, especially elevated self-esteem, healthier family dynamics, and enhanced social support, were often linked to better mental health outcomes in adolescents.

Factors Affecting Mental Health in Adolescents

Table 3. Multivariable Ordinal Logistic Regression of Factors Associated With Adolescent Mental Health (n = 146)

Variable	Category	β	SE	Wald	p-value	95% CI
Age	Per 1-year increase	0.766	0.578	1.757	0.185	-0.367 to 1.899
Gender	Male Female	4.412	1.594	7.661	0.006	1.288 to 7.536
Self-esteem	Low High	-10.119	1.975	26.253	<0.001	-13.990 to -6.248
	Moderate High	-3.647	0.829	19.343	<0.001	-5.273 to -2.022
Social support	Low High	0.712	1.825	0.152	0.697	-2.865 to 4.288
	Moderate High	-0.177	0.858	0.042	0.837	-1.859 to 1.505
Family relationships	Poor Good	-8.508	1.838	21.430	<0.001	-12.111 to -4.906
	Moderate Good	-2.698	0.959	7.920	0.005	-4.576 to -0.819

Tabel 4. Model fit statistics

Statistic	Value
Model fitting χ^2	167.769
Df	8
p-value	<0.001
-2 Log Likelihood (final model)	85.432
Pearson goodness-of-fit χ^2	77.779
Deviance goodness-of-fit χ^2	71.232
Cox and Snell R^2	0.683
Nagelkerke R^2	0.772
McFadden R^2	0.531

Note. Multivariable analysis was performed using ordinal logistic regression with a logit link function. Higher categories of the dependent variable indicate better adolescent mental health. Reference categories were female for gender, high self-esteem, high social support, and good family relationships. β = regression coefficient; SE = standard error; CI = confidence interval. Statistical significance was set at p < .05.

Ordinal logistic regression was used for multivariate analysis to identify factors independently associated with adolescent mental health. The results of the model fitting indicated that the final model was statistically significant (χ^2 = 167.769; df = 8; p < 0.001), demonstrating that adding the predictor variables significantly improved the model compared to the intercept-only model. The pseudo R-squared values indicated that the model accounted for a significant portion of the variation in adolescent mental health, with Cox and Snell R^2 = 0.683, Nagelkerke R^2 = 0.772, and McFadden R^2 = 0.531 (Table 3 and Table 4).

After adjustment, gender, self-esteem, and family dynamics continued to show a significant association with adolescent mental health, while age and social support lost statistical significance. Male gender was significantly associated with adolescent mental health (β = 4.412; p = 0.006; 95% CI: 1.288 to 7.536).

Regarding self-esteem, adolescents with low self-esteem (β = -10.119; p < 0.001; 95% CI: -13.990 to -6.248) and those with moderate self-esteem (β = -3.647; p < 0.001; 95% CI: -5.273 to -2.022) had significantly different probabilities of being classified in a higher mental health category compared to those with high self-esteem.

Similarly, compared to adolescents with strong family ties, those with weak family connections (β = -8.508; p < 0.001; 95% CI: -12.111 to -4.906) and those with average family relationships (β = -2.698; p = 0.005; 95% CI: -4.576 to -0.819) showed a notable association with lower levels of mental health.

Conversely, age (β = 0.766; p = 0.185; 95% CI: -0.367 to 1.899) and social support showed no significant independent associations with adolescent mental health in the final model. Neither low social support (β = 0.712; p = 0.697; 95% CI: -2.865 to 4.288) nor moderate social support (β = -0.177; p = 0.837; 95% CI: -1.859 to

1.505) showed a significant difference when compared to the high social support reference group. In summary, these results suggest that self-esteem and familial relationships were the psychosocial factors most reliably linked to adolescent mental health. In contrast, the bivariate correlation for social support was no longer significant after adjusting for other variables in the multivariate model.

Discussion

This study reveals that a range of individual, relational, and social factors influence young people's mental health. In the bivariate analysis, gender, self-esteem, family bonds, and social support were significantly associated with adolescents' mental health. However, after multivariate analysis, only gender, self-esteem, and family relationships remained significantly associated, while age and social support no longer showed an independent association. These results confirm that adolescents' mental health is not determined by a single factor but rather by the interaction between individual psychological characteristics and their surrounding social environment. These results must also be understood within the context of the study sample's characteristics, namely adolescents aged 15–18 from a single high school in Padang with relatively homogeneous characteristics. This homogeneity of the sample may reduce variation in the psychosocial exposures captured in the model and influence the strength of relationships among variables, particularly in multivariate analyses (O'Neill et al., 2023; Steare et al., 2023).

The results of this study indicate that self-esteem is one of the most consistent factors associated with mental health in adolescents. Adolescents with low or moderate self-esteem tend to be more likely to experience more serious mental health problems compared to those with high self-esteem. Theoretically, these results are consistent with views of adolescent development that regard self-esteem as a crucial element in identity formation, self-evaluation, emotional regulation, and the ability to adapt to social and academic stress. High self-esteem helps adolescents view themselves more adaptively, feel more capable, and better cope with stress. This finding aligns with a longitudinal study by Liu et al. (2021), which indicated that self-esteem functions as a protective factor against general mental health problems in early adolescence. It is also consistent with a longitudinal study by Meland et al. (2021), which indicated that self-esteem is strongly associated with self-perceived health and psychological adjustment during adolescence. Therefore, the findings of this study reinforce the view that self-esteem is a vital internal psychological resource for maintaining emotional well-being in adolescents (Liu et al., 2021; Meland et al., 2021).

In addition to self-esteem, this study also found that family relationships continued to have a significant association with adolescents' mental health after controlling for other variables. Adolescents who reported poor or moderate family relationships tended to have poorer mental health compared to those with good family relationships. These results align with Family Systems Theory, which views the family as the primary system influencing emotional regulation, a sense of security, communication, and the adaptive patterns of children and adolescents. A supportive, harmonious, and communicative family can serve as a buffer against psychological stress, whereas family conflicts, poor communication, and low family cohesion can increase the risk of emotional problems. These findings are supported by a systematic review conducted by Izzo et al. (2022), which indicates that family functioning is strongly associated with the

happiness, subjective well-being, and psychological adjustment of children and adolescents. These results align with the research by Oropesa Ruiz (2022), which emphasizes that the quality of the family context, including communication, cohesion, and emotional support, is a crucial element in the psychosocial development of adolescents. Therefore, the findings of this study confirm that family relationships are not merely the social backdrop for adolescent development, but rather an emotional context that is directly linked to their mental health (Izzo et al., 2022; Oropesa Ruiz, 2022)

The strong influence of family relationships in this study can also be understood through a cultural lens. In more collectivist societies, including Indonesia, the family often remains the primary source of emotional support, supervision, value formation, and decision-making during adolescence; family interdependence and obligations are emphasized over individual autonomy (Han & Cheung, 2025; Izzo et al., 2022). In such contexts, the quality of relationships with parents and the emotional atmosphere at home can have a greater impact on mental health than broader social support because adolescents tend to rely on family networks as their primary source of security and coping resources (Kurock et al., 2022; Liu et al., 2021). In other words, when adolescents grow up in a culture that places the family at the center of social relationships, the family's functions can be a very strong determinant of psychological well-being. This explanation aligns with the literature indicating that the family's influence on adolescents' mental health operates not only through direct support but also through the development of a sense of security, self-identity, and the capacity to manage social pressures and expectations embedded within cultural norms (Han & Cheung, 2025; Kurock et al., 2022; Liu et al., 2021). Therefore, the prominence of family relationships in the multivariate model of this study may reflect not only the strength of family relationships in general, but also the significance of the cultural context in which adolescents grow up, particularly in collectivist settings where family cohesion and interpersonal connectedness are highly valued (Han & Cheung, 2025; Izzo et al., 2022; Oropesa Ruiz, 2022).

Another crucial finding is that social support is significantly associated with adolescents' mental health in the bivariate analysis. This finding suggests that adolescents who feel they receive more support from those around them tend to have better mental health (Bauer et al., 2021). This finding aligns with social support theory, which posits that emotional, informational, and instrumental support can buffer stress and help individuals cope with life's pressures in more adaptive ways. During adolescence, support from peers, family, and the school environment can help adolescents feel accepted, heard, and not left to face difficulties alone. This finding is consistent with the research by Liu et al., (2021), which indicates that social support is associated with a reduction in mental health problems among early adolescents. These results are also consistent with several studies that consider social support a protective factor against psychological distress, depression, and emotional difficulties during adolescence (Liu et al., 2021; O'Neill et al., 2023).

Nevertheless, when accounting for gender, self-esteem, family dynamics, and age, social support ceased to have an independent correlation with adolescent mental well-being. This discovery implies that the protective influence of social support might interact with other psychosocial resources rather than functioning as a separate predictor. Teens who recognize greater social support often

report better family relationships and increased self-esteem, suggesting overlapping explanatory variance among these elements. As a result, when these related variables are included together in the multivariable model, the distinct impact of social support is significantly reduced. Recent international studies have shown comparable results, indicating that family functioning tends to account for a greater share of variance in adolescent mental health than perceived social support by itself, especially after controlling for relevant psychosocial factors (Demetriou, 2025; Healy et al., 2024).

This interpretation is further supported by recent evidence suggesting that social support frequently influences adolescent mental health indirectly through internal psychological resources such as self-esteem, resilience, and adaptive coping rather than through a direct pathway. In collectivist societies such as Indonesia, where adolescents rely heavily on family relationships, perceived social support may largely reflect family functioning, thereby reducing its independent statistical effect in multivariable analyses. Therefore, the nonsignificant association observed in the final model should not be interpreted as evidence that social support is unimportant; instead, it indicates that social support operates together with self-esteem and family relationships as part of an integrated psychosocial system that promotes adolescent mental health (Cao et al., 2024; Li & Hao, 2025; Liu et al., 2021).

Furthermore, the model's statistical power should be considered when assessing the lack of statistical significance of social support in the multivariate analysis. Although the sample size in this study exceeded the minimum required based on initial calculations, the inclusion of multiple categorical variables in the ordinal logistic regression resulted in the data being divided into various category combinations. This scenario may reduce the model's actual statistical ability to detect smaller independent effects, particularly when dealing with category combinations that have low frequencies. In other words, the lack of statistical significance for social support in the final model does not imply that social support does not influence adolescents' mental health; rather, it may indicate that its impact operates alongside or through other factors, notably self-esteem and family connections. Recent findings suggest that social connectedness, family ties, and school engagement are interlinked protective factors, making it difficult to distinguish their individual effects within multivariable models (Oberle et al., 2024; Sakellariou, 2023). Moreover, teenagers who feel greater social connectedness across settings such as family, friends, and school generally report improved mental well-being, suggesting that these protective factors often function together rather than separately (Oberle et al., 2024). Studies indicate that school connectedness is associated with reduced depression and anxiety, although its protective effect may depend on broader family and social contexts (Wang & McLeroy, 2023). Consequently, these findings should be interpreted with caution and should not be taken as evidence that social support is unimportant for adolescents' mental health; rather, they suggest that its impact may be embedded within a broader network of social and relational resources that collectively promote psychological well-being (Oberle et al., 2024; Sakellariou, 2023).

Another significant finding in this study is that gender continues to be significantly associated with adolescents' mental health in the multivariate model. This finding suggests that adolescents' mental health experiences cannot be separated from gender differences. However, the direction and magnitude of the effect must be

interpreted carefully in light of the distribution of the data in this study. Research indicates that gender differences in mental health begin to emerge as early as childhood and adolescence and are often influenced by a combination of biological, psychological, and social factors, as well as differences in how psychological symptoms are expressed and reported. Adolescent girls are typically more prone to internalizing symptoms such as anxiety and depression. In contrast, adolescent boys more frequently exhibit externalizing problems, engage in risky behaviors, or tend to underreport emotional distress. A systematic review by Herrmann et al. (2024) indicates that gender-specific mental health needs and risk factors are evident in childhood and adolescence; therefore, interpreting gender-related findings must take into account social context, gender role norms, and patterns of seeking psychological support. Therefore, the findings regarding gender in this study are best viewed as aspects of adolescents' psychosocial developmental dynamics rather than merely biological differences between men and women (Herrmann et al., 2024; Nivette et al., 2021; O'Neill et al., 2023).

Overall, the findings of this study support the view that adolescent mental health is a multidimensional phenomenon, shaped by the interaction between individual, family, and social environmental factors. In this study, self-esteem and family relationships emerged as the factors most consistently associated with adolescent mental health. At the same time, social support remained significant in bivariate analysis but did not show an independent contribution after adjusting for other variables. The results of this study indicate that understanding adolescent mental health cannot focus solely on personal characteristics but must also consider the quality of family relationships, cultural context, and the experience of social support in daily life. In the future, research with larger, more diverse samples and longitudinal designs is needed to examine the direct and indirect relationships between self-esteem, family relationships, social support, and adolescent mental health in greater depth. Such an approach will support the development of more effective and relevant explanatory models for school-, family-, and community-based adolescent mental health interventions (Herrmann et al., 2024; Izzo et al., 2022; Liu et al., 2021).

Implications and limitations

This research adds to the growing body of evidence that adolescent mental well-being is influenced by the interaction of personal and family-related psychosocial factors, particularly self-esteem and family bonds. The results underscore the importance of adopting a multidimensional approach in adolescent mental health studies, where internal psychological resources and the family environment are considered together rather than as separate factors. These findings also lay the groundwork for future research to explore more complex pathways linking self-esteem, family dynamics, social support, and adolescent mental well-being, including the potential influences of resilience, coping mechanisms, academic pressure, and digital or social media use. However, it is important to acknowledge several limitations. First, the sample size was relatively small and drawn from a single high school in Padang, which may limit the representativeness and generalizability of the results to adolescents in different educational, cultural, or geographical contexts. Second, the cross-sectional design precludes any conclusions regarding causal relationships between psychosocial factors and adolescent mental health. Third, all variables were assessed using self-report questionnaires, which may

be subject to reporting, recall, and social desirability biases. Ultimately, the categorization of psychosocial factors and mental health outcomes may have reduced data variability and weakened the relationships observed in the multivariable model. Consequently, future studies should include larger and more diverse samples, employ longitudinal designs, and explore the integration of self-report data with additional assessment sources to provide a more comprehensive understanding of adolescent mental health.

Relevance to Practice

The results of this study indicate that efforts to improve adolescents' mental health should focus on strengthening self-esteem and family relationships, as these are the factors most consistently associated with mental health. In nursing practice, community nurses, school nurses, and healthcare professionals can conduct routine mental health screenings using validated tools, identify adolescents with low self-esteem or family relationship issues, and provide basic mental health education and counseling. Schools can design school-based mental health promotion programs that emphasize improving adolescents' self-confidence, problem-solving skills, and emotional regulation through counseling, peer groups, and life skills training. In addition, parents need to be actively involved in family education programs that emphasize open communication, emotional support, and positive relationships with adolescents. In the health care and policy sectors, the findings of this study can serve as a foundation for the development of adolescent mental health programs that integrate schools, families, primary health care services, and the community, so that promotive and preventive initiatives can be implemented more comprehensively and sustainably.

Conclusion

This study reveals that mental health in adolescents is associated with various psychosocial factors, particularly self-esteem and family relationships. At the same time, social support showed an association only in bivariate analysis and was no longer significant after controlling for other variables. This research indicates that adolescents with low self-esteem and disharmonious family relationships are at higher risk of experiencing mental health problems. Therefore, efforts to improve adolescent mental health should focus on the early identification of psychological issues in schools, strengthening self-esteem through mental health promotion programs, and involving parents in fostering effective communication and strong family support. An approach that involves collaboration between schools, families, and health services is crucial to ensure that interventions for adolescent mental health are implemented more effectively, purposefully, and sustainably.

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Conflicts of Interest

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Supplementary Materials

Supplementary File S1: Research Instrument contains the full questionnaire used for data collection.

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