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School Connectedness and Mental Health in Vietnamese Secondary School Adolescents: The Mediating Role of Social-Emotional Competence

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Abstract

Background/problem: School connectedness is a critical factor influencing adolescent mental health. However, the mechanisms through which its multidimensional components, such as teacher support, peer support, social participation, and perceived safety, influence well-being in Vietnam remain underexplored.

Objective/purpose: This study examined the mechanism through which multidimensional school connectedness influences the mental health of Vietnamese adolescents.

Method: Drawing on a cross-sectional sample of 395 lower secondary students ($M_{age} = 12.3$, $SD = 1.05$) from public secondary schools in Vietnam, the study first validated the component structure of the school connectedness scale using principal component analysis (PCA) with Promax rotation. Mediation analyses were then conducted using the PROCESS macro to examine the role of social-emotional competence.

Results: The analysis identified a clear four-component structure of the scale, accounting for a substantial proportion of the variance (55.46%) and indicating good construct validity. Mediation analyses revealed that social-emotional competence significantly mediated the relationship between school connectedness and mental health. Specifically, the indirect effects were robust ($ab = -.16$ to $-.21$, 95% CI $[-.33, -.07]$), whereas several direct effects became non-significant after the mediator was included.

Conclusion and Implications: School connectedness may support adolescent mental health partly through the development of social-emotional competence. These findings highlight the importance of strengthening supportive school environments and implementing school-based social-emotional learning interventions to promote student mental health.

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Adolescence is widely regarded as a strategic developmental period characterized by rapid psychological and physiological changes, wherein individuals must navigate complex challenges such as academic demands and identity formation (Allen et al., 2016; Branje et al., 2021; Durlak et al., 2015). When these demands exceed adaptive capacities, the risk of mental health problems increases substantially. Globally, approximately one in seven adolescents experiences a mental disorder, with anxiety and depression being the most prevalent (UNICEF, 2021). Epidemiological research warns that untreated issues often persist into adulthood, underscoring the severe consequences of delayed intervention (Institute of Sociology et al., 2022; UNICEF, 2021).

In Vietnam, the urgency of this issue is particularly salient in the Mekong Delta region, where professional mental health infrastructure remains underdeveloped compared to major urban centers (Hirota et al., 2020; Tran et al., 2025). Consequently, the school environment has emerged as the critical frontline

for prevention (UNICEF, 2022). Despite growing evidence that school connectedness is beneficial for adolescent mental health, the mechanisms through which school-based support is translated into students' internal protective capacities remain insufficiently understood, particularly in Vietnamese school settings. Although school connectedness is recognized as a protective factor, most studies treat it as a unidimensional construct or focus solely on its direct association with mental health outcomes. This approach fails to disentangle the specific roles of distinct social agents, such as teachers and peers, and offers limited explanation of how external school-based support may be internalized as students' social-emotional competence (Dinh et al., 2021; Liu, 2026).

Addressing this theoretical gap, the present study draws on ecological systems theory (Bronfenbrenner, 1979) to propose an 'internalization mechanism' hypothesis. In this framework, school-based support is not viewed merely as an external buffer but as a developmental context that may foster students' internal strengths through the development of social-emotional competence. Accordingly, this study aims to: (1) assess the multidimensional levels of school connectedness and mental health risks; (2) examine their relationships; and (3) test the mediating role of social-emotional competence in the pathway from multidimensional school connectedness to mental health among Vietnamese adolescents, thereby moving beyond simple associations to provide an explanatory framework for effective intervention design.

Literature Review

This section synthesizes the theoretical and empirical evidence regarding the interplay between the school environment and adolescent mental health, utilizing ecological systems theory and social capital theory as the foundational frameworks. The review is organized into three primary domains: (1) the research context of mental health in the Vietnamese educational setting; (2) the conceptualization of social-emotional competence as an internal protective resource for well-being; and (3) the theoretical pathways from school support to inner strength, highlighting the mediating role of school connectedness in fostering adolescent resilience.

Research Context

This section outlines the developmental conditions making adolescent mental health a pressing concern and explains why school connectedness is relevant in Vietnam. Adolescence is a strategic developmental period characterized by rapid psychological and physiological changes (Durlak et al., 2015; Institute of Sociology et al., 2022). Adolescents must navigate multiple challenges, including academic demands and identity formation (Allen et al., 2016; Branje et al., 2021). When demands exceed adaptive capacities, mental health risks increase. Globally, approximately one in seven adolescents experiences a mental disorder, primarily anxiety and depression (UNICEF, 2021). Epidemiological research warns that untreated issues often persist into adulthood, with nearly half of adolescents expected to experience a mental disorder in their lifetime (Institute of Sociology et al., 2022). The consequences of delayed intervention are severe; notably, suicide remains the fourth leading cause of death among youth aged 15-19 years (UNICEF, 2021).

In Vietnam, recent reports document a considerable prevalence of adolescent mental health problems (Tran et al., 2025). This concern is especially pressing in the Mekong Delta, where professional mental health infrastructure remains underdeveloped and access to specialized support is still limited compared to major urban centers (Hirota et al., 2020). Such conditions underscore the importance of prevention and early support within settings that are familiar and accessible to adolescents, particularly schools (UNICEF, 2022). Beyond individual factors, the school environment-encompassing academic pressure, peer relationships, and teacher expectations-significantly shapes mental health (Liu, 2026). Within this context, school connectedness has emerged as a critical protective factor, enabling students to experience safety and belonging, thereby mitigating risks and fostering positive development (Allen et al., 2016; Dinh et al., 2021).

Social-Emotional Competence as an Internal Protective Resource for Mental Health

Social-emotional competence (SEC) is defined as a set of skills that enable individuals to recognize and regulate emotions, establish positive relationships, and make responsible decisions (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2020; Li et al., 2025). Within school contexts, SEC is a critical protective factor, contributing to reductions in internalizing problems such as anxiety and depression while promoting psychosocial adjustment (Greenberg, 2023; Lee & Wang, 2025; UNICEF, 2021). Specifically, SEC enhances emotional regulation, self-esteem, and resilience, while reducing externalizing behaviors like aggression (Dinh et al., 2021; Pranowo et al., 2026). Beyond individual outcomes, school-based initiatives fostering SEC have yielded positive effects on academic performance and behavioral adjustment (Greenberg, 2023; Lee & Wang, 2025).

However, most existing studies have primarily focused on direct associations between SEC and mental health, leaving the underlying psychosocial mechanisms insufficiently elucidated. Adolescence is a developmentally decisive period for SEC, closely linked to the task of identity formation and emotional regulation (Branje et al., 2021; Durlak et al., 2015). In this study, SEC is conceptualized as an individual-level capacity—an internal resource capable of mediating contextual effects. Yet, research has not fully clarified how school-based resources are internalized into individual competence to influence mental health, particularly in the Vietnamese context (Dinh et al., 2021; UNICEF, 2022). Accordingly, the present study proposes that SEC functions as a key internal mechanism through which school connectedness may influence adolescent mental health.

The Theoretical Pathways from School Support to Inner Strength: The Role of School Connectedness

The development of SEC is shaped by multiple contextual factors, with the school environment playing a pivotal role. From an ecological perspective, the school functions as a proximal microsystem where daily interactions with teachers and peers influence psychological adjustment (Allen et al., 2016; Bronfenbrenner, 1979). Beyond the psychological lens of ecological systems theory, this study incorporates Social Capital Theory (Coleman, 1988) to provide a more comprehensive, interdisciplinary understanding of school connectedness. From a sociological perspective, school connectedness represents a form of social capital - a network of trust-based relationships and shared norms within the school microsystem that facilitates the development of internal competencies. By integrating these two disciplines, the research framework captures both the individual's interaction with their environment and the structural resources available through social networks, aligning with the interdisciplinary aim of behavioral science.

Empirical studies indicate that positive connections with teachers and peers reduce loneliness and distress (Allen et al., 2024; UNICEF, 2021; UNICEF, 2022). Furthermore, school connectedness is positively associated with motivational, SEC, and academic outcomes (Lee & Wang, 2025; Raniti et al., 2022). Despite these known benefits, the specific contributions of different social agents within the school environment are often overlooked. For instance, teacher support typically provides structured developmental guidance and emotional security, whereas peer relationships uniquely shape identity formation and social belonging. However, much of the existing literature treats school connectedness as a unidimensional construct, failing to disentangle the distinct impacts of teacher support, peer support, and social engagement (Allen et al., 2016). Addressing this gap, the present study proposes an “internalization mechanism” hypothesis: school-based support resources are transformed into students' inner strength through the development of internal capacities. Accordingly, this study aims to: (1) assess levels of school connectedness, SEC, and mental health risks among Vietnamese adolescents in school settings; (2) examine their relationships; and (3) test the mediating role of SEC in the pathway from multidimensional school connectedness to mental health. This approach seeks to clarify how the school environment fosters internal resources to protect adolescent mental health.

Drawing on ecological systems theory (Bronfenbrenner, 1979) and social capital theory (Coleman, 1988), and building on empirical evidence that external support can foster internal skills that enhance well-being, the present study formulates three hypotheses for Vietnamese adolescents in school settings:

H1: Multidimensional school connectedness is positively associated with SEC.

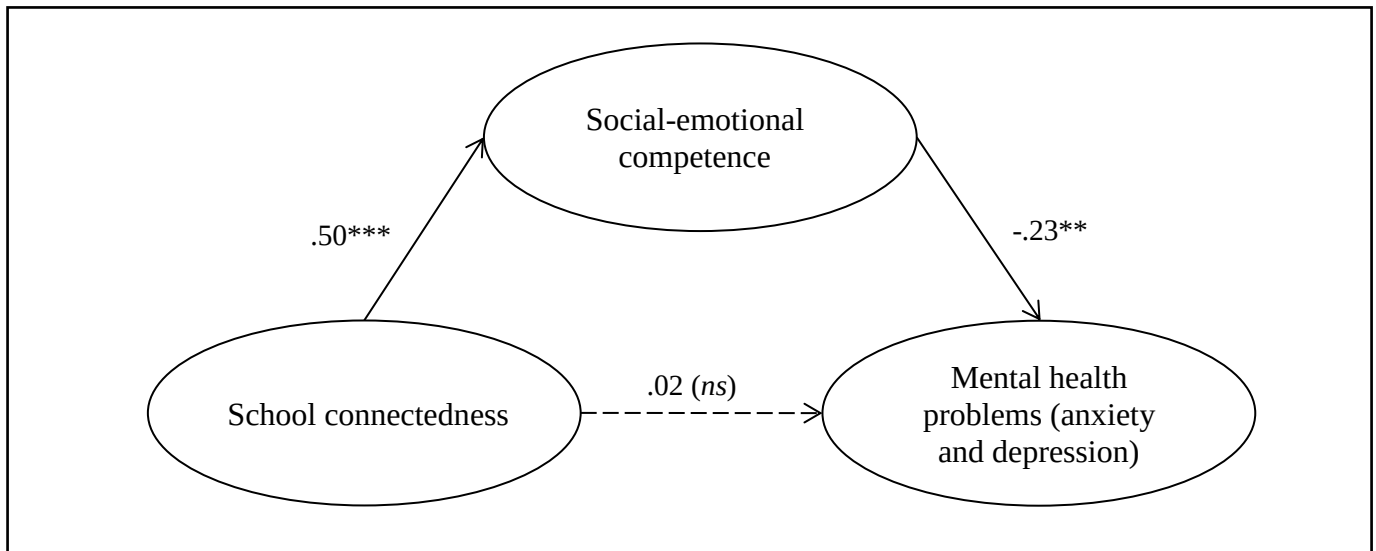
H2: SEC is negatively associated with mental health problems (anxiety and depression).

H3: SEC mediates the relationship between multidimensional school connectedness and mental health problems.

Figure 1 shows the structural model results, illustrating the standardized paths from school connectedness (independent variable) through social-emotional competence (mediator) to mental health problems (dependent variable).

Figure 1

Structural Model Results with Standardized Path Coefficients.



Note. Path values represent standardized coefficients (β), *** $p < .001$, ** $p < .01$, ns = non-significant.

Method

Research Design

This study employed a quantitative cross-sectional design to examine the relationships between school connectedness, social-emotional competence, and mental health problems among adolescents. Data were collected using a structured self-report survey, a method well-suited for assessing subjective psychological constructs within a school setting. While the observational nature of this design precludes causal inferences, it provides a robust framework for identifying statistical associations and testing the mediating role of social-emotional competence consistent with the study's theoretical objectives.

Participants

A multistage stratified sampling strategy was employed to recruit participants from six lower secondary schools in An Giang Province, Vietnam. This province was selected because it serves as a highly representative socioeconomic, cultural, and demographic baseline for the Mekong Delta, effectively reflecting the region's overall resident profile, economic structure, and geographic scale where adolescent mental health support remains limited compared to major urban centers (Tran et al., 2025). Based on Krejcie and Morgan's (1970) formula, a sample size of 395 students was selected using proportional allocation followed by simple random sampling within 31 classes.

Instruments

The research instruments were selected and developed to assess the core variables of the study, including social-emotional competence, school connectedness, and mental health problems (depression and anxiety). All instruments were self-report measures that had been previously standardized or examined for

internal consistency prior to their use in statistical analyses, and were appropriate for the quantitative research design. The measurement of variables was aligned with the study's theoretical framework, in which school connectedness was conceptualized as an external contextual resource, SEC as an internal mediating capacity, and mental health problems as the focal outcome.

Social-Emotional Competence

Social-emotional competence was assessed using the social emotional competence questionnaire (SECQ) developed by Zhou and Ee (2012) and adapted for Vietnam by Dinh et al. (2021). The scale comprises 25 items across five subscales (self-awareness, self-management, social awareness, relationship skills, responsible decision-making), rated on a six-point Likert scale. In the present study, the scale demonstrated excellent internal consistency for the total score ($\alpha = .89$) and acceptable to good reliability for subscales ($\alpha = .72$ to $.81$).

School Connectedness

A multidimensional scale was originally developed and administered in the Vietnamese language, theoretically grounded in Bronfenbrenner's ecological systems theory (1979). The scale items were constructed based on contextualized indicators to ensure high linguistic and cultural relevance for Vietnamese secondary school adolescents. The final 18-item scale assesses four dimensions: Social engagement (7 items), teacher support (5 items), sense of safety and belonging (4 items), and peer support (2 items). Responses are rated on a five-point Likert scale. Reliability analysis indicated good internal consistency for social engagement ($\alpha = .82$), Teacher Support ($\alpha = .76$), and Safety and Belonging ($\alpha = .76$). Although peer support yielded a lower alpha ($\alpha = .58$), this value is considered acceptable for subscales comprising a small number of items (Loewenthal, 2004; Taber, 2018), and the component demonstrated high theoretical relevance.

Mental Health Problems

Depression and anxiety were assessed using the Vietnamese versions of the patient health questionnaire-9 (PHQ-9; Kroenke et al., 2001; validated by Nguyen et al., 2024) and the generalized anxiety disorder-7 scale (GAD-7; Spitzer et al., 2006; validated by Nguyen et al., 2024). Both instruments use a four-point Likert scale ranging from 0 (not at all) to 3 (nearly every day), with higher scores indicating greater symptom severity (Nguyen et al., 2024; Spitzer et al., 2006). In the current study, internal consistency was satisfactory for both the PHQ-9 ($\alpha = .77$) and GAD-7 ($\alpha = .81$).

Procedure

The study was conducted in lower secondary schools in An Giang Province. Prior to data collection, the research team contacted school principals to introduce the study, obtain institutional permission, and coordinate the administration of the survey. After approval was granted, the schools were provided with the survey materials, participant information sheets, and consent forms for students and their parents or legal guardians. The researchers then coordinated with homeroom teachers to identify eligible students and introduce the study in class. During this stage, students were informed about the study purpose, procedures, voluntary nature of participation, potential risks, available support if they felt uncomfortable, and confidentiality safeguards. Information sheets and consent forms were subsequently sent home for review and signature. Only students who returned written assent together with written informed consent from their parents or legal guardians were included in the formal survey. On the day of data collection, the researchers briefly reiterated the purpose of the study, the confidential handling of responses, and the participants' right to decline participation or withdraw at any time without negative consequences before administering the questionnaires. All responses were coded, anonymized, and used solely for scientific research purposes.

Data Analysis

Data were analyzed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Harman's single-factor test was conducted on all study items to assess common method bias; the first unrotated component accounted for 19.80% of the total variance, suggesting that common method bias was unlikely to be a

serious concern. Subsequently, principal component analysis (PCA) with promax rotation ($\kappa = 4$) was employed to examine the component structure of the school connectedness scale. The PCA was selected as the extraction method based on the correlation matrix to identify the primary dimensions of the scale while maximizing the total variance explained (Hair et al., 2019; Lloret et al., 2017). Given that the dimensions of school connectedness are theoretically assumed to be correlated, a non-orthogonal promax rotation was applied to allow for inter-component correlations (Field, 2018). The PCA was used as an initial exploratory dimensionality technique; future studies are encouraged to confirm the latent structure using common factor analytic methods (e.g., principal axis factoring) and/or CFA.

Criteria for item retention included eigenvalues greater than 1.0, component loadings of .40 or higher, communalities of .30 or above (Hair et al., 2019), and the absence of substantial cross-loadings across components (e.g., $\Delta \geq .20$ between primary and secondary loadings). Internal consistency reliability of the scales was assessed using Cronbach's alpha (α).

Subsequently, separate mediation analyses were performed using the PROCESS macro version 4.2 (Model 4) developed by Hayes (2022) to examine the mediating role of SEC in the relationships between each dimension of school connectedness and mental health problems (depression and anxiety). Indirect effects were evaluated using bias-corrected bootstrap confidence intervals based on 5,000 resamples. Mediation effects were considered statistically significant when the 95% bootstrap confidence intervals did not include zero (Hayes, 2022).

Results

Sample Characteristics

The final sample included 395 lower secondary students aged 10 to 14 years ($M = 12.3$, $SD = 1.05$), with a balanced gender distribution (50.4% males, 49.6% females) and relatively even representation across grade levels. Grade 9 accounted for 26.6% of the sample, followed by grade 6 (24.8%), and grades 7 and 8 (24.3% each).

Component Structure of the School Connectedness Scale

The component structure of the school connectedness scale was examined using PCA. The data were suitable for factor analysis ($KMO = .90$; Bartlett's test: $\chi^2 = 2710.90$, $df = 171$, $p < .001$).

After removing two negatively worded items related to bullying during the scale development phase, the initial analysis was conducted on 19 items using PCA with promax rotation, assuming correlated factors. During this process, one item ("I receive support when I encounter difficulties in my studies or daily life") did not load substantially on any component (component loading $< .40$) and was therefore excluded from the scale.

The final PCA conducted on the remaining 18 items yielded a clear four-component structure, accounting for 55.46% of the total variance explained. All retained items loaded strongly (.50–.81). The detailed component structure is presented in Table 1.

Descriptive Statistics and Correlations

Table 2 presents the descriptive statistics and correlation coefficients among the study variables. The results indicated that all dimensions of school connectedness were positively and significantly correlated with SEC, with correlation coefficients ranging from .40 to .59 ($p < .01$). These findings suggest that higher levels of school connectedness are associated with higher levels of SEC among students.

In contrast, SEC was negatively and significantly correlated with both depression ($r = -.22$, $p < .01$) and anxiety ($r = -.27$, $p < .01$), indicating that students with higher levels of SEC tended to report lower levels of depressive and anxiety symptoms. In addition, depression and anxiety were strongly positively correlated ($r = .72$, $p < .01$), reflecting a high degree of co-occurrence between these two mental health symptoms.

domains within the study sample.

Table 1

Component Loadings of the School Connectedness Scale (n = 395)

Items (English Translation)	Component 1: Social participation and engagement	Component 2: Teacher support	Component 3: Perceived safety and belonging	Component 4: Peer support
I feel confident when participating in social activities at school.	.75			
I often participate in group activities, discussions, or collaborative work.	.67			
I can share my feelings and personal secrets with my friends.	.67			
I often take part in collective activities with my peers.	.66			
The school organizes activities that help me manage emotions and relationships.	.65			
I am taught how to resolve conflicts and communicate effectively.	.63			
The school encourages me to express my opinions and make appropriate decisions.	.50			
Teachers help me build confidence in myself.		.81		
Teachers encourage me to express myself and ask questions.		.71		
Teachers treat all students fairly.		.69		
I feel comfortable discussing personal issues with teachers.		.60		
Teachers listen to and care about my feelings.		.58		
I feel that I belong to my class and school.			.81	
I feel safe at school.			.79	
Teachers and peers respect my opinions.			.69	
School is a place where I can share my feelings.			.60	
I have at least one close friend at school.				.78
My friends are willing to help when I face difficulties.				.78
Eigenvalues	6.70	1.59	1.18	1.08
Variance explained (%)	35.25	8.34	6.19	5.68
Cronbach's alpha	.82	.76	.76	.58

Note. Extraction method: Principal component analysis. Rotation method: Promax with Kaiser normalization. Component loadings below .40 are suppressed.

Notably, the correlation between peer support and depression did not reach statistical significance ($r = -.08$, $p > .05$), whereas peer support was significantly and negatively correlated with anxiety ($r = -.12$, $p < .05$). This pattern suggests that the association between peer support and depressive symptoms may

not be direct, thereby raising the possibility of an indirect pathway, which was subsequently examined in the mediation analyses.

Table 2

Descriptive Statistics and Correlations among Study Variables (n = 395)

Variables	M	SD	1	2	3	4	5	6	7
1. SEC (Total)	3.50	.73	.89						
2. Social engagement	3.25	.73	.59**	.82					
3. Teacher support	3.46	.70	.51**	.59**	.76				
4. Safety & belonging	3.54	.75	.43**	.50**	.53**	.76			
5. Peer support	3.25	.99	.40**	.38**	.38**	.23**	.58		
6. Depression	1.36	.66	-.22**	-.11*	-.11*	-.12*	-.08	.77	
7. Anxiety	1.37	.74	-.23**	-.14**	-.17**	-.17**	-.11*	.72**	(.81)

Note. * $p < .05$, ** $p < .01$, Cronbach's alpha coefficients are presented in parentheses on the diagonal.

Mediation Analysis

The results of the mediation analyses are presented in Table 3 and reveal a consistent pattern of effects operating through SEC. Specifically, for social engagement, teacher support, and sense of safety and belonging, the direct effects on depression and anxiety were no longer statistically significant after SEC was included in the models, whereas all indirect effects via SEC were statistically significant, with the 95% confidence intervals for the indirect effects not including zero. These findings suggest that SEC serves as a full mediator in the relationships between key dimensions of school connectedness and students' mental health problems, as the direct effects became non-significant after including the mediator.

With respect to peer support, the total effect on depression did not reach statistical significance, whereas the indirect effect through SEC was significant. This pattern is indicative of an indirect-only mediation model, suggesting that peer support is associated with depressive symptoms only through its role in fostering students' SEC, rather than through a direct pathway.

Notably, across all mediation models, the indirect effects were negative in direction, indicating that higher levels of school connectedness were associated with higher levels of SEC, which in turn were associated with lower levels of depression and anxiety.

Table 3

Summary of Mediation Analysis: The Effects of School Connectedness Components on Mental Health via Social-Emotional Competence

Independent Variable (X)	Outcome (Y)	Total effect (c)	Direct effect (c')	Indirect effect (ab)	95% CI for indirect effect	Mediation Type
Social engagement	Depression	-.10*	.02	-.13	[-.20, -.06]	Full Mediation
	Anxiety	-.14**	.03	-.17	[-.22, -.10]	Full Mediation
Teacher support	Depression	-.11*	-.00	-.11	[-.17, -.05]	Full Mediation
	Anxiety	-.18***	-.05	-.14	[-.21, -.07]	Full Mediation
Safety & belonging	Depression	-.11*	-.03	-.08	[-.13, -.04]	Full Mediation
	Anxiety	-.17***	-.06	-.10	[-.17, -.05]	Full Mediation
Peer support	Depression	-.05	.01	-.06	[-.10, -.03]	Indirect-only
	Anxiety	-.08*	-.00	-.08	[-.12, -.05]	Full Mediation

Note. $N = 395$. Standardized coefficients (β) are reported. CI = Confidence Interval (Bootstrapped 5,000 samples). * $p < .05$, ** $p < .01$, *** $p < .001$. ^a Indirect-only mediation: The indirect effect is significant, but the total effect is not significant, indicating the variable only exerts influence through the mediator.

Supplementary analysis involving the overall school connectedness score confirmed the mediating role of SEC. Specifically, overall connectedness exerted a significant positive effect on SEC ($a = .81$, $p < .001$), which in turn negatively predicted both depression ($b = -.20$, $p < .001$) and anxiety ($b = -.26$, $p < .001$).

.001). The indirect effects were significant for both depression ($ab = -.16$, 95% CI $[-.26, -.066]$) and anxiety ($ab = -.21$, 95% CI $[-.33, -.094]$), indicating full mediation (data not tabulated).

Taken together, these findings indicate that the proposed model supports the mediating role of SEC in the relationship between overall school connectedness and mental health indicators in the study sample.

Discussion and Conclusion

This study examined the multidimensional structure of school connectedness and its associations with SEC and mental health problems among Vietnamese adolescents. Overall, the findings support the proposed model, indicating that school connectedness is multidimensional, positively associated with SEC, and linked to lower mental health problems both directly and indirectly through SEC. The discussion that follows is organized according to the study objectives and hypotheses.

The Multidimensional Nature of School Connectedness

The results of the exploratory component analysis indicated that the school connectedness scale comprises four distinct dimensions: (1) social participation and engagement, (2) teacher support, (3) sense of safety and belonging, and (4) peer support. This structure suggests that school connectedness among Vietnamese adolescents is not a unidimensional construct. It is a multidimensional phenomenon that simultaneously reflects social agents (teachers and peers), interactional processes (levels of social participation), and the psychological climate of the learning environment (safety and belonging) (Allen et al., 2016). Unlike previous studies that often conflate emotional belonging with behavioral participation, our findings delineate these as separate constructs (Raniti et al., 2022). This distinction is crucial in the Vietnamese educational context, where a student may feel safe and supported without necessarily being actively engaged in social activities.

From an ecological perspective (Bronfenbrenner, 1979), schools can be conceptualized as complex microsystems in which everyday relationships and experiences constitute proximal developmental conditions that are closely linked to adolescents' adaptation (Allen et al., 2016). The confirmation of this four-component structure provides empirical support for the ecological view within the cultural context of Vietnam, particularly in the Mekong Delta region. This theoretical alignment suggests that supportive interactions function as vital proximal processes that facilitate the development of social-emotional competence. Specifically, the school environment provides the relational "scaffolding" necessary for students to internalize external resources into personal strengths (Dinh et al., 2021; Liu, 2026). First, the clear separation of teacher support reflects the general Vietnamese tradition where teachers are highly respected and regarded as important adult guides who may play a quasi-parental role, making them distinct from friends. Second, the dimension of safety and belonging aligns with the specific lifestyle of the Mekong Delta, where the community is close-knit and the school is expected to be a safe, family-like environment that nurtures students' development (UNICEF, 2022).

The Mediating Role of Social-Emotional Competence

A key finding of the present study is the high degree of consistency observed in the mediation model involving SEC. Specifically, for three core dimensions of school connectedness, namely social participation and engagement, teacher support, and sense of safety and belonging, the direct effects on anxiety and depression were no longer statistically significant once SEC was included in the model, whereas all indirect effects via SEC remained significant.

These findings suggest that supportive resources within the school environment are not directly associated with students' mental health, but rather operate through SEC (Ryan & Deci, 2017; Valdés-Cuervo et al., 2025). This implies that simply increasing school resources may be insufficient unless those resources also foster students' SEC. Interpreting these findings through an interdisciplinary lens, the full mediation of SEC suggests that school connectedness functions as a primary form of social capital

(Coleman, 1988; Putnam, 2000). While Putnam (2000) originally conceptualized social capital within Western civic contexts, his distinction between “bonding” and “bridging” social capital provides a robust lens for examining the relational infrastructure of Vietnamese schools. In the collectivist educational setting of the Mekong Delta, school connectedness functions as a vital cultural asset, with bonding capital through peer support and bridging capital through teacher-student relationships collectively fostering students’ social-emotional resilience.

From a pedagogical perspective, these findings align with the principles of relational pedagogy, which posits that the quality of the teacher-student relationship is an important channel for student development. In the Vietnamese educational context, where teachers are traditionally viewed as moral guides, teacher support functions as a developmental scaffold (Vygotsky, 1978). This scaffolding enables students to develop social-emotional skills through daily modeling and guided interaction. Consequently, the mediation of SEC suggests that school connectedness is not merely a static feeling of belonging, but a relational school resource that may contribute to psychological resilience through SEC. This interpretation emphasizes the importance of school-wide approaches that move beyond isolated psychological interventions toward integrated pedagogical approaches that prioritize social-emotional learning within the formal curriculum. In this sense, external supports may be transformed into internal strength, specifically SEC.

From this perspective, components of the school environment function as developmental scaffolding (Eccles & Roeser, 2011). Accordingly, a school environment that encourages active participation, provides supportive teacher relationships, and fosters a sense of safety and belonging creates favorable conditions for students to develop key competencies such as emotional awareness, regulation, and responsible decision-making (Greenberg, 2023; Jennings & Greenberg, 2009). These competencies serve as internal protective resources linked to lower levels of anxiety and depression (Lee & Wang, 2025; UNICEF, 2022). This interpretation suggests that effective school-based interventions in Vietnam should not be limited to increasing perceived support alone, but should also emphasize the transformation of such support into students’ enduring inner strength (Dinh et al., 2021).

Interpreting Findings Related to Peer Support

Findings related to peer support revealed a distinct pattern compared to other dimensions. First, the internal consistency reliability of this component was relatively lower ($\alpha = .58$), a result that is acceptable for subscales comprising a limited number of items (Loewenthal, 2004; Taber, 2018). However, the items loading on this component demonstrated high component loadings ($>.70$), indicating satisfactory content convergence and providing psychometric justification for retaining this component in subsequent analyses.

Critically, the mediation analyses indicated an indirect-only mediation pattern for the association between peer support and depression. Specifically, peer support was not directly associated with depressive symptoms, but exerted a significant indirect effect through SEC. This finding likely reflects the inherent complexity of peer interactions during adolescence, where peers serve simultaneously as sources of risk and protection (Bronfenbrenner, 1979; UNICEF, 2021). Unlike support from adults such as teachers, which is often structured and explicitly protective (Allen et al., 2016; UNICEF, 2022), peer relationships may simultaneously encompass both supportive elements and challenging experiences, including competition, social comparison, and pressures related to peer conformity (Bonfanti et al., 2025; UNICEF, 2021). Consequently, merely having close friends or receiving instrumental help may be insufficient to confer protection against depression if such interactions do not contribute to the development of social-emotional skills (Branje et al., 2021; Greenberg, 2023). In contrast, when peer relationships serve as contexts in which adolescents actively develop competencies such as empathy and emotional regulation, peer support acquires a protective function (UNICEF, 2022). These findings suggest that peer support is not uniformly beneficial in itself; rather, its implications for mental health depend on the extent to which peer interactions facilitate the development of SEC.

Limitations

Despite its contributions, this study is subject to several limitations that warrant consideration when interpreting the findings. First, the cross-sectional design precludes the ability to draw causal inferences; therefore, the tested mediation models reflect statistical associations rather than temporal causality. Second, the sample was recruited exclusively from An Giang Province, which may limit the generalizability of the findings to adolescents in major urban centers or other cultural regions of Vietnam. Third, the reliance on self-report measures renders the data susceptible to social desirability and recall bias common in adolescent populations. Finally, regarding psychometric properties, the peer support subscale consisted of only two items and showed relatively low reliability ($\alpha = .58$), although this value may still be acceptable for short scales (Loewenthal, 2004; Taber, 2018). Future studies should consider expanding this construct to enhance its stability and measurement robustness. In addition, because the scale structure was explored using PCA, future research should replicate the measurement model using common-factor EFA (e.g., PAF) and/or CFA to confirm the latent factor structure (Lloret et al., 2017).

Implications for Behavioral Science

From a theoretical perspective, this study advances the understanding of adolescent mental health in non-Western contexts by validating the multidimensionality of school connectedness. Unlike traditional approaches that view school support as a monolithic construct, our findings confirm that distinct components, namely teacher support, peer support, social participation, and safety, operate through specific pathways. Crucially, by identifying SEC as a full mediator, this research enriches ecological systems theory, suggesting that the school microsystem may protect mental health not merely through direct buffering, but also through fostering the development of students' social-emotional competence (Bronfenbrenner, 1979; Eccles & Roeser, 2011). In this sense, the findings offer evidence consistent with an internalization process through which external support may be transformed into SEC (Dinh et al., 2021; Jennings & Greenberg, 2009).

Regarding practical applications and educational policy, the findings suggest that interventions aimed at enhancing school engagement should not be approached through the application of a uniform, "one-size-fits-all" model. Instead, greater emphasis should be placed on facilitating the development of SEC, through which external support is translated into students' communication, emotion regulation, and responsible decision-making skills (Greenberg, 2023; Jennings & Greenberg, 2009). Within the Vietnamese school context, this implies distinct strategies: (1) Social participation should be designed not just for fun, but as opportunities for students to practice communication and emotion regulation skills; (2) Teacher support should move beyond immediate emotional comfort toward a capacity-building process, guiding students to solve problems independently, and (3) A psychologically safe climate serves as the foundational condition, enabling students to experiment and sustain these new skills in their everyday learning environment.

Future research in behavioral science should extend these findings by employing longitudinal designs to rigorously test the causal direction of the proposed SEC-mediated process over time. Additionally, researchers are encouraged to replicate this model across diverse cultural settings to determine whether the mediating role of SEC remains consistent, thereby enhancing the generalizability of this framework in global mental health strategies.

Conclusion

This study highlights the multidimensional nature of school connectedness among Vietnamese adolescents, comprising social participation, teacher support, sense of safety and belonging, and peer support. Crucially, the results confirm that while these external supportive resources are foundational, they do not directly reduce anxiety and depression but operate primarily by fostering students' SEC. This suggests a necessary shift in perspective for school-based mental health interventions in Vietnam: moving beyond the mere provision of support to the active cultivation of students' inner strength. Specifically, schools should function as developmental scaffolds where teacher care, peer interactions, and a safe environment are transformed into students' internal capacities to regulate emotions and solve problems.

Ultimately, the transition from school support to SEC suggests a potentially sustainable pathway for protecting adolescent mental health in the face of developmental challenges.

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Declarations

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Ethical Approval Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Review Board of the University of Social Sciences and Humanities, Viet Nam National University Ho Chi Minh City (Approval No. 33-2025; date of approval: 30 August 2025).

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