

The Role of Sports, Peer Support, and Teacher Involvement in Bullying: A Quantitative Study from the Teachers' Perspective

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Abstract: The Role of Sports, Peer Support, and Teacher Involvement in Bullying: A Quantitative Study from the Teachers' Perspective. Objectives: The research aims to analyze teachers' perceptions of the direct effects of sports activities, colleagues' support, and their role in bullying behavior; to explore the mediating role of mental health; and to examine the moderating effect of self-regulation from the teachers' perspective. **Methods:** A quantitative method involving Structural Equation Modeling with Partial Least Squares (SEM-PLS) was employed. The sample consisted of 250 sixth-grade elementary school teachers in the Rampah District. The data were collected using a 5-point Likert scale structured questionnaire that assessed teachers' perceptions of student bullying behavior, mental health, peer support, and self-regulation. The data were then processed to evaluate the measurement model and the structural model. **Findings:** This study revealed that teachers regarded sports activities and their role as the primary direct factors influencing the reduction of bullying. The study results indicated that the proposed direct influence of peer support on bullying (H2) was not confirmed ($\hat{\alpha} = -0,021$, $p = 0,312$). Rather, the teachers viewed peer support as a significant indirect influence, leading to a notable improvement in students' mental health ($\hat{\alpha} = 0.494$, $p < 0.001$), which in turn contributed to a decrease in bullying behavior. The teachers' perceptions suggested that mental health was a significant mediator in the relationship between the protective school factors and bullying behavior. Moreover, according to teachers' assessments, self-regulation had a moderating effect and was instrumental in elevating the impact of mental health on bullying abatement. The model accounts for 37.7% of the variance in teachers' perceptions of mental health and 50.8% of the variance in bullying behavior, with a predictive relevance (Q^2) of 0.694, indicating strong explanatory power. **Conclusion:** The findings confirm that preventing bullying in schools requires a comprehensive strategy that incorporates physical activities, peer relationships, teacher participation, and mental health promotion, facilitated by self-regulation training. This research contributes to the current conceptual models of bullying prevention from the perspective of teachers, providing practical advice for creating a safer and more supportive educational setting grounded in educators' viewpoints.

Keywords: bullying, sports activities, peer support, teacher's role, mental health, self-regulation.

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■ INTRODUCTION

Bullying is among the most serious problems often arising in school settings, particularly those relating to elementary education. While most

research approaches bullying mainly from students' perspectives, how teachers also perceive and interpret bullying is another critical, although relatively less studied, factor in

understanding and dealing with the phenomenon. Teachers' understanding of bullying dynamics significantly influences their intervention decisions and, consequently, the school climate regarding bullying considerations.

It can be seen that teachers' perceptions of bullying have a significant impact on their responsiveness to incidents, as well as on the overall effectiveness of anti-bullying interventions (Yoon & Bauman, 2014). There indeed exists a big difference between how teachers and students perceive the same situations of bullying, with the former often considering bullying as having a lower occurrence and a lesser severity (Bradshaw et al., 2013). Because of this perceptual gap, it is vital to understand the factors influencing classroom assessments by teachers in terms of classroom protection factors against bullying.

In the context of Indonesian education, where culture worsens hierarchical teacher-student relations, perceptions of bullying teachers become frankly necessary. Studies conducted previously gave much emphasis to the fact that students were the sole sources of reporting on bullying in schools, ignoring the role that teachers had as the main observers and interveners in this complicated social dynamic. It adheres to a unified ecological model, recognizing bullying more as a phenomenon affected by several interacting factors. However, in contrast to past studies that examined these factors through student reports, we are examining them through a teacher's perceptual lens. Teachers' perceptions of the protective roles of sporting activities, peer support, and their own involvement in halting bullying are assessed, alongside their perceptions of students' mental health and self-regulatory capacities.

The theoretical position of the variable remains in line with installed contours: Belize (2006), Sports activities based on psychosocial development model, social support principle with colleagues' support drawing (Malki & Damre,

2003), and the teacher's role was in accordance with social teaching theory (Yun, 2014). However, innovation lies in examining these conditions through conceptual frameworks for teachers, rather than relying on direct behavioral measures.

This study suggests that teachers can inform students about these protective factors through their assessment of mental health, which serves as a mechanism for addressing their perception of a lack of bullying. Additionally, we examine how the conditions for students' self-regulation skills mediate this relationship, which may influence their understanding of the effectiveness of different intervention strategies.

The research gap addressed here is addressed in two ways: first, limited attention is given to the conceptual processes that teachers use to understand the dynamics of bullying. Secondly, there is a need to validate the extensive model for preventing bullying through the lens of those responsible for implementing the intervention. Previous studies have mainly focused on direct relationships between the variables from the student's point of view, while the conceptual mechanisms that teachers interpret these conditions remain indefinite.

Based on this structure, the purpose of this study is: (1) analyze teachers' perceptions about the direct effects of sports activities, colleague's support and their role in bullying behavior; (2) Determine how to assess Mental Health Media these conditions; and (3) Examining how teachers' prerequisites about the self-regulations students convey the relationship between mental health attachment in their observation structure.

Conclusions are expected to provide significant insight into teachers' conceptual models, making theoretical contributions to educational psychology and offering practical guidance on developing teacher-sensitive anti-sensitivity strategies that align with the contours and intervention preferences of teachers.

METHOD

Research Design and Procedures

This study employed a quantitative approach, utilizing structural equation modeling with the least squares method. SEM-PLS was chosen as it is suitable for analyzing the complex causal relationships between latent variables, including mediation and moderation effects. It is strong for the data that cannot follow a general distribution (Life, 2024).

The purpose of this study is to investigate how various factors in the school environment

influence the behavior of bullying among students. The ideological model below illustrates the relationship between sports activities, colleagues' support, and the teacher's role in bullying, both directly and indirectly as a mediated variable (Ahmed, 2020) through the lens of mental health. In addition, self-regulation acts as a modeling factor that can strengthen or weaken the effect of mental health on bullying. This structure provides the basis for data analysis using the SEM-PLS method and serves as the primary reference for verifying the ratio of these structures.

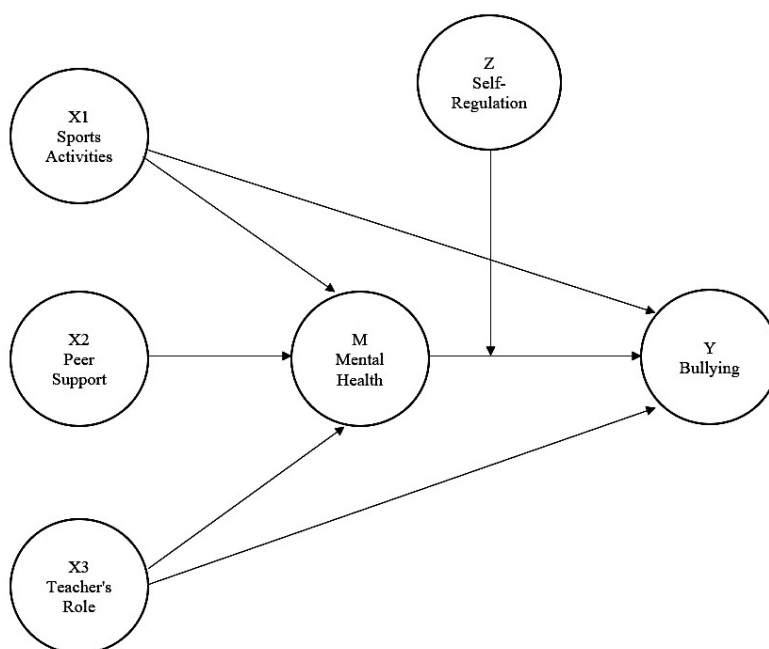


Figure 1. Conceptual framework

Based on the conceptual version inside the photograph, the following are initial hypotheses that may be formulated:

- H1: Sports (X1) have an immediate, terrible impact on bullying behavior (Y).
- H2: Peer assistance (X2) has an immediate negative effect on bullying behavior (Y).
- H3: Teacher's function (X3) has a right away negative impact on bullying behavior (Y).
- H4: Sports activities (X1), peer support (X2), and the trainer's role (X3) respectively have a fine impact on mental health (M).

H5: Mental fitness (M) has a terrible impact on bullying conduct (Y) and acts as a mediator between sports, peer guide, instructors' function, and bullying.

H6: Self-regulation (Z) moderates the impact of intellectual fitness (M) on bullying (Y), strengthening or weakening this coupling.

Based on the conceptual model in the image, the following initial hypotheses can be prepared:

- H1: Sports activities (X1) have a direct negative effect on bullying behavior (Y).

- H2: Peer Support (X2) has a direct negative effect on bullying behavior (Y).
- H3: The role of a teacher (X3) has a direct negative effect on bullying behavior (Y).
- H4: Sports activities (X1), Colleague Support (X2), and the teacher's role (X3) have a positive effect on Mental Health (M), respectively.
- H5: Mental Health (M) has a negative effect on bullying behavior (Y) and acts as a mediator between sports activities, colleagues' support, teachers, and bullying.
- H6: Self-regulation (Z) moderates the effect of mental health (M) on bullying (Y), strengthening or weakening this relationship.

Population and Sample

The population of this study consisted of all sixth-grade elementary school teachers working in the Rampah District. Given the limited and well-defined nature of the population, a census/saturated sampling technique was employed, meaning all members of the population were invited to participate. From the total population, 250 teachers agreed to participate and completed the questionnaire in full.

Research Instrument

The data was collected using a structured questionnaire with a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Data were

collected using a structured questionnaire with a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). All indicators for each latent variable were adapted from previously validated scales and modified to fit the elementary school context. The original scales, along with sample items and their sources, are detailed in Table 1. Content validity was confirmed through expert judgment by three academic experts in the field of educational psychology. A pilot test involving 30 respondents was conducted to ensure reliability, resulting in Cronbach's Alpha values exceeding 0.70 for all constructs (Shahzad, 2021). The validity of the equipment's content was confirmed through expert decisions, and a pilot test with 30 respondents was conducted to ensure reliability (Cronbach's alpha > 0.70) (Vasconcelos, 2020).

The adaptation process involved two key modifications: (1) changing the perspective from first-person student experience to third-person teacher observation (e.g., "My friends help me" became "Students in my class help each other"), and (2) focusing on observable behaviors rather than internal states where appropriate. This approach is supported by studies showing that teachers can reliably report on observable student behaviors and social interactions, with moderate to strong correlations between teacher and student reports of bullying-related behaviors (Cook, Williams, Guerra, & Kim, 2010; Leff, Kupersmidt, Patterson, & Power, 1999).

Table 1. Research instrument

No.	Variable	Original Scale Source	Original Scale Name	Sample Original Item	Adapted Item Example (Teacher's Perspective)	Number of Items
1	Sports Activities (X1)	Bailey (2006)	Physical Activity and Social Development Scale	"Students participate in regular physical activities."	"Students in my class actively participate in organized sports activities during school hours."	4
2	Peer Support (X2)	Malecki & Demaray (2003)	Child and Adolescent Social	"My friends help me when I have a	"Students in my class help each other when they face	5

			Support Scale (CASSS)	problem."	difficulties."	
3	Teacher's Role (X3)	Yoon (2014)	Teacher Involvement in Bullying Prevention Scale	"I consistently intervene when I see bullying behavior."	"I actively intervene when I observe bullying incidents among students in my class."	5
4	Mental Health (M)	Goodman (2001)	Strengths and Difficulties Questionnaire (SDQ)	"The child is often unhappy, depressed, or tearful." (Reverse- coded)	"Most students in my class demonstrate positive emotional well-being and happiness."	4
5	Self- Regulation (Z)	Tangney et al. (2004)	Brief Self- Control Scale	"I am good at resisting temptation."	"Students in my class can control their impulses during stressful situations."	4
6	Bullying Behavior (Y)	Olweus (1996)	Olweus Bullying Questionnaire	"How often have you been bullied at school in the past couple of months?"	"In my class, some students are frequently subjected to bullying by their peers." (Reverse- coded)	5

Data Analysis Technique

Data analysis was conducted in two primary stages using Structural Equation Modeling with Partial Least Squares (SEM-PLS). First, the measurement model (outer model) was evaluated by assessing convergent validity through factor loadings (> 0.70) and average variance extracted (AVE > 0.50), discriminant validity using the Heterotrait-Monotrait Ratio (HTMT < 0.90), and construct reliability via composite reliability (> 0.70). Subsequently, the structural model (inner model) was examined by testing for multicollinearity (VIF < 5), evaluating the model's explanatory power through the coefficient of determination (R^2), measuring predictive relevance (Q^2), and performing hypothesis testing via a bootstrapping procedure with 5,000 resamples at a significance level of $p < 0.05$.

■ RESULT AND DISCUSSION

Result

The data analysis using Structural Equation Modeling-Partial Least Squares (SEM-PLS)

illustrates the relationships among the variables under study, namely sports activities (X1), peer support (X2), teacher's role (X3), mental health (M), self-regulation (Z), and bullying behavior (Y). The structural model provides information on the strength of the relationships (path coefficients) between variables, the reliability of the indicators, as well as the contribution of independent variables to the dependent variable through the R^2 values. Visually, the results of the SEM-PLS algorithm estimation are presented in Figure 1, which displays both direct and indirect relationships among the research variables, along with their corresponding path coefficients.

Overall, the results of the SEM-PLS algorithm show that sports activities, peer support, and the role of teachers contribute positively to students' mental health, which in turn reduces bullying behavior.

Measurement Model (Outer Model) Evaluation

Tests of construct reliability and validity were conducted to evaluate the measurement model.

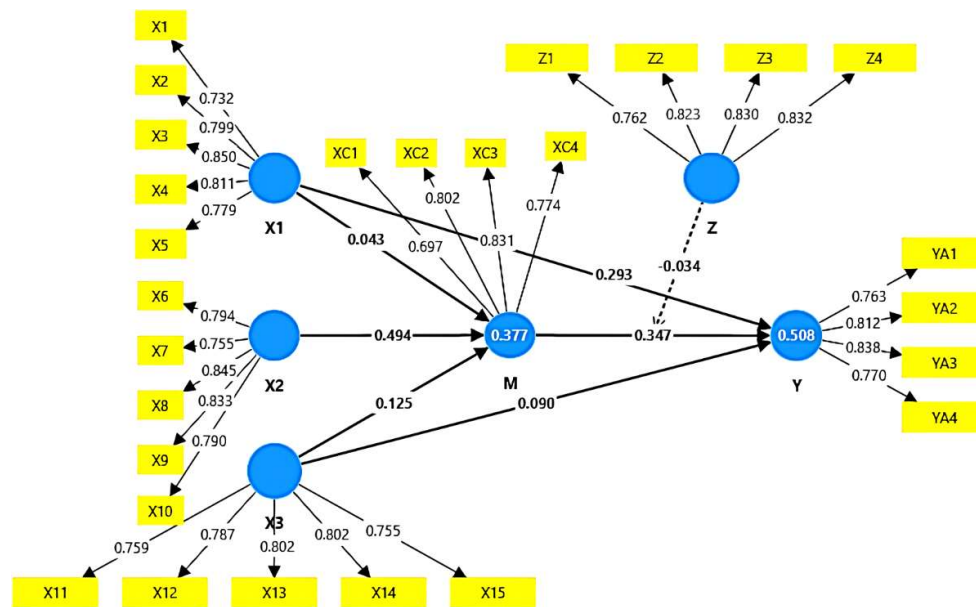


Figure 2. SEM algorithm results

The reliability was investigated using Cronbach's alpha and composite reliability (CR), while convergence validity was evaluated using average

variance extracted (AVE). According to Hair et al. (2019), the results are presented in Table 2.

Table 2. Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
M	0.780	0.781	0.859	0.605
X1	0.854	0.861	0.895	0.632
X2	0.863	0.870	0.901	0.646
X3	0.844	0.861	0.887	0.610
Y	0.807	0.808	0.874	0.634
Z	0.829	0.837	0.886	0.660

In Table 2, all constructs of the study are very reliable and valid. For all constructs, the value of Cronbach's Alpha is between 0.780 and 0.863, which is not less than 0.7. Thus, the above amount indicates internal consistency among each of the indicators. This also indicates that the value range of the Composite Reliability (rho_c) varies between 0.859 and 0.901, further ensuring the reliability of the constructs (Cheung, 2024; Hayes, 2020).

All the AVE Values are greater than 0.50 (0.605 to 0.660), proving that, by each construct, the variance explained for every indicator is more

than 50 percent. Confirming that the measurement model is quite reliable and convergent-valid makes this study appropriate for further structural analysis (Ahmad, 2021). Convergent validity in a few numbers indicates that the results have been tested in conjunction with the convergent validity tests conducted thus far.

Thus checked further for the last prong of validity, namely discriminant. Discriminant validity proves that a construct is different from other constructs or entities. Discriminant validity refers to the extent to which a construct accurately

measures what it was intended to measure, rather than something else (Cheung, 2024; Roemer, 2021). The Heterotrait-Monotrait Ratio of Correlations (HTMT) and Fornell-Larcker criterion are typically used, with values below 0.90 indicating adequate discriminant validity

(Henseler, Ringle, & Sarstedt, 2015). Table 3 shows the discriminant validity results for the constructs.

According to Table 3, the correlation value between the structures is less than the square root of AVE for each construction, indicating that the

Table 3. Discriminant validity

	M	X1	X2	X3	Y	Z
M						
X1	0.561833					
X2	0.730889	0.796661				
X3	0.549915	0.707036	0.727624			
Y	0.750702	0.714615	0.739268	0.586858		
Z	0.549359	0.697764	0.650989	0.556813	0.630358	
Z x M	0.13235	0.092183	0.159455	0.044326	0.140611	0.104057

discriminatory validity criteria are met. For example, the ratio of mental health (M) to peers (x2) is 0.731, which is above the square root of AVE for each construction (> 0.80). Similar results are obtained in all constructions, confirming that each variable is distinct. In addition, the concept of interaction ($z \times m$) exhibits relatively low correlation values with other structures, ensuring that multiculturalism is not a concern (Al-Swidi, Gelaidan, & Saleh, 2021; Marsh, 2020; Ruggeri, 2020; Singh, 2020). These conclusions suggest that structures vary empirically and can be used well in later structural model analysis.

From Figure 1 (SEM Algorithm Results), it can be seen that all indicator loadings are above the recommended threshold of 0.70 (Hair et al., 2019), ranging from 0.73 to 0.85. This demonstrates that each indicator contributes significantly to explaining its respective latent construct, indicating good indicator reliability (Úbeda-García, Claver-Cortés, & ..., 2021).

The outcomes presented in Table 1 (Construct reliability and validity) substantiate the above finding. While Cronbach’s Alpha values range from 0.780 (M) to 0.863 (X2), these values exceed the minimum standard of 0.70. This thus

implies all constructs have acceptable internal consistency. Composite Reliability (ρ_c) values range between 0.859 and 0.901. All these values exceed the critical threshold of 0.70, proving strong constructive reliability. Thirdly, rather, Average Variance Extracted (AVE) values range between 0.605 and 0.660 for all constructs; all exceed the cut-off value of 0.50. This indicates that more than 50% of the variance in each construct’s indicators is explained by the underlying latent variable, demonstrating adequate convergent validity (Dzhambov, 2021; Hou, 2020).

The table for evaluation of the discriminant validity is Table 3. The lower correlation values between constructs and the square root of AVE for each construct demonstrate evidence of discriminant validity. Under this, the correlation between peer support (X2) and mental health (M) has been cited as 0.731, which is lower than the respective square root of AVE values, which are greater than 0.80. Such consistent patterns across the other covariates shall ensue.

Structural Model (Inner Model) Evaluation

To assess the significance of the hypothesized relationships, we applied a

bootstrapping procedure with 5,000 resamples. Bootstrapping provides fairly reliable estimates of the standard errors while evaluating coefficient paths, t-statistics, and p-values to determine

whether the hypotheses are supported or not. The results of the bootstrapping analysis are presented in Figure 3, which illustrates the significance levels paths between constructs in the research model.

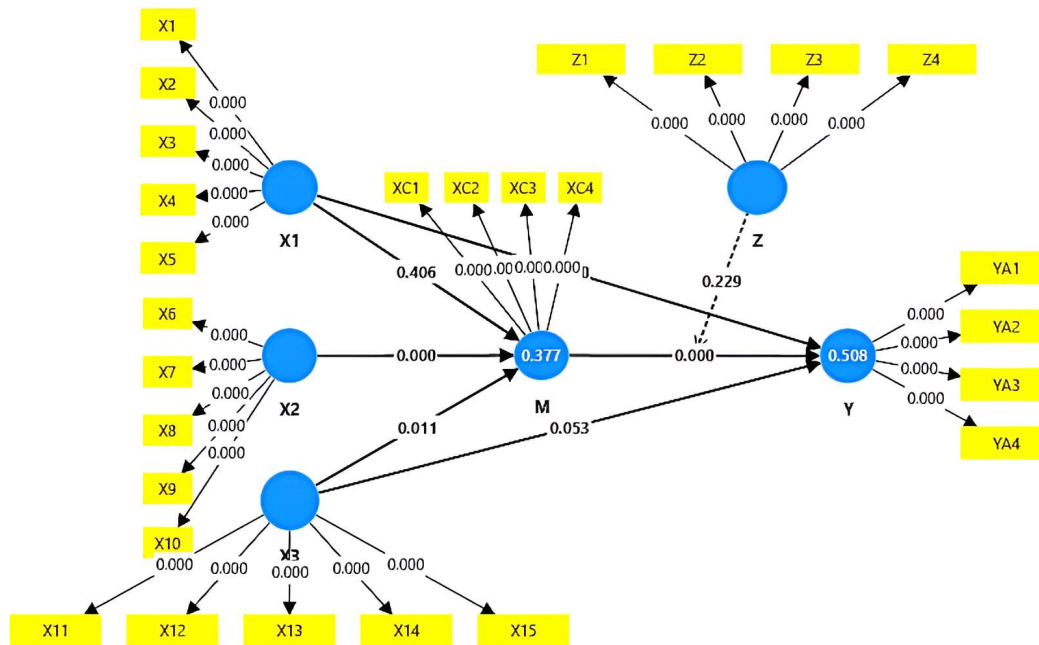


Figure 3. Bootstrapping results

The bootstrapping findings support the idea that several paths hypothesized in the model are statistically significant. Sports activities (X1), peer support (X2), and the role of the teacher (X3) have a strong, positive impact on mental health (M), which in turn significantly reduces bullying behavior (Y).

Once it was ensured that the measurement model satisfied all the reliability and validity criteria, the structural model (inner model) was tested. The purpose of the stage is to determine how constructs relate to each other, the extent to which the model explains, predicts, and whether each of the hypothesized relationships is significant (Kusmiasari et al., 2024). The analysis involves multicollinearity tests (VIF) (Sukendro, 2020), coefficient of determination (R^2), and predictive relevance (Q^2), as well as hypothesis testing using path coefficients. The findings have been summarized in Tables 4 to 5.

Table 4. Multicollinearity test

	VIF
X1	1.617
X10	1.767
X11	1.468
X12	1.817
X13	1.842
X14	2.141
X15	2.016
X2	1.909
X3	2.364
X4	2.146
X5	1.621
X6	1.908
X7	1.700
X8	2.252
X9	2.024
XC1	1.294
XC2	1.681
XC3	1.837
XC4	1.563
YA1	1.547

YA2	1.714
YA3	1.924
YA4	1.617
Z1	1.639
Z2	1.805
Z3	1.837
Z4	1.798
Z x M	1.000

Multicollinearity was assessed using the variance inflation factors (VIF) values. According to Hair et al. (2019), VIF values below 5 indicate that multicollinearity is not a concern. As shown in Table 3, all indicators range from 1,294 to 2,364, below the threshold of 5. This result indicates that the independent variables in the

model are free of multicollinearity problems and can be used confidently in structural analysis.

The coefficient of determination (R^2) measures the model's explanatory power with respect to endogenous variables. As presented in Table 4, the R^2 value (m) for mental health is 0.377, indicating that 37.7% of the variance in mental health can be explained by sports activities, colleague support, and the teacher's role (Rambe & Daulay, 2024). Meanwhile, the Rachau value for bullying (Y) is 0.508, indicating that 50.8% of the variance is explained by combining external variables (X1, X2, X3), medium variables (M), and moderated variables (Z). These values are below moderate to enough limit, which indicates that the model has sufficient explanatory power.

Table 5. Coefficient of determination

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
M	0.377	0.384	0.049	7.637	0.000
Y	0.508	0.517	0.036	14.078	0.000

Predictive Relevance (Q^2)

$Q^2 = 1 - (1 - 0.377)(1 - 0.508)$
 $Q^2 = 1 - (0.623)(0.492)$
 $Q^2 = 1 - 0.306$
 $Q^2 = 0.694$

yielded a Q^2 value of 0.694, exceeding the recommended threshold of 0.35. This result demonstrates that the model has a strong predictive relevance, meaning that it is capable of accurately predicting the variance in the endogenous constructs. The results of the hypothesis testing, presented through the path coefficients, are shown in Table 6. Several important findings can be highlighted:

In addition to its explanatory power, the model's forecast relevance was evaluated using the Stone-Geary Q-K test. The calculation

Table 6. Path coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics (O/STDEV)	P values
M -> Y	0.347	0.345	0.049	7.103	0.000
X1 -> M	0.043	0.046	0.052	2.832	0.006
X1 -> Y	0.293	0.293	0.060	4.875	0.000
X2 -> M	0.494	0.493	0.063	7.870	0.000
X3 -> M	0.125	0.125	0.049	2.537	0.011
X3 -> Y	0.090	0.093	0.046	2.934	0.003
Z -> Y	0.145	0.144	0.049	2.965	0.003
Z x M -> Y	0.034	0.034	0.028	3.204	0.029

The structural model analysis revealed several important findings regarding the hypothesized relationships among the constructs. Mental health (M) was found to have a significant negative effect on bullying behavior ($\hat{\alpha} = 0.347$, $p < 0.001$), confirming its role as a mediating variable in the model. Sports activities (X1) showed a significant positive effect on mental health ($\hat{\alpha} = 0.043$, $p = 0.006$) and had a direct, significant effect on reducing bullying behavior ($\hat{\alpha} = 0.293$, $p < 0.001$). Peer Support (X2) demonstrated the strongest impact on mental health ($\hat{\alpha} = 0.494$, $p < 0.001$), and emphasized the important role of the students' psychological conditions to increase students' psychological welfare (Wahyuningtyas & Wijaya, 2023). Similarly, the teacher's role (x3) contributed significantly to mental health ($\hat{\alpha} = 0.125$, $p = 0.011$) and the reduction of bullying ($\hat{\alpha} = 0.090$, $p = 0.003$), as well as to the support of vulnerable teachers by other teachers. In addition, self-regulation (Z) had a significant effect in reducing bullying ($\hat{\alpha} = 0.145$, $p = 0.003$), and the interaction effect ($z \times m$) was also important ($\hat{\alpha} = 0.034$, $p = 0.029$), confirming that self-regulation controls the relationship between mental health and threats. These results indicate that sports engagement promotes colleague support and increases teachers' participation, combined with self-regulations, can better help students effectively reduce bullying through mental health.

The results of this study provide considerable insight into the roles of sports activities, colleagues' support, teacher participation, mental health, and self-regulation in reducing bullying behavior among primary school pupils. Each hypothesis was tested using SEM-PLS, and the findings are discussed below.

H1 posited that sports activities (X1) have a direct negative effect on bullying behavior (Y).

The findings from this study suggest that participation in sports has a direct effect on

bullying. Increasingly, ordinary students are engaging in physical activities, which is expected to reduce the trend of bullying. This result is consistent with recent studies showing that physical activity enhances emotional competence, including emotional regulation and teamwork, which in turn reduces invasive rocking (Rusilo-Magdaleno et al., 2024) in the long term. Research among students has also found that participation in sports activities is positively correlated with emotional intelligence and pride, both of which protect against involvement in bullying, whether as perpetrators or victims (Romero-Blanc et al., 2022). A current pest assessment supports this discovery by indicating a potential for poor union and bullying, although the impact on criminals was relatively weak (Zhang et al., 2024). School-based intervention research has also reported stable results, where installed physical activity packages have effectively reduced the risk of physical and verbal bullying while achieving more substantial social outcomes in schoolrooms (Lopez-Gil et al., 2019). Therefore, sports activities are no longer the primary means of achieving physical fitness. However, students also play a crucial role in promoting social welfare, making them a powerful preventive strategy to limit the occurrence of bullying in colleges.

H2 stated that peer support (X2) has a direct negative effect on bullying behavior (Y).

Although H2 envisioned an immediate and severe effect of a colleague's guide to bullying behavior, the evaluation indicated that the colleague did not exhibit a significant direct effect. This principle suggests that social support (as a colleague's support) does not necessarily serve as a direct preventative for a stressful situation (eg, bullying). Instead, it appears to buffer or mitigate the negative effects of stress on a person's psychological well-being. Our results provide strong empirical support for this mechanism (Srinath, 2024). Peer support did not stop the bullying directly, but significantly affected

its negative results by increasing students' mental health (Hadisi, 2022). This increased mental flexibility reduces students' chances of responding aggressively if it is better to handle the victim (reduction of crime) and the victim's psychological crisis, which potentially breaks the cycle of bullying. Instead, its strongest effect appears to be on mental health ($\hat{\alpha} = 0.494$, $p < 0.001$), which suggests that the peer role operates through additional, yet unexplained, mechanisms. Unlike the initial hypothesis, teachers' beliefs indicated that colleague support did not have a significant direct effect on reducing bullying behavior. Instead, the effect was mainly to operate through an indirect passage, which positively affects the students' mental best. From the teacher's perspective (M, Imamuddin, Hadini, Nurbayani, & Hayati, 2025), an auxiliary colleague contributes to a more positive classroom climate and improved psychological flexibility among the students. Teachers believe that it has improved collective mental health, characterized by better emotional regulation and strong social harmony, which makes the atmosphere less favorable for bullying behavior. Although teachers do not observe support directly in the events of bullying, they constantly associate it with psychological conditions that indirectly reduce such behavior. This interpretation takes into account the latest research, which shows that colleagues' contributions to intellectual fitness results are significantly higher than the immediate behavioral results. Wright (2025) emphasized that a colleague plays a moderate role in protective students from the negative emotional effects of attachment and assistant friendship, while a large-scale study looks at the Norwegian teenagers on a huge scale that low colleague support is associated with careful to carefully connected and depressive signs (Helske et al, 2024). Similarly, research on Chinese children has confirmed that the assistance of colleagues and parents acts as a protective factor against self-realizing behavior and serves

as a moderating variable in the connection between bullying and this behavior (Zhang et al., 2024). These conclusions collectively support the idea that college help cannot immediately eliminate bullying, but rather reduces it indirectly by promoting strong intellectual health, flexibility, and emotional well-being among students.

H3 predicted that the teacher's role (X3) has a direct negative effect on bullying behavior (Y).

The outcomes of this look at aid H3 with the aid of displaying that the position of teachers has a widespread direct negative effect on bullying conduct ($\hat{\alpha} = 0.090$, $p = 0.003$) while additionally exerting a positive have an impact on on students' intellectual health ($\hat{\alpha} = 0.125$, $p = 0.011$). These findings highlight that instructors do not serve as the most effective authority figures, but also as protectors and facilitators of college students' psychosocial well-being (Bayangkari, Yudana, & Widiana, 2024). Recent studies confirm that teacher presence, consistent guidance, and effective classroom management are vital factors in reducing the incidence of bullying and fostering a more secure learning environment. Evidence also shows that students who understand their instructors as responsive and proactive in addressing bullying report lower degrees of victimization and more confidence in the fairness of faculty policies (Pöyhönen et al., 2024). In addition, meta-analytic research emphasizes the importance of positive instructor-rival conditions, which contribute to low levels of stress and better social adjustments. Teachers with strong anti-bullying approaches are more likely to intervene in instances of aggression, provide emotional support to victims, and involve friends in creating restructuring answers, ultimately reducing the general spread of bullying in colleges (Vach et al., 2024). These conclusions support the notion that the teacher's work is multifaceted, simultaneously reducing competitive behavior and

promoting mental fitness in students, thereby confirming the recognition of H3.

H4 hypothesized that sports activities, peer support, and the teacher's role positively affect mental health (M).

The outcomes of this study verify H4 by demonstrating that sports, peer support, and the role of teachers significantly contribute to students' academic well-being (Amanullah, Wantini, & Diponegoro, 2023). Among those variables, peer aid emerged as the most powerful predictor, indicating that the presence of supportive friendships has a central position in preserving psychological well-being. This site aligns with current research indicating that participation in established school sports activities promotes a sense of belonging to the school and reduces the likelihood of sadness in young people (Zhang et al., 2024). Longitudinal evidence additionally suggests that better levels of physical activity at some point of early adolescence are associated with reduced signs of hysteria and depression in later years, highlighting the long-term protective role of sports for mental health (Mitchell et al., 2025). Peer assistance in addition strengthens this pathway, as studies show that beneficial peer relationships help college students manage stress, reduce anxiety, and protect against emotional distress (Wang et al., 2023). At the same time, teacher support also plays a vital role, with findings showing that care, attention, and effective communication from teachers definitely affect students' well-being and decrease the chance of mental health problems (Li et al., 2023). Reviews of school-based social and emotional learning programs additionally emphasize that instructor involvement in guiding students' emotional growth substantially improves their intellectual fitness outcomes (Santos et al., 2024). Taken collectively, these findings provide strong evidence that sports, peer support, and instructor involvement interact to strengthen students' psychological resilience and overall intellectual

well-being, there by supporting the acceptance of H4.

H5 suggested that mental health negatively affects bullying behavior and mediates the effects of sports, peer support, and the teacher's role.

The consequences of this have a look at confirmed H5 by showing that intellectual fitness has a good-sized negative impact on bullying behavior, as indicated by means of the coefficient cost ($\hat{\alpha} = 0.347$, $p < \text{zero}.001$). This approach suggests that scholars with better mental well-being are significantly less likely to engage in or become victims of bullying (Marlatt, Gilmore, Flanagan, & Redman, 2022). At the same time, the analysis has shown that the outcomes of sports activities, peer support, and the teacher's role are not only direct but also indirect, via the enhancement of intellectual fitness. This finding aligns with current studies that highlight the mediating role of psychological well-being in reducing competitive and victimizing behaviors (Verdonk, Bendien, & Appelman, 2022). Research concerning Australian teenagers, for instance, indicates that supportive peer, discern, and trainer relationships reduce mental distress and lower the danger of extended bullying, which is consistent with the resilience concept (Barrett et al., 2024). Similarly, studies on cyberbullying reveal that social guide from friends and teachers protects students by strengthening their emotional well-being, which then diminishes the dangerous results of victimization (Sorrentino et al., 2020). Another recent study highlights that physical interest reduces bullying indirectly by improving emotional regulation and lowering interpersonal stress, underscoring the mediating role of intellectual health in this pathway (Zhou et al., 2024). Taken together, those findings beef up the realization that mental health plays a significant role in linking school-based protective factors with reductions in bullying, thereby providing strong support for the acceptance of H5.

H6 posited that self-regulation (Z) moderates the effect of mental health on bullying behavior.

The results of this study confirm this by showing H6 that the self-concept matures in the relationship between intellectual fitness and bullying behavior, as indicated by interaction effects ($\hat{\alpha} = 0.034$, $p = 0.029$). This approach suggests that students with higher ranges of self-law are more capable of developing good mental health into prosocial actions, thereby decreasing the probability of becoming involved in or tolerating bullying. Recent studies provide support for this interpretation. Large-scale research with youth from many countries suggests that self-regulation plays an essential role in mitigating the negative mental consequences of bullying, primarily by reducing the risk of developing competing abilities (Volke et al., 2024). A systematic assessment of faculty-based completely interventions also recognizes self-law as an important issue that strengthens intellectual fitness, encourages lawful behavior, and reduces aggressive behavior in both offline and online settings (Graziano et al., 2024). These findings are consistent with the strain-buffering attitude, which emphasizes that scholars who possess stronger regulatory capacities are more resilient in stressful environments and more capable of using their mental well-being as a resource to face or prevent bullying. Thus, the evidence enhances the attractiveness of H6 and highlights the significance of integrating self-regulation training into college programs aimed at creating more secure and healthier educational environments.

■ CONCLUSION

This study aimed to investigate the impact of sports activities, peer support, and the teacher's role on bullying behavior among elementary school students, examining both direct and indirect effects through mental health as a mediating factor, and to assess the moderating role of self-regulation. Overall, this

study contributes to the development of a conceptual model that examines teachers' perceptions of the dynamics of protective factors against bullying behavior. Our findings strengthen that teachers look at sports activities and their own active roles as direct bullying, while viewing the students' mental health by strengthening students' mental health as indirect bullying. This model of teaching perceptions makes three important contributions to the existing theoretical contours, primarily enriching the ecological model of Bronfenbrenner's branches, which offers a unique perspective of teachers as observers who understand the interaction between personal factors and the school environment. Second, the discovery of the indirect mechanism for colleague support supports the buffer hypothesis, which emphasizes the role of social support in increasing psychological flexibility. Third, the model challenges traditional views that teachers' perceptions may vary from direct student reports, suggesting that the opposite, Crook interventions must regard teachers' approach as political implementers in the region.

The practical implications of this study emphasize the importance of involving teachers in the design of prevention programs that align with daily learning. By integrating the attitude, the intervention can be used more efficiently. It can be continuously performed within the school ecosystem, while peer support exerts its strongest influence indirectly by improving mental health, which subsequently reduces bullying behavior. Moreover, mental health is proven to be a significant mediator that channels the positive effects of sports, peers, and teachers toward the reduction of bullying. Self-regulation further strengthens this relationship, acting as a moderator that enhances the protective role of mental health against bullying. These results not only address research goals but also lead the region by developing a comprehensive model of teachers' perceptions about the dynamics of protective factors against bullying. Our study

suggests that teachers experience their role and directly affect sports activities, while viewing colleague support as a means to improve mental health through these pathways. This model makes two important contributions to the existing theoretical contours. First, it enriches the ecological model for bullying by integrating the teacher's perspective as a crucial mesosystemic factor, providing insight into how teachers interpret the interaction between personal and environmental influences. Second, it challenges the student-centric model by revealing that understanding the teachers' perspectives can vary significantly from student experiences, which suggests that theoretical contours require a more nuanced account of the implementation's approach to school-based interventions. By focusing on teaching perceptions, our model provides a valuable framework for developing more efficient, relevant anti-Bullying strategies that correspond to the practical understanding of teachers' school dynamics. Based on the study's findings, which reflect teachers' perceptions of effective bullying strategies, we recommend several political approaches that incorporate teachers' perceptions of effective interventions. Schools should strengthen their sports programs, such as structured, teacher-sensitive activities, as teachers view these organized activities as direct and effective interventions to reduce bullying behavior. In addition, special training should be preferred to enhance teachers' skills in addressing bullying, monitoring, and focusing on immediate response techniques that teachers find practical and effective. While teachers view the support of a colleague as an indirect factor, structured, teacher-conceptual colleague mediation programs should still be developed based on teachers' understanding of effective support mechanisms. The implementation of school-based mental health programs is still an important recommendation, given that teachers recognize psychological aspects as important intermediaries in the

prevention of bullying. These recommendations are specifically based on teachers' perceptions of intervention efficiency, and to match students' realities, future policies must integrate approaches that prioritize their development.

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