The Role of Self-Esteem and Social Skills in Perceived Stress Among Female Secondary School Students

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Abstract

Objective: This study examined the roles of self-esteem and social skills in perceived stress among female senior secondary school students in Iran. **Method:** Using cluster random sampling, 357 female students (ages 15–18) were recruited from District 1 of Karaj. Participants completed the Coopersmith Self-Esteem Inventory, the Matson Evaluation of Social Skills with Youngsters, and the 14-item Perceived Stress Scale. Pearson correlations and simultaneous multiple regression were conducted. **Results:** Self-esteem ($r = -.91$, $p < .001$) and social skills ($r = -.88$, $p < .001$) were each significantly and negatively correlated with perceived stress. The two predictors jointly accounted for 84.7% of the variance in perceived stress, adjusted $R^2 = .847$, $F(2, 354) = 983.83$, $p < .001$. Self-esteem emerged as the stronger unique predictor ($\beta = -.61$) compared with social skills ($\beta = -.34$). **Conclusion:** Self-esteem and social skills jointly account for a substantial share of variance in perceived stress among female adolescents. Findings underscore the value of school-based interventions that simultaneously target both constructs, with particular emphasis on self-esteem enhancement.

Keywords*:* self-esteem, social skills, perceived stress, adolescent girls, secondary school

Introduction

Adolescence represents a critical developmental period characterized by rapid physical, cognitive, and social changes that place young people at heightened risk for psychological distress (Pascoe et al., 2020). The transition through secondary education introduces academic pressures, identity formation challenges, and evolving interpersonal demands that can overwhelm adolescents' coping resources (Hosseinkhani et al., 2020). Perceived stress—defined as the degree to which life situations are appraised as unpredictable, uncontrollable, and overloading (Cohen et al., 1983)—has emerged as a key indicator of adolescent mental health vulnerability. Research in Iran has shown that a substantial proportion of female adolescents report elevated levels of perceived stress, with consequences including diminished academic performance, impaired social functioning, and increased risk for depression and anxiety (Heizomi et al., 2018).

Lazarus and Folkman's (1984) Transactional Model of Stress and Coping provides the theoretical foundation for the present study. According to this model, stress arises from the transaction between the individual and the environment, mediated by cognitive appraisals of threat (primary appraisal) and available coping resources (secondary appraisal). Personal resources—including self-esteem and social competencies—play a central role in shaping these appraisals (Biggs et al., 2017). Individuals with higher self-esteem tend to appraise

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potentially stressful situations as less threatening, whereas those with well-developed social skills are better equipped to mobilize interpersonal support and navigate social demands effectively (Obbarius et al., 2021).

Self-esteem, conceptualized as the evaluative component of self-concept reflecting an individual's sense of personal worth (Coopersmith, 1967), has been consistently linked to reduced stress vulnerability in adolescent populations. Cross-cultural studies have documented significant inverse correlations between self-esteem and perceived stress (Bai et al., 2021; Bi & Ma, 2016; Wright et al., 2023). Self-esteem appears to operate as a psychological buffer, enabling individuals to confront stressful circumstances without experiencing excessive emotional distress (Nguyen et al., 2019). Notably, Bi and Ma (2016) demonstrated that perceived stress mediates the self-esteem–interpersonal relationship link specifically among girls, suggesting gender-specific vulnerability pathways that warrant targeted investigation. Iranian studies have similarly reported inverse associations: Hosseini Nasab et al. (2010) found that social skills training produced significant increases in self-esteem among female secondary school students, and Dolatian et al. (2015) documented a significant inverse correlation between self-esteem and perceived stress in Iranian women.

Social skills—defined as learned, situation-specific behaviors that facilitate effective interpersonal interaction (Matson et al., 1983)—represent another critical protective factor. Segrin's (2019) Social Skills Deficit Vulnerability Model posits that individuals lacking adequate social competencies experience greater difficulty managing interpersonal demands, leading to elevated stress and loneliness. Intervention studies conducted in Iran have demonstrated that assertiveness training significantly reduces stress and anxiety among female high school students (Eslami et al., 2016), and cognitive-behavioral programs targeting social skills have improved functioning in Iranian female adolescent samples (Hemati Sabet et al., 2013; Kazemi et al., 2022). Shalani et al. (2017) further reported that social skills predicted aggression and coping style use among Iranian female students.

Despite accumulating evidence linking self-esteem and social skills independently to stress outcomes, relatively few studies have examined the joint and relative contributions of both variables in predicting perceived stress within a single analytical framework—particularly among Iranian female secondary school students. This population faces unique psychosocial pressures, including competitive university entrance examinations and culturally specific gender-role expectations (Hosseinkhani et al., 2021). The present study addresses this gap by investigating the following hypotheses: (1) self-esteem is negatively correlated with perceived stress; (2) social skills are negatively correlated with perceived stress; and (3) self-esteem and social skills jointly predict perceived stress among female secondary school students.

Method

Participants

The statistical population comprised 4,876 female students enrolled in the senior secondary level (grades 10–12) in District 1 of Karaj, Iran. Using Krejcie and Morgan's (1970) sample size table, a minimum of 357 participants was required. Participants were selected through cluster random sampling: schools were randomly selected from the district, and intact classes within those schools were recruited. The final sample comprised 357 female students ranging in age from 15 to 18 years (23.53% aged 15; 26.89% aged 16; 27.45% aged 17; 22.13% aged 18). All participants were enrolled full-time in public secondary schools. Students who declined to participate, whose parents or guardians did not provide consent, or who submitted incomplete questionnaires were excluded from the final sample.

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Instruments

Coopersmith Self-Esteem Inventory (SEI). Self-esteem was assessed using the 58-item Coopersmith Self-Esteem Inventory School Form (Coopersmith, 1967), which includes 50 substantive self-esteem items and 8 lie-scale items. Items are scored dichotomously (yes/no), with total scores on the substantive items ranging from 0 to 50. Higher scores indicate greater self-esteem. The instrument measures self-esteem across four domains: general self, social self-peers, home-parents, and school-academic. The SEI has demonstrated acceptable psychometric properties across diverse cultural contexts, including Iranian adolescent populations (Potard et al., 2015; Potard, 2017). In the present sample, Cronbach's α was .87.

Matson Evaluation of Social Skills with Youngsters (MESSY). Social skills were measured using the Persian-adapted self-report version of the MESSY (Matson et al., 1983), containing 56 items assessing social behaviors in children and adolescents. Items are rated on a 5-point Likert scale (1 = never to 5 = always) and yield subscale scores for appropriate social skills, inappropriate assertiveness, impulsivity, overconfidence, and jealousy/withdrawal. Total scores range from 56 to 280, with higher scores indicating greater overall social competence. The MESSY has been validated cross-culturally (Cordier et al., 2015) and used effectively with Iranian adolescent samples (Kazemi et al., 2022). In the present sample, Cronbach's α for the total score was .90.

Perceived Stress Scale (PSS-14). Perceived stress was assessed using the 14-item version of the Perceived Stress Scale (Cohen et al., 1983), which measures the degree to which life situations are appraised as stressful over the past month. Items are rated on a 5-point Likert scale (0 = never to 4 = very often). Seven items are positively stated and reverse-scored. Total scores range from 0 to 56, with higher scores indicating greater perceived stress. The PSS-14 has demonstrated robust psychometric properties across international adolescent samples, including a two-factor structure (perceived helplessness and perceived self-efficacy) confirmed through confirmatory factor analysis (Marakshina et al., 2024; Santiago et al., 2019). In the present sample, Cronbach's α was .84.

Procedure

The study employed a descriptive-correlational research design. Ethical approval was obtained from the institutional review board of Islamic Azad University, Buyin Zahra Branch, and the study complied with the Declaration of Helsinki. Because participants were minors or young adults under 18 at the time of data collection, written informed consent was obtained from parents or legal guardians, and written informed assent was obtained from each student. Questionnaires were administered in group sessions during regular class hours. Participation was voluntary, responses were anonymous, and participants were informed that they could withdraw at any time without penalty.

Data Analysis

Prior to analysis, data were screened for missing values, univariate outliers (cases with z-scores exceeding ±3.29), and the normality of regression residuals. The Kolmogorov-Smirnov test was conducted to verify the normality of each study variable prior to parametric analyses. Associations among variables were examined using Pearson product-moment correlation coefficients. The joint predictive contribution of self-esteem and social skills was tested using simultaneous (enter method) multiple regression. Multicollinearity diagnostics (variance inflation factor [VIF] and tolerance) were inspected to evaluate the stability of regression coefficients. All analyses were conducted using SPSS Version 26, with an alpha level of .05 adopted for all significance tests.

Results

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Descriptive Statistics and Preliminary Analyses

Table 1 presents the descriptive statistics and Kolmogorov-Smirnov normality test results for the study variables. All three variables demonstrated approximately normal distributions (all ps > .05), supporting the use of parametric statistical techniques. No univariate outliers exceeded the z = ±3.29 threshold, and inspection of residual plots confirmed that the assumptions of linearity, homoscedasticity, and normality of residuals were met.

Table 1

Descriptive Statistics and Kolmogorov-Smirnov Test Results (N = 357)

Variable	M	SD	K-S Statistic	p	Distribution
Social Skills (total)	154.05	26.73	0.270	.171	Normal
Perceived Stress	26.40	8.12	0.950	.806	Normal
Self-Esteem	33.03	9.45	0.371	.364	Normal

Hypothesis Testing

Hypothesis 1: Self-esteem and perceived stress. Pearson correlation analysis revealed a significant negative correlation between self-esteem and perceived stress, r = −.91, p < .001. Higher self-esteem was associated with substantially lower levels of perceived stress among female secondary school students.

Hypothesis 2: Social skills and perceived stress. Pearson correlation analysis revealed a significant negative correlation between total social skills and perceived stress, r = −.88, p < .001. Higher social skills were associated with substantially lower perceived stress.

Table 2 presents the full correlation matrix among the study variables. Self-esteem and social skills were also strongly and positively intercorrelated (r = .89, p < .001), indicating that students higher on one construct tended to be higher on the other as well.

Table 2

Pearson Correlations Among Study Variables (N = 357)

Variable	1	2	3
1. Perceived Stress	—		
2. Self-Esteem	−.91**	—	
3. Social Skills (total)	−.88**	.89**	—

***p < .01.*

Hypothesis 3 (Main Hypothesis): Joint prediction of perceived stress. Simultaneous multiple regression was conducted to test whether self-esteem and social skills jointly predicted perceived stress. As shown in Table 3, the overall regression model was significant, F(2, 354) = 983.83, p < .001. The multiple correlation coefficient was R = .921, and the adjusted R^2 was .847, indicating that self-esteem and social skills together accounted for approximately 84.7% of the variance in perceived stress. Multicollinearity diagnostics indicated elevated but tolerable collinearity (VIF = 5.11, tolerance = .20 for both predictors), consistent with the substantial intercorrelation between self-esteem and social skills.

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Table 3

Summary of Simultaneous Multiple Regression Analysis Predicting Perceived Stress

Model	R	R^2	Adj. R^2	F	df	p
Regression	.921	.848	.847	983.83	2, 354	< .001

Table 4 presents the standardized regression coefficients. Self-esteem was the stronger unique predictor of perceived stress ($\beta = -.61$, t (354) = −12.69, $p < .001$) compared with social skills ($\beta = -.34$, t (354) = −7.05, $p < .001$). Both predictors made statistically significant unique contributions to the model, indicating that higher self-esteem and higher social skills each independently predicted lower perceived stress.

Table 4

Standardized Regression Coefficients Predicting Perceived Stress

Predictor	β	t(354)	p	VIF
Self-Esteem	−.61	−12.69	< .001	5.11
Social Skills (total)	−.34	−7.05	< .001	5.11

Discussion

The present study investigated the roles of self-esteem and social skills in predicting perceived stress among female secondary school students in Karaj, Iran. All three hypotheses were supported: self-esteem and social skills were each significantly and negatively correlated with perceived stress, and together they accounted for a substantial proportion of variance in stress levels. These findings extend prior research by examining both constructs as simultaneous predictors within a single analytical framework and by focusing specifically on female adolescents in the Iranian educational context.

The negative correlation between self-esteem and perceived stress is consistent with the broader literature documenting the protective function of self-esteem against psychological distress in adolescence (Bai et al., 2021; Moksnes et al., 2016; Wright et al., 2023). This finding supports Lazarus and Folkman's (1984) Transactional Model, in which self-esteem functions as a key personal resource shaping cognitive appraisals of potentially stressful events. Students with higher self-esteem likely evaluate challenging situations as less threatening, thereby reducing overall perceived stress (Obbarius et al., 2021). The result that self-esteem emerged as the stronger unique predictor (β = −.61) aligns with Bi and Ma's (2016) observation that self-esteem–stress pathways are particularly salient for female adolescents, and with Iranian evidence documenting an inverse relationship between self-esteem and perceived stress (Dolatian et al., 2015).

The negative association between social skills and perceived stress supports the Social Skills Deficit Vulnerability Model (Segrin, 2019), which posits that inadequate social competencies compromise individuals' ability to manage interpersonal demands and mobilize social support, leading to heightened stress. This finding is further consistent with Iranian intervention studies demonstrating that assertiveness training reduces stress and anxiety in female high school students (Eslami et al., 2016) and that emotional-intelligence–based programs enhance social skills and adaptive coping (Hemati Sabet et al., 2013). In the present regression model, social skills made a significant but comparatively smaller unique contribution (β = −.34), suggesting that part of the protective effect of social competence may be

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shared with self-esteem. Future research using longitudinal designs and formal mediation analysis is needed to test whether self-esteem mediates the social skills–stress association; the cross-sectional design of the present study cannot support such a causal claim.

The strong intercorrelation between self-esteem and social skills (r = .89) is theoretically coherent. Adolescents with well-developed social competencies likely receive more positive feedback from peers and adults, which reinforces self-worth; conversely, adolescents with higher self-esteem are more likely to approach social situations with confidence and develop their social skills through practice. The resulting multicollinearity (VIF = 5.11) inflates the standard errors of the regression coefficients and warrants a degree of caution when interpreting the relative weights of the two predictors, although both retained statistically significant unique contributions.

Several limitations should be acknowledged. First, the cross-sectional design precludes causal inferences about the direction of relationships among variables. Longitudinal research is needed to determine whether self-esteem and social skills causally reduce perceived stress or whether the relationship is bidirectional. Second, exclusive reliance on self-report measures introduces the possibility of shared method variance and social desirability bias, which may inflate observed correlations. Future studies should incorporate multi-method assessments, such as teacher ratings of social skills or physiological stress markers. Third, the sample was limited to female students in a single district of Karaj, which constrains generalizability to other populations, including male students, different geographic regions, and different cultural contexts. Fourth, the substantial intercorrelation between self-esteem and social skills, while theoretically coherent, reduces the precision with which the unique contribution of each predictor can be estimated.

Despite these limitations, the findings carry important practical implications. The substantial predictive power of self-esteem and social skills for perceived stress suggests that school-based interventions targeting these constructs may meaningfully benefit adolescent mental health. Assertiveness training programs have demonstrated efficacy in reducing stress and enhancing self-esteem among Iranian high school students (Eslami et al., 2016), and school-based social skills programs have shown promise internationally (Olivares-Olivares et al., 2019; van Loon et al., 2023). Given that self-esteem emerged as the stronger predictor, programs emphasizing self-worth development—through competence-building activities, supportive teacher–student relationships, and cognitive restructuring techniques—may be particularly effective. The integration of social skills training with self-esteem enhancement within comprehensive school counseling programs represents a promising avenue for reducing perceived stress and promoting the psychological well-being of female adolescents in Iran and comparable cultural contexts.

Conclusion

This study demonstrated that self-esteem and social skills jointly account for a large proportion of variance in perceived stress among female secondary school students in Iran. Self-esteem emerged as the stronger unique predictor, while social skills made an independent, significant contribution. These findings underscore the importance of fostering both intrapersonal resources (self-esteem) and interpersonal competencies (social skills) as protective factors against stress during the critical developmental period of adolescence. School-based programs that simultaneously target self-esteem enhancement and social skills development may offer an effective approach to reducing perceived stress and supporting the psychological well-being of female adolescents.

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