Enhancing Adolescent Mental Health Through Independence and Social Support: A Cross-Sectional Study in Makassar, Indonesia

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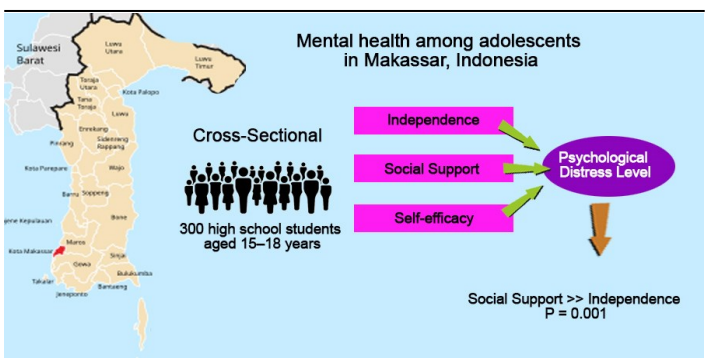
ABSTRACT

Despite the growing recognition of adolescent mental health challenges, there is limited evidence on how adolescent independence and social support interact to influence psychological distress, highlighting the need for contextualized findings to guide mental health interventions. This study explores the relationship between adolescent independence, social support, and psychological distress levels in Makassar, Indonesia. A total of 300 students aged 15–18 years were selected using stratified random sampling. Data collection was performed using validated instruments measuring adolescent independence, social support, and psychological distress levels. Data analysis included descriptive statistics, bivariate analysis (chi-square test), and multivariate analysis (logistic regression) to identify dominant factors influencing adolescent independence. Approximately 60% of adolescents reported high independence, while 75% experienced mild to moderate psychological distress. High social support was significantly associated with greater independence ($p < 0.05$). Self-efficacy emerged as a key protective factor against psychological distress. These findings underscore the importance of integrating social support and self-efficacy, building programs into school curricula to mitigate anxiety and depression among adolescents.

ABSTRAK

Meskipun ada peningkatan pengakuan terhadap tantangan kesehatan mental remaja, bukti yang ada masih terbatas mengenai bagaimana kemandirian remaja dan dukungan sosial berinteraksi dalam mempengaruhi tekanan psikologis, sehingga menyoroti perlunya temuan-temuan yang sesuai dengan konteks untuk memandu intervensi kesehatan mental. Penelitian ini mengeksplorasi hubungan antara kemandirian remaja, dukungan sosial, dan tingkat tekanan psikologis di Makassar, Indonesia. Sebanyak 300 siswa berusia 15-18 tahun dipilih dengan menggunakan stratified random sampling. Pengumpulan data dilakukan dengan menggunakan instrumen yang telah divalidasi untuk mengukur kemandirian remaja, dukungan sosial, dan tingkat stres psikologis. Analisis data meliputi statistik deskriptif, analisis bivariat (uji chi-square), dan analisis multivariat (regresi logistik) untuk mengidentifikasi faktor-faktor dominan yang mempengaruhi kemandirian remaja. Sekitar 60% remaja melaporkan kemandirian yang tinggi, sementara 75% mengalami stres psikologis ringan hingga sedang. Dukungan sosial yang tinggi secara signifikan berhubungan dengan kemandirian yang lebih besar ($p < 0,05$). Efikasi diri muncul sebagai faktor pelindung utama terhadap tekanan psikologis. Temuan ini menggarisbawahi pentingnya mengintegrasikan dukungan sosial dan program pengembangan efikasi diri ke dalam kurikulum sekolah untuk mengurangi kecemasan dan depresi di kalangan remaja.

GRAPHICAL ABSTRACT



Keyword
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INTRODUCTION

Adolescence represents a developmental stage characterized by psychological and emotional challenges. Psychological distress experienced during this period can affect long-term mental well-being (World Health Organization, 2021). According to the World Health Organization's Mental Health Action Plan (2020–2030), addressing adolescent mental health aligns with Sustainable Development Goal 3 (SDG 3), which emphasizes "good health and well-being" for all (World Health Organization, 2024). Indonesian National Survey on Adolescent Mental Health (2022) reported that 26.7% of adolescents experience anxiety, 5.3% depression, and 2.4% behavioral disorders. Factors such as academic pressure, family conflicts, and negative influences from the social environment further exacerbate adolescent mental health conditions. Studies conducted by Acoba (2024) and Li et al. (2021) highlight the role of independence and social support in mitigating mental health risks. However, gaps persist in understanding how these factors interact in urban settings like Makassar, Indonesia. The consequences of these psychological challenges can include low self-confidence, increased risk of substance abuse, and severe psychological disorders such as clinical depression.

The interrelationship among independence, social support, and mental health has garnered increasing attention in psychological research. Theoretical frameworks that link these constructs provide insights into how social dynamics influence mental health outcomes and underscore the importance of fostering supportive environments to enhance individual well-being. Independence, often conceptualized as autonomy in decision-making and self-sufficiency, can influence mental health both positively and negatively. For instance, individuals exhibiting high levels of independence may experience improved self-esteem and reduced feelings of helplessness. However, a lack of social support can make such independence detrimental, as solitary coping strategies may lead to increased stress and vulnerability to mental health issues (Bjørlykhaug et al., 2021. This consonance with independent functioning mirrors findings in various demographic groups, including college students and youth, who may rely heavily on supportive relationships to navigate their mental health challenges effectively (McDermott et al., 2021).

Social support acts as a buffer against the psychological burdens of independence by providing emotional, informational, and instrumental assistance. A systematic review detailed how perceived social support correlates with reduced symptoms of loneliness and depression, highlighting that supportive social networks can foster resilience and recovery from mental health issues (Wang et al., 2018). The impact of social support on mental health is especially paramount during times of stress, where interpersonal relationships can ameliorate the adverse effects of isolation and enhance an individual's ability to cope with challenges (Bjørlykhaug et al., 2021; Shahdadi et al., 2017). Moreover, social support comes in various forms—objective, subjective, and the utilization of available support—which collectively contribute to an individual's mental health efficacy (Liu & Ni, 2023).

Frameworks that integrate the concepts of independence and social support underscore the necessity for policies and interventions aimed at enhancing mental health across diverse populations. For instance, school-based mental health programs have been recognized as pivotal in promoting well-being among students by addressing their social connectedness. Such initiatives not only foster educational engagement but also help students develop healthy coping strategies that are less reliant on solitary behavioral patterns (Margaretha et al., 2023). Furthermore, the involvement of consumers in the shaping of mental health services epitomizes the significance of integrating social support mechanisms into mental health frameworks (Ahlstrand et al., 2024). Moreover, the multifaceted nature of social support systems suggests

that interventions should target and enhance community structures that support mental health recovery. These populations often report elevated rates of mental health challenges, underscoring the necessity of tailored approaches that consider their unique contexts and experiences.

A number of studies have examined the factors that influence adolescents' mental health and their impact on behavior. For example, a study conducted by Berny and Tanner-Smith (2022) found that adolescents with low levels of independence had twice the risk of experiencing anxiety and depression compared to adolescents with high levels of independence. Another study by Suwinyattichaiporn & Johnson (2022) showed that social support from family and peers can reduce adolescent stress levels by 40%. This study aligns with previous studies in highlighting the importance of social factors in adolescent mental health, but differs in its analytical approach, which focuses more on the role of adolescent independence in preventing psychological distress.

School-based interventions that target the improvement of self-efficacy and the establishment of supportive social networks are highly relevant for implementation as preventive strategies against mental health issues (Favini et al., 2024). In the context of community mental health, building adolescent self-reliance has a long-term impact on reducing psychological burden in later life (Oloruntoba & Asare-Doku, 2021). The concept of adolescent self-reliance is not only important for personal development, but also serves as a foundation for developing mental resilience amidst the increasing psychosocial pressures of adolescence (Lenkens et al., 2020).

Makassar City was selected as the research location because it has a high adolescent population and diverse social dynamics. Makassar, with over 200,000 adolescents, faces unique challenges, including rapid urbanization and digital exposure. Specifically, the city contends with high academic pressure, rapid urbanization, and increased exposure to risk factors such as promiscuity and social media use. Therefore, this study is expected to provide a broader picture of the factors that influence adolescents' independence in facing psychological challenges in an urban environment.

Numerous studies have examined adolescent mental health through various lenses, including the impact of peer relationships, school environment, and access to mental health services (Hoover & Bostic, 2021; Long et al., 2021; Rodgers et al., 2022; Stuke et al., 2025). Prior research often focused on singular factors such as emotional support from parents or peer bullying, without comprehensively addressing the dynamic interplay between adolescent independence, social support, and psychological resilience. Moreover, most studies have been conducted in Western or highly urbanized contexts, limiting their applicability in settings like Indonesia, where cultural norms and familial roles significantly shape adolescent development (Abidin et al., 2023).

This study addresses this gap by investigating how adolescent independence, social support, and self-efficacy collectively influence psychological outcomes in a localized Indonesian setting. Unlike earlier studies that examined these variables in isolation, this research employs a holistic framework to understand their interdependence in shaping adolescent mental health. The study emphasizes the importance of self-reliance as a preventive factor against psychological harm, an area that remains underexplored in Southeast Asian contexts, particularly among high school students. Therefore, the aim of this study is to develop an evidence-based understanding of how adolescent independence, social support, and self-efficacy contribute to psychological well-being among high school students in Makassar, Indonesia, and to provide practical insights for targeted mental health interventions.

Table 1
Characteristics of respondents

Variabel	Frequency (n)	Percentage (%)
Gender		
Male	150	50
Female	150	50
Age (years)		
15	50	16,7
16	80	26,7
17	100	33,3
18	70	23,3
Parental Education		
Basic	135	45
Medium	105	35
High	60	20
Parent's Occupation		
Labor	90	30
Farmers	75	25
Merchant	60	20
Public Servant	45	15
Others	30	10

METHODS

Type of Research and Analytical Approach

This study employed a quantitative method with a cross-sectional design. This approach was chosen to analyze the relationship between adolescents' level of independence and the risk of psychological harm based on data collected at a single point in time. This study was conducted in several high schools in Makassar City from January to June 2024. The schools involved were selected based on population characteristics that reflected the social and economic diversity of the city.

Participant Selection and Research Context The research subjects were high school students aged 15–18 years, selected according to predefined inclusion and exclusion criteria. Inclusion criteria included students who voluntarily agreed to participate in the study and had obtained permission from parents or guardians. The research setting included the school environment to ensure appropriate representation of the adolescent social context. Literature sources were drawn from recent scientific journals, WHO reports, publications from the Central Bureau of Statistics, and academic textbooks related to adolescent independence and mental health.

Study Population

The population in this study comprised all high school students in Makassar City. The research sample of 300 respondents was selected using a stratified random sampling technique to ensure proportional representation from various social and economic backgrounds. This cross-sectional study was conducted in Makassar City (January–June 2024) among 300 high school students (15–18 years) selected via stratified random sampling. Stratification was based on school type (public/private) and socioeconomic strata (parental education and occupation). The sample size (n = 300) was calculated using G*Power 3.1, assuming a medium effect size ($f = 0.15$), $\alpha = 0.05$, and 90% power, consistent with prior studies on adolescent mental health.

Research Stages

The research stages included obtaining official permissions, conducting research socialization, collecting data through questionnaires, and performing data analysis. Before completing the questionnaire, which was administered by trained research assistants, each participant received information regarding the purpose of the study and signed an informed consent form

Table 2
Distribution of main variables

Variabel	Frequency (n)	Percentage (%)
Independence Level		
High	180	60
Medium	90	30
Low	30	10
Social Support		
High	150	50
Medium	105	35
Low	45	15
Stress Level		
Mild	120	40
Medium	105	35
High	75	25
Self-Efficacy		
High	165	55
Medium	90	30
Low	45	15

as an indication of their voluntary participation.

Research Instruments

The research instruments consisted of a structured questionnaire comprising the following standardized scales: 1) Adolescent Independence Scale (Steinberg, 2002): 20 items measuring decision-making and self-control (Cronbach's $\alpha = 0.88$). The assessment categories for adolescent independence were 60% high, 30% medium, and 10% low. The categories for self-efficacy were 55% high, 30% medium, and 15% low. 2) Social Support Questionnaire (Sarason et al., 1983): 15 items assessing emotional and instrumental support ($\alpha = 0.86$). The categories for social support assessment were 50% high, 35% medium, and 15% low. 3) DASS-21 (Lovibond & Lovibond, 1995): 21 items evaluating depression, anxiety, and stress ($\alpha = 0.90$). The categories for stress level assessment were 40% mild, 35% moderate, and 25% high.

Data Processing and Analysis

Descriptive statistics and logistic regression analyses were conducted using SPSS version 26. Bivariate analysis (chi-square test) was used to assess associations between variables, while multivariate analysis identified dominant predictors of adolescent independence. The results of the data analysis were presented in the form of tables and graphs illustrating the relationships between the independent and dependent

RESULTS

The results of this study present a comprehensive overview of the data obtained, focusing on the primary variables under investigation. The collected data were analyzed to identify the relationship between adolescents' self-reliance and the prevention of psychological harm, taking into account social support and psychological stress levels..

Based on the research results shown in Table 1, of the 300 participants, 50% were male, 33.3% were 17 years old, and 20% had parents with higher education.. In terms of occupation, the majority of respondents' parents worked as laborers (30%), farmers (25%), traders (20%), civil servants (15%), and others (10%), reflecting the diverse socioeconomic conditions of respondents. The types of psychological injuries experienced by respondents include anxiety (30%), academic stress (25%), mild depression (20%), social conflict (15%), and family pressure (10%).

Table 3
Distribution of adolescent independence levels based on social support categories

Social Support	High Independence Level (%)	Medium level of independence (%)	Low Independence Level (%)
High	75	20	5
Medium	55	35	10
Low	30	45	25

The results of the univariate analysis showed that the majority of adolescents' independence levels were in the high category (60%), while stress levels tended to be in the mild to moderate category (75%). Social support was also relatively good, with 50% of respondents reporting high levels of support. In addition, adolescents' self-efficacy was predominantly in the high category (55%), indicating their confidence in facing psychological challenges. Table 2 presents the distribution of the main variables, including independence, stress levels, social support, and self-efficacy. It shows that most respondents reported moderate social support (35%) and moderate stress levels (35%).

Table 3 highlights the bivariate analysis results, showing the association between social support and independence. The chi-square test revealed a significant relationship ($p < 0.05$), indicating that adolescents with higher social support tended to have higher levels of independence. This pattern is further detailed in Table 4, where the chi-square test confirmed a significant relationship between social support and independence ($p = 0.001$). Specifically, 75% of adolescents with high social support had high independence, while those with low social support were more likely to have moderate to low levels of independence. This confirms the important role of the social environment in building adolescents' independence.

Table 5 presents the multivariate analysis identifying two key predictors of adolescent independence: social support and self-efficacy. The odds ratio (OR) for social support was 3.50, meaning that adolescents with high social support were 3.5 times more likely to exhibit high independence than those with low support. Self-efficacy had an even stronger association, with an OR of 6.05.

Overall, these findings demonstrate that adolescents with high social support tend to have better levels of independence. Enhanced adolescent independence can be achieved through strong social support systems and effective stress management. These results serve as a foundation for developing school- and family-based interventions to foster adolescents' psychological resilience.

DISCUSSION

The respondent characteristics in this study indicated that distributions across age, gender, and socioeconomic background contributed to understanding adolescent independence. These results are in line with research conducted by Benito-Gomez et al. (2020), who found that sociodemographic factors, including parental education and occupation, play an important role in the development of adolescent independence. Students who originate from families with higher educational attainment tend to have better levels of independence compared to students from families with lower educational backgrounds.

In this study, it was found that the majority of respondents' parents worked in the in-

Table 4
Relationship between social support and adolescent independence

Variable	Chi-Square Value	Degrees of Freedom (df)	P-value	Significance
Social Support vs Independence	28.65	4	0.001	$p < 0.05$

Table 5
Logistic regression analysis for key predictors of adolescent independence

Predictor	Coefficient (B)	Standard Error	p-value	Odds Ratio (OR)	95% CI for OR
Social Support (High vs Low)	1.25	0.32	0.001	3.5	1.85–6.62
Stress (High vs Low)	-0.45	0.28	0.1	0.64	0.37–1.11
Self-Efficacy (High vs Low)	1.8	0.41	0	6.05	2.72–13.45

formal sector, such as laborers and farmers. This suggests the likelihood of limited family resources to fully support the development of adolescent independence. A study by Almeida & Morais (2025) also showed that children from families with low economic conditions often lack access to non-formal educational opportunities that foster independence.

The results of the analysis showed a significant relationship between adolescents' level of independence and social support, psychological stress levels, and self-efficacy. The relationship between social support and independence is in line with research by Nurain et al. (2021) who found that adolescents with strong social support from family and friends are more likely to develop independence-related skills. In this study, the majority of adolescents with high social support had better independence, supporting Bronfenbrenner's ecological theory of development, which emphasizes the importance of the social environment in shaping individual behavior. The findings support Bronfenbrenner's theory, emphasizing how microsystems (family, school) and mesosystems (interactions between environments) shape independence. For instance, parental education (microsystem) and school-based social support (mesosystem) jointly influence self-efficacy.

Furthermore, the level of psychological stress was also found to affect adolescents' independence. This result is supported by research from Kim et al. (2020), which states that high levels of stress can hinder the development of adolescent independence because they are more susceptible to experiencing emotional dependence on others. In this study, adolescents with high stress levels tended to have lower levels of independence, confirming that stress management is an important factor in the development of independence.

This study shows that self-efficacy has a strong relationship with adolescents' level of independence, which aligns with the findings of Mikkelsen et al. (2020) self-efficacy framework but contrasts with Hampton-Anderson et al. (2021), who prioritized economic factors. This discrepancy reflects cultural differences in social support dynamics. High self-efficacy allows adolescents to be more confident in making decisions, which is a key indicator of independence. Compared to the study conducted by Twum-Antwi et al. (2020), it was found that the role of the school environment in building self-efficacy also plays an important role in increasing independence. Furthermore, the findings of this study diverge from those of Hampton-Anderson et al. (2021) who emphasized the predominance of family economic factors over social support in influencing independence. This difference may stem from differing social and cultural contexts between the research sites, in which the social environment in this study appeared to play a more dominant role than economic conditions in shaping adolescent independence.

The interaction effects between independence and social support in relation to mental health have indeed been examined in psychosocial research. High levels of independence can present unique challenges when coupled with varying degrees of social support. For instance, while social support can serve as a buffer against mental health issues, individuals with a strong independent self-construal might perceive such support as a threat to their autonomy, potentially leading to adverse emo-

tional responses such as anxiety or depression (Park et al., 2012). This dynamic highlights the nuanced relationship between perceived support and self-efficacy, where the effects of social support can be conditioned by one's level of independence (Shelton et al., 2017). Moreover, studies indicate that social support can positively influence mental health through resilience mechanisms, wherein supportive relationships help mitigate the effects of stressful individual experiences (Hopp et al., 2013). In populations with lower independent self-construal, such as those from collectivist backgrounds, social support tends to have a stronger positive correlation with mental health outcomes, emphasizing the importance of cultural context in these interactions (Shelton et al., 2017; Takagishi & Sakata, 2012). In contrast, individuals with higher independence and low social support may experience increased vulnerability to mental health challenges, emphasizing the critical role that supportive social networks play in overall well-being (Gerteis & Schwerdtfeger, 2016).

School-based interventions are crucial for addressing mental health issues among adolescents, as they provide structured environments for education, support, and early identification of mental health concerns. These interventions raise awareness about mental health and actively work to reduce stigma and discrimination associated with mental illness Aurelio (2024). For instance, resilience-based programs implemented in schools have been shown to enhance positive mental health outcomes and increase resilience among adolescents, underscoring the importance of systematic evaluations of such programs (Dray et al., 2014).

Furthermore, a systematic review highlighted the effectiveness of mental health promotion interventions specifically tailored for younger students in low- and middle-income countries (LMICs), indicating that schools are vital for reaching children and families early in their development (Barry et al., 2013). Addressing barriers to the implementation of these interventions is essential, as concerns about stigma can deter student engagement. Understanding these barriers can lead to more successful integration of mental health programs within schools (Gee et al., 2020).

Innovative approaches, such as utilizing social media for mental health literacy, have shown promise for increasing accessibility and promoting social connectedness among students (Hassen et al., 2020). Programs need to focus on the implementation and adaptation of evidence-based practices to align with cultural contexts, thereby improving their effectiveness in diverse settings (Harte & Barry, 2024). Ultimately, these interventions can substantially contribute to the overall mental health landscape within educational environments, making it imperative for policymakers and practitioners to prioritize them (Fazel et al., 2014).

The findings of this study offer valuable insights in the field of public health, particularly in efforts to enhance psychological resilience and adolescent independence. The study confirms that strong social support serves as a protective factor against the negative effects of psychological stress on adolescents. These findings support the development of community-based interventions aimed at strengthening self-reliance skills through mental health education and reinforcing social support within school and family settings. Furthermore, the results can serve as a foundation for designing school-based guidance and counseling programs focused on improving self-efficacy and stress management strategies. Such programs can help adolescents build social competence and autonomy, equipping them to navigate future psychosocial challenges more effectively. In addition, these findings are relevant for informing education and public health policies that aim to develop more effective intervention strategies to promote adolescent independence. Future research is encouraged to explore other influencing factors such as the role of digital media, cultural values, and coping strategies employed by adolescents to deal with stress and social pressure. By broadening the scope of research and adopt-

ing diverse approaches, a more comprehensive understanding of the factors that support adolescent independence—and the best strat

The strength of this study lies in the use of a representative sample of the adolescent population in Makassar City, enabling the findings to be generalized more broadly. In addition, this study employs a quantitative approach that allows the analysis of the relationship between variables objectively. However, this study has several limitations. One of them is the cross-sectional design, which does not allow for causal inferences over time. Longitudinal studies are recommended to observe the development of adolescent independence over a longer period. In addition, the data obtained were based on self-reported questionnaires, which may introduce subjectivity or response bias. Further studies may consider using qualitative methods to explore more deeply adolescents' experiences related to their independence development.

CONCLUSIONS

This study demonstrates that adolescents' independence is influenced by various factors, especially social support, psychological stress levels, and self-efficacy. Strong social support from family and peers plays an important role in enhancing adolescents' independence, while high levels of stress are associated with lower levels of independence. High self-efficacy was also found to be a protective factor that supports adolescents' independence in the face of psychological challenges. The reinforcement of social support and self-efficacy should serve as a central component of school-based mental health curricula to prevent psychological harm among adolescents. School -based programs that integrate social support and stress management strategies may contribute to reductions in anxiety and depression. For rural areas, community-led initiatives leveraging local social networks (e.g., peer groups, religious institutions) could provide culturally responsive adaptations of these findings. In the context of public health, these findings confirm that enhancing adolescents' self-reliance can be one of the strategies for preventing psychological wounds and promoting mental resilience. Local and central governments are expected to develop policies that support mental health education programs in schools and strengthen the role of families in building an environment conducive to adolescent development. Educational institutions should incorporate more comprehensive counseling services and create supportive environments for adolescents to develop independence skills and manage stress. For future research, it is recommended to conduct longitudinal studies to understand the dynamics of the development of adolescent independence over time and to explore the influence of cultural factors and digital environments on adolescent mental health.

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AUTHORS' INFORMATION
Indra F. Ibnu and Grestin Sandy jointly designed the study, formulated the research concept, wrote the manuscript, enrolled participants, and were responsible for data acquisition and analysis. Both authors also reviewed and approved the final manuscript. Additionally, Indra F. Ibnu conducted the manuscript review and performed the field work

COMPETING INTERESTS
The authors confirm that all of the text, figures, and tables in the submitted manuscript work are original work created by the authors and that there are no competing professional, financial, or personal interests from other parties.

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