


The Role of Self-Esteem and Body Image as Predictors of Self-Harm Behaviors Among Secondary School Students: A Quantitative Analysis

Hengki Yandri^{1*}, Dosi Juliawati², Alfaiz³, Yuzarion⁴, Rani Mega Putri⁵, Emeliya Hardi⁶
Institut Agama Islam Negeri Kerinci^{1,2}, Universitas Ma'soem³, Universitas Ahmad Dahlan⁴,
Universitas Sriwijaya⁵, Universitas Islam Negeri Mahmud Yunus Batusangkar⁶
hengki.kons@gmail.com

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INTRODUCTION

Adolescence represents a critical developmental period characterized by rapid physical, cognitive, and emotional changes. As defined by the World Health Organization, adolescence encompasses ages 10–19 years, though definitions vary by region and context (World Health Organization, 2014). During this developmental stage, adolescents navigate complex challenges related to identity formation, peer relationships, and self-perception, making them vulnerable to various psychological and behavioural difficulties.

Among the concerning behaviours emerging in adolescent populations is self-harm, often referred to as non-suicidal self-injury. Self-harm is defined as deliberate, intentional injury to one's own body without suicidal intent, typically manifesting as cutting, scratching, burning, or hitting oneself. While self-harm does not aim at suicide completion, research demonstrates that it significantly increases the risk for subsequent suicide attempts across multiple populations, particularly among adolescents and young adults (Fitri et al., 2024; Frei et al., 2021).

The etymology of self-harm is multifactorial. Contemporary biopsychosocial models recognize environmental stressors, including family dysfunction, peer conflict, and academic pressures, alongside individual psychological factors such as emotional dysregulation, low self-esteem, and negative body image. Self-harm frequently serves as a maladaptive coping mechanism—a form of emotion-focused coping aimed at alleviating emotional distress through physical pain (Bahri et al., 2024; McMullin & Cairney, 2004; Rosenberg & Pearlin, 1978).

Two psychological constructs with particular relevance to self-harm are self-esteem and body image. Self-esteem, defined as an individual's evaluative judgment of their own worth and competence, profoundly influences psychological development and well-being (Ma, 2025; Swann & Seyle, 2013). Individuals with low self-esteem frequently exhibit interpersonal difficulties, academic underperformance, depression, anxiety, and social withdrawal—characteristics that may facilitate the adoption of maladaptive coping strategies including self-harm (Bahri *et al.*, 2024; Jiang *et al.*, 2021; Rianti *et al.*, 2024; Yandri, Firman, *et al.*, 2023; Faisyah, *et al.*, 2025)

Body image, the subjective perception and evaluation of one's physical appearance relative to cultural ideals and personal expectations, similarly impacts psychological adjustment. Dissatisfaction with body image emerges when individuals perceive discrepancies between their actual and ideal bodies, a perception amplified in contemporary contexts by social media exposure to idealized physiques. Body image dissatisfaction correlates with reduced self-confidence and increased vulnerability to psychological distress (Boutté *et al.*, 2025; Friedman *et al.*, 2026; Thompson, 2025)

Initial observations at State Senior High School 1 Sungai Penuh revealed that some students engaged in negative self-comparisons with peers, exhibited signs of low self-worth, avoided public participation due to shame about their appearance, and displayed behaviours consistent with self-harm. While these preliminary observations indicated potential relationships among self-esteem, body image, and self-harm, systematic empirical examination was warranted.

This study aimed to (1) examine the relationship between self-esteem and self-harm among secondary school students; (2) examine the relationship between body image and self-harm among secondary school students; and (3) determine the combined predictive influence of self-esteem and body image on self-harm tendencies.

METHOD

Design This study adopted a quantitative, non-experimental survey design using a correlational and predictive approach. This design was selected to structurally measure, evaluate, and model the predictive power of the independent variables—Self-Esteem (X_1) and Body Image (X_2)—over the dependent variable, Self-Harm Tendencies (Y), within an active student population.

Participants and Sampling Procedures

Participants and sampling procedures the target population consisted of High School Students experiencing high academic and peer-group adjustments. This study implemented a saturated sampling approach (total sampling), incorporating the entire accessible cohort of classes X.G and H. The final sample comprised 65 adolescent participants ($N=65$). Saturated sampling was chosen to eliminate sampling error and maximize the internal statistical power of the regression model given the sensitive nature of the dependent variable.

Materials and Apparatus

Data collection employed three validated questionnaire instruments, each using a Likert-scale response format (1 = strongly disagree to 4 = strongly agree). All instruments underwent validity and reliability testing prior to implementation.

Self-Esteem Scale (Greco *et al.*, 2025), this instrument assessed global self-esteem through evaluation of self-worth, competence, and self-regard. Items addressed feelings of personal value, belief in abilities, and satisfaction with oneself. The instrument demonstrated adequate internal consistency (Cronbach's $\alpha = 0.78$).

Body Image Scale (De Faria & Torres, 2025), this measure evaluated satisfaction with physical appearance and body-related perceptions. Items assessed perceived attractiveness, body satisfaction, comparison with peers, and emotional responses to one's appearance. The instrument showed acceptable reliability (Cronbach's $\alpha = 0.82$).

Self-Harm Measurement (Xu *et al.*, 2025), this instrument measured the frequency and severity of self-injurious behaviours across multiple forms (cutting, scratching, burning, hitting, and other methods). The measure demonstrated good internal consistency (Cronbach's $\alpha = 0.81$).

Procedures

The instruments were administered during standard homeroom counseling hours with the cooperation of local school counselors. Students were explicitly brief regarding the voluntary nature of participation, confidentiality protocols, and data anonymization. Informed consent was obtained from all respondents before the digital or physical distribution of the psychometric scales. Data collection was successfully executed over a single-month window.

Data Analysis

Descriptive statistics (means, standard deviations) were computed for all variables. Multiple linear regression analysis, the primary analytic technique, was employed to examine the combined predictive influence of self-esteem and body image on self-harm. Prior to regression analysis, assumptions were tested, including normality (Shapiro-Wilk test), homogeneity of variance, and multicollinearity (variance inflation factors). Statistical significance was set at $p < .05$.

RESULTS AND DISCUSSION

Results

Sample demographic characteristics indicated a mean age of 16.4 years ($SD = 1.2$). The sample included 58% female and 42% male students. Descriptive statistics for study variables are presented in Table 1.

Table 1. Means, Standard Deviations, and Ranges for Study Variables

Variable	Min Score	Max Score	Mean	Std. Deviation	Categorization
Self-Esteem (X1)	44	75	61.43	6.57	Moderate
Body Image (X2)	56	112	68.32	11.05	High
Self-Harm (Y)	32	60	48.66	5.57	Moderate

The survey results highlight three key aspects of the participants' psychological profile: self-esteem, body image, and self-harm tendencies. Overall, the participants display a moderate level of self-esteem (X1), with an average score of 61.43 within a range of 44 to 75. Because the scores only vary slightly (standard deviation of 6.57), most people in the group share a fairly similar level of self-esteem. On the other hand, body image (X2) scored the highest, landing in the high category with an average of 68.32. However, this area saw the widest gap between participants, with scores

stretching from a low of 56 to a high of 112; the high standard deviation of 11.05 shows that people's feelings about their bodies vary greatly from person to person. Lastly, scores related to self-harm (Y) fall into the moderate category, averaging 48.66 within a tighter range of 32 to 60. Similar to self-esteem, the low standard deviation here (5.57) indicates that most participants' responses are clustered close to the average. In summary, while the group generally maintains a high perception of body image, their self-esteem and self-harm metrics both hover at a moderate level, with body image being the most deeply divided topic among the individuals surveyed.

Classical Assumption Tests the One-Sample Kolmogorov-Smirnov check demonstrated normal distribution of residuals ($p > 0.05$). Multicollinearity diagnostic statistics fell within acceptable parameters (Tolerance > 0.10 and VIF < 10), indicating no multi-variable distortion. Heteroskedasticity testing verified stable residual variance across the model ($p > 0.05$).

Multiple Linear Regression Analysis The inferential calculations generated an *R*-Square value (R^2) of 0.444. This indicates that Self-Esteem (X1) and Body Image (X2) simultaneously explain 44.4% of the variance in adolescent Self-Harm Tendencies (Y). The remaining 55.6% is driven by external variables beyond the boundaries of this specific regression model. The regression model yielded a highly significant F-test value ($p < 0.05$), confirming that the combination of self-esteem and body image acts as a statistically reliable predictor of adolescent self-harm behaviours. Concurrently, partial t-test statistics established that both self-esteem (X1) and body image (X2) contribute significantly and independently to the regression equation ($p < 0.05$), thereby confirming all alternative hypotheses (H1, H2, H3).

Discussion

The primary analytical focus of this study was to decode how internal self-evaluations and physical perceptions jointly predict the manifestation of non-suicidal self-injury among school-aged youth. The regression model confirmed that self-esteem and body image hold a strong, statistically significant predictive hold over adolescent self-harm behavior, accounting for almost half of the structural variance (44.4%). This statistical reality emphasizes that an adolescent's physical and psychological relationship with the self serves as a critical watershed for emotional safety or risk within school ecosystems.

The partial analysis revealed that low self-esteem directly accentuates self-harm tendencies (Al-Hendawi, 2022). When adolescents display moderate to low self-esteem, they experience a systemic deficit in coping resources. Such individuals lack structural resilience, view social and academic adjustments with high apprehension, and are prone to experiencing intensive negative affective states like depression and interpersonal isolation (Steiger *et al.*, 2014). Within this state of ego-depletion, self-harm functions as a somatic regulation mechanism—a desperate physical proxy utilized to blunt, control, or ground internal psychic agony that the student feels otherwise unequipped to articulate or manage (Campos *et al.*, 2025; Oktan, 2017; Orlova & Selyutina, 2025).

Concurrently, the study highlights the vital predictive value of body image on self-harm behaviors (Campos *et al.*, 2025). Although descriptive indicators framed the baseline body image as generally high, the inferential trajectory demonstrates that fluctuations in body dissatisfaction remain highly potent triggers for self-harming tendencies (Kuznetsova *et al.*, 2023; Prastuti & Mulyani, 2020). Adolescents who suffer from body dissatisfaction—frequently exacerbated by real or perceived peer evaluation and sociocultural expectations—experience severe emotional distress (Frei *et al.*, 2021; Yun, 2018). Under intense peer comparison or instances of body shaming,

adolescents often translate this cognitive dissatisfaction into active physical resentment (Aguilar Castillo *et al.*, 2025; Rizk-Hildbrand *et al.*, 2025). Consequently, the physical body ceases to be perceived as an entity to be protected, becoming instead a canvas for self-punishment and affective venting via cutting or other tissue damage (Rizk-Hildbrand *et al.*, 2025).

These interconnected configurations highlight major structural implications for secondary education, particularly for school counselors. Given that self-harm tendencies present a major risk factor for subsequent suicidal ideation, immediate diagnostic and therapeutic steps are paramount (Goodman-Scott *et al.*, 2023; Yandri, Suhaili, *et al.*, 2023). Traditional reactive approaches are no longer sufficient. Counselors must actively monitor high-risk cohorts and implement routine universal screenings evaluating self-esteem baselines and body image dynamics (Wachter Morris & Gallo, 2022).

The findings carry important implications for school-based guidance and counseling practice. A comprehensive approach to self-harm prevention should incorporate: (1) self-esteem enhancement programs emphasizing personal strengths, achievement, and intrinsic worth; (2) body image acceptance initiatives that challenge appearance-related social comparison and media influences; and (3) emotional regulation and adaptive coping skill development. Group counseling interventions targeting adolescent self-perception and body satisfaction may prove particularly efficacious given the developmental salience of peer relationships during adolescence.

Limitations

Several limitations warrant acknowledgment. First, the study employed a convenience sample from a single school, limiting generalizability to broader adolescent populations. Second, the cross-sectional design precludes causal inference; longitudinal designs would clarify temporal relationships. Third, reliance on self-report measures may introduce response bias, though the instruments employed demonstrated adequate reliability. Fourth, the study did not account for contextual factors (family environment, socioeconomic status, media exposure) that may moderate relationships among variables.

Future Research Directions

Future investigations should employ longitudinal designs to establish temporal and potentially causal relationships. Inclusion of additional psychological variables (emotion regulation, trauma history, coping mechanisms), family factors (parental support, family conflict), and contextual factors (peer relationships, academic stress, media exposure) would advance understanding of self-harm etiology. Qualitative investigation of students' subjective experiences and meanings associated with self-harm would complement quantitative findings. Research examining protective factors and resilience mechanisms would inform the development of strength-based interventions. Cross-cultural studies would clarify whether relationships among variables generalize across different cultural contexts.

CONCLUSIONS

Self-esteem and body image emerge as significant predictors of self-harm behaviours among secondary school students, with both variables demonstrating statistically significant inverse relationships with self-injurious behaviour. The combined model explains 44.4% of self-harm variance, highlighting the importance of these constructs while acknowledging the influence of

unmeasured factors. These findings support the implementation of comprehensive school-based interventions targeting self-perception enhancement and body image acceptance as preventive strategies for self-harm. Counseling professionals should prioritize the development of strengths-based programs that foster positive self-evaluation, challenge appearance-related distortions, and equip adolescents with adaptive emotional regulation and coping skills. Furthermore, systems-level approaches addressing family dynamics, peer relationships, and school climate warrant equal attention in comprehensive self-harm prevention efforts. Continued research illuminating the mechanisms through which self-esteem and body image influence self-harm, alongside investigation of protective and moderating factors, will enhance the evidence base supporting clinical and preventive interventions for this concerning adolescent behaviour.

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