

Perceived parental bonding styles and self-esteem: a study on adolescents in Dhaka division

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Abstract

This study explored the current status of perceived parental bonding practices and their link to adolescents' self-esteem in Dhaka division, Bangladesh. Using a cross-sectional, correlational research design, data were collected from 254 participants using the Parental Bonding Instrument (PBI) and the Rosenberg Self-Esteem Scale (RSE). The Spearman's rank-order correlation between self-esteem and overprotection dimensions revealed very weak correlations for paternal and maternal overprotection ($r = .13, p < .05$; $r = .14, p < .05$). A similar pattern was observed between self-esteem and the care dimension, with very weak associations for maternal and paternal care ($r = .14, p < .05$; $r = .12, p < .05$). Regarding the inter-dimensional correlation of PBI, a strong, significant correlation was found between paternal and maternal care ($r = .73, p < .01$). Mann-Whitney U test showed that males reported slightly higher self-esteem than females (male mean rank = 130.35; female mean rank = 124.31). A significant gender difference was found in paternal and maternal care ($p < .05$). A significant difference was found in the H test for perceived maternal overprotection only across the socio-economic status ($p < .05$). In a nonparametric ranked hierarchical multiple regression analysis, the PBI dimensions accounted for 4.6% of the variance in self-esteem, and no statistically significant predictor was found from PBI dimensions after controlling for gender and SES.

Introduction

Parental bonding implies an individual's views of the degree of love, affection, care, empathetic responses, and security a child experiences from his or her parents. This concerns the child's perceptions of his or her parents' parental practices during the formative years (Xu et al., 2018). Parental bonding is often conceptualized across different dimensions- "parental care" and "parental overprotection" (Parker et al., 1979; Zain et al., 2023). Parental care implies the perceived warmth, understanding, acceptance, emotional connection, and support from parents. On the other hand, excessive parental control,

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excessive criticism, over-interference, and discouragement of autonomous action to shield children from any hindrances are all considered as parental overprotection (Leung, 2020).

These perceptions of parental practices are greatly influenced at different phases of life, especially during adolescence. Here, establishing one's identity is crucial, and self-esteem (a person's comprehensive and personal appraisal of their own value) undergoes substantial developmental changes (Orth & Robins, 2014, 2022; Muris & Otgaar, 2023). Close bonds, such as family (especially parent-child connections), peers, and other social factors, as well as life experiences, contribute to the development of self-esteem by shaping self-judgments (Orth & Robins, 2014, 2022; Neves et al., 2024). According to Erikson (1950) "theory of psychosocial development" when parents provide autonomy, warmth, support, and respect boundaries, adolescents are less likely to experience an identity crisis; rather, they develop a positive self-image and higher self-esteem (Pérez-Fuentes et al., 2019; Orth & Robins, 2014, 2022). Whereas they may develop self-doubts if faced with parental overprotection (Affrunti & Woodruff-Borden, 2015a, 2015b; Segrin et al., 2012; Leung, 2020).

In line with earlier findings, parental bonding is regarded as the predisposing factor of depression, introversion, tension, and impairment in adaptability (Avagianou & Zafiropoulou, 2008). Without the warmth, acceptance, validation, and supportive home environment in families, adolescents may have exposure to emotional maladjustments and become defenseless against life stressors. A strong negative correlation was also found between depression and self-esteem (Azmi et al., 2022). Children and adolescents who experience overprotection usually have lower life satisfaction, greater dependency on caregivers, emotional insecurity, poorer emotion regulation, more anxiety, more depressive symptoms, lower self-esteem, which often leads to juvenile delinquency and antisocial behaviors, and may have a detrimental effect on their overall psychological functioning (Hoeve et al., 2009; Affrunti & Woodruff-Borden, 2015; Segrin et al., 2012; Leung, 2020). Parental care may buffer from psychological distress and is correlated with higher self-esteem by fostering a healthier sense of self-worth, promoting resilience, and healthy coping skills among adolescents and in later developmental stages (Orth, 2018; Orth & Robins, 2014, 2022; Li et al., 2023). Adolescents' self-esteem directly drives academic success and healthy emotional coping. Understanding the relationship between parental bonding dimensions and adolescents' self-esteem is crucial, as it would offer practical applications in clinical intervention frameworks, such as family-based interventions, parental training programs, and school-based counseling programs, to improve adolescents' emotional and behavioral adjustment (Kuhn & Laird, 2014; Arslan, 2019; Pedrini et al., 2022). Adult psychological functioning (self-esteem, emotion, and relationship management) continues to be influenced by early experiences of parental bonding (Brummelman & Sedikides, 2020; Yap et al., 2021).

However, parental practices are not universal; they are deeply rooted in cultural norms, how parents form a bond with their children, and how children perceive that bond. According to Keller's (2000) eco-cultural framework, parenting is a biological duty operated

through a social lens. In individualistic Western societies, parents are less controlling; open communication and independence are emphasized, which significantly improves children's mental health, boosting adolescents' self-confidence and sense of responsibility (Baumrind, 1971; Su, 2025). In contrast, East Asian cultures are collectivist, rooted in traditional beliefs, and emphasize respect for elders and obedience to parents' orders to maintain family harmony (Chao, 1994; Cheung & Cheah, 2025; Su, 2025). Asian parents are generally stricter about how their children follow societal rules and cultural norms. In East Asian culture, control is seen as a form of care and concern, yet it simultaneously increases psychological stress (Su, 2025). In South Asian urban cultures, where religious traditions emphasize respect for parents and elders, studies found that adolescents often reported depression and social anxiety (Mishra & Kiran, 2018; Alam et al., 2026). A longitudinal study of Asian adolescents shows that protective parenting behaviors are rooted in an emotional climate of parental investment, which serves as a protective buffer, actively supporting self-esteem rather than undermining it and causing psychological distress (Park et al., 2021). These studies reveal a clear contradiction between parental practices in Eastern and Western cultures, and even within the Asian context, which warrants further exploration and understanding.

Moreover, the gender of both parents and children is considered an important factor in understanding these practices. These gender differences are not universal but rather context-dependent, influenced by cultural factors, family structures, and other factors. Mothers, in particular, are perceived as more engaged, caring, supportive, and overprotective than fathers. Daughters sometimes report receiving more maternal care compared to sons, and overprotection was perceived as quite similar across both genders in the West (Shek, 2005; Uji et al., 2006; Pereira & Oliva, 2023). In South Asian and collectivist cultures, parents often show more care and overprotection as they tend to supervise children's activities and decisions. Mothers here are also socially expected to be primary carers, which would significantly predict self-esteem. Daughters here may experience greater parental care and protection to ensure security and reputation (Hossain & Atencio, 2017; Pereira & Oliva, 2023).

Besides gender differences, other important factors also play a crucial role here. Recent literature indicates that socioeconomic status is associated with parental bonding and parenting quality, while higher socioeconomic status and resources are generally linked to greater parental investment in children's development, supporting positive academic and social outcomes that accelerate children's development (Conger et al., 2010). On the other hand, children from families with lower socioeconomic status during early childhood demonstrated lower trait resilience due to a lack of parental support and received more physical punishment (Yu et al., 2025; Ibrahim & Patwary, 2025). The inter-relationship between parental practices, characterized by shared child-rearing alignment between mothers and fathers, also plays a role in these experiences and is considered the primary determinant of a stable family ecosystem, with moderate alignment reported in the global

literature. This congruence is neither perfect nor universal, as inter-parental incongruence is also common among parents (Hess, 2021; Campbell, 2023).

It is worth noting that empirical evidence highlights a systemic disruption to these domestic structures and broader familial and social institutions after the COVID-19 pandemic, which has brought a new mental health concern worldwide (Son et al., 2020; Hosen et al., 2021; Cénat et al., 2022; Chen et al., 2025). A significant empirical gap remains here regarding how these post-pandemic mental health trajectories are demonstrated within parental bonding and self-esteem among adolescents. To date, no known study has explicitly examined the intersection of the post-pandemic mental health landscape between parental bonding and adolescents' self-esteem.

The global weight of the pandemic was also compounded by life experiences across Bangladesh (Bodrud-Doza et al., 2020). Most existing research on Bangladesh has focused only on specific regions and samples, creating a contextual and sample gap, mostly focused on young adults and university students. Sultana and Kabir (2021) found that male madrasah students and participants from lower-SES backgrounds reported lower self-esteem and an inferiority complex than females and participants from middle- and higher-SES backgrounds, respectively. In another study, Khan and Kamal (2023) investigated orphan and non-orphan adolescents in the northern region of Bangladesh and found that adolescents residing in orphanages reported lower emotional intelligence than those living with their families, which indicates the impact of parental involvement.

According to the Bangladesh Bureau of Statistics (2022), Dhaka has the highest population growth, hyper-rapid urbanization, and socioeconomic growth, and its infrastructure and utilities are highly centralized. A recent study found generational change in parental practice patterns: mothers in Dhaka often adopt a Western, individualistic approach, a shift toward nuclear families, and high achievement pressure, creating a unique environment for adolescents (Ferdous & Hossain, 2020; Anjum et al., 2022b; Jasmine et al., 2025). Research reveals that adolescents here in Dhaka experience moderate to severe stress (73.5%), anxiety (47.9%), fatigue (21.5%), and inadequate sleep (18%) (Anjum et al., 2022a, 2022b; Ria et al., 2024). A recent study found that students who communicate with their parents every day reported lower stress (Yasmin et al., 2024). Despite this, there is a significant scarcity of research on family dynamics and adolescents in the Dhaka division, creating a knowledge gap. To address this gap, this study focuses specifically on Dhaka's distinct family dynamics, how Dhaka's adolescents perceive parental bonding dynamics that are related to their self-esteem.

Objectives

1. To investigate the gender-based differences in self-esteem and PBI dimensions of adolescents.
2. To determine the socioeconomic status-based differences in self-esteem and PBI dimensions of adolescents.

3. To see the relationships between parental bonding dimensions (care and overprotection) and self-esteem among adolescents residing in Dhaka division.
4. To determine the contribution of PBI dimensions in predicting self-esteem.
5. To investigate the inter-relationships among the dimensions of parental bonding (care and overprotection) of the adolescents residing in Dhaka division.

Materials and Methods

Design

A cross-sectional, correlational survey design was followed in the study.

Participants

A purposive sampling technique was employed to select participants. Participants needed to meet specific inclusion criteria to ensure that the selected study populations reflected the aims and objectives of this study. Participants were eligible if they were aged 15 to 18, students in classes 8 to 12 across the Dhaka division (Dhaka, Gazipur, and Narsingdi), and had both parents alive and residing with them. A priori power analysis conducted using G*Power (Faul et al., 2009) indicated that a minimum sample of 167 participants was required to detect a medium effect size ($f^2 = .15$) with power of .80 and $\alpha = .05$. Accounting for standard missingness, we targeted 200 responses. Therefore, we collected response form 254 participants (47.24% females, 52.76% males), with a mean age of 16.44 years ($SD = .94$). The characteristics of participants are presented in Table 1.

Table 1. Socio-demographic Characteristics of the Study Participants

Variable Categories	Frequency (<i>n</i>)	Percent (%)
Gender		
Male	134	52.76
Female	120	47.24
Socioeconomic Status		
Lower class	6	2.36
Lower-middle class	29	11.42
Middle class	195	76.77
Upper-middle class	19	7.48
Upper class	5	1.96

Measurement instruments

Parental Bonding Instrument (PBI): The PBI was developed by Parker et al. (1979). It was adapted by Karim and Begum (2017) in Bangla. This scale originally consisted of 25 items per parent. The Cronbach's alpha of the original version ranged from .88 to .93 for the 'Care' subscale, and for the 'Overprotection' subscale, it ranged from .74 to .88. The Bangla version consisted of 17 items. This is a self-report scale in which each item was rated on a 4-point

Likert scale, ranging from very like (3) to very unlike (0). This scale contains two subscales: the 'Care' (1, 2*, 3, 4, 5, 9, 10, 11*, 13*, 14, 17) and the 'Overprotection' (6, 7, 8, 12*, 15, 16). The reliability of the Bangla version of PBI was examined by estimating internal consistency. The Cronbach's alpha for the 'Care' subscale was $\alpha = .863$, and for the 'Overprotection' subscale, it was $\alpha = .622$; thus, the Bangla version was found to be reliable.

Rosenberg Self-Esteem Scale (RSE): The scale was originally developed by Rosenberg (1965) to measure adolescents' and adults' feelings of self-worth or self-acceptance. The adapted Bangla version of the self-esteem scale (RSE) was developed by Illyas and Huque (2007). The RSE scale is a self-report, 10-item, 4-point Likert scale, ranging from 1 = Strongly agree to 4 = Strongly disagree. The reverse items are 2, 5, 6, 8, and 9 (1 = Strongly disagree to 4 = Strongly agree). A significant correlation ($r = .76, p < .05$) between the English and Bangla versions' scores indicated the scale's adapted translation reliability. The high Cronbach's alpha ($\alpha = .87$) of the Bangla version further indicated the scale's internal consistency. The sum of all items was the individual's total score on the scale; a higher score indicates higher self-esteem.

Procedure

Data collection was conducted both in person and online via Google Forms to ensure more inclusion of students who were absent in person. For in-person data collection, we contacted the authorities of several schools and colleges to obtain permission and schedule data collection. Students enrolled in classes 8-12, aged 15-18, participated in the study. Participants were briefed about the confidentiality and protection of their identity and information before giving consent. After receiving consent, we provided both verbal and written instructions. The questionnaire contained the demographic information form, the Bangla versions of the PBI for both parents, and the "Rosenberg Self-Esteem Scale". For the online survey, a Google Form was distributed through various social media platforms, in accordance with the CHERRIES (Checklist for Reporting Results of Internet E-Surveys) Guidelines (Eysenbach, 2004). An electronic consent form outlined the study's objectives, the voluntary nature of participation, and the right to withdraw from the study. Participants were explicitly assured of complete data confidentiality and anonymity. The in-person data collection was conducted via printed questionnaires administered directly by the researchers following identical ethical protocols.

Data Analysis

The data were analyzed using nonparametric tests— the Mann-Whitney U test, the Kruskal-Wallis H test, and Spearman's rank-order correlation—as the assumption of normality was violated. A nonparametric rank-based hierarchical regression analysis was performed using ranked variables to examine the extent to which the PBI dimensions (care

* Reverse items

and overprotection) predict self-esteem, while controlling for the demographic variables gender and SES.

Results and Discussion

Assumptions Checks

The assumptions of parametric tests— normality, homogeneity of variances, linearity, homoscedasticity, normality of residuals, and independence of observations were— tested on the data set. The assumption of normality was violated, and others were reasonably satisfied.

Gender-based Differences in Self-esteem Scores and PBI Dimensions

A Mann-Whitney U test was used to examine gender difference was in the four PBI dimensions and self-esteem (Table 2). No statistically significant gender differences were observed for self-esteem ($p > .05$). Males exhibit slightly higher mean rank ($MR = 130.35$) than females ($MR = 124.31$), a difference that was not significantly significant.

Similarly, gender differences did not reach statistical significance ($p > .05$) for either paternal or maternal overprotection. Males trended slightly higher in mean ranks for both paternal overprotection ($MR = 133.38$) compared to females ($MR = 120.93$) and maternal overprotection ($MR = 128.95$) than the females ($MR = 125.28$), though these minor variations suggest comparable perceptions of parental overprotection between genders.

In contrast, significant gender differences were found in both paternal and maternal care dimensions ($p < .05$). Compared to male participants (Paternal $MR = 106.70$; Maternal $MR = 102.50$), female participants reported higher levels of parental care in both cases (Paternal: $MR = 150.73$; Maternal: $MR = 155.41$). Effect size ($r = Z/\sqrt{N}$) of Mann-Whitney are added in Table 2.

Table 2. Gender Differences across Self-esteem (SE) and PBI Dimensions ($N = 254$)

Variable	Gender	N	Mean Rank	Sum of Ranks	Z	U	r	p
Self-esteem	Male	134	130.35	14917.50	.657	7,657.50	.041	.511
	Female	120	124.31	17467.50				
Paternal Overprotection	Male	134	133.38	17873.50	1.354	7,251.50	.085	.176
	Female	120	120.93	14511.50				
Maternal Overprotection	Male	134	128.95	17279.00	.334	7,846.00	.021	.738
	Female	120	125.28	15106.00				
Paternal Care	Male	134	106.70	14297.50	4.779	5,252.50	.300	< .001
	Female	120	150.73	18087.50				
Maternal Care	Male	134	102.50	13735.50	5.752	4,690.50	.361	< .001
	Female	120	155.41	18649.50				

Socioeconomic Status Differences in Self-Esteem and Parental Bonding

Kruskal–Wallis H tests were conducted to examine differences in self-esteem and four parental bonding dimensions across five socioeconomic status levels (lower, lower-middle, middle, upper-middle, and upper class). Significant differences were observed for mothers' overprotection only ($p < .05$) with an effect size of .024, using the following formula, effect size (η^2) = $(H-k+1)/(N-k)$ (here, k = number of groups, N = total sample size = 254). Whereas self-esteem, father's overprotection, father's care, and mother's care did not differ significantly across SES groups ($p > .05$). According to Cohen's (1988) guidelines, the standardized coefficients for this study sample indicate relatively small effect sizes. These small-to-moderate effect sizes are conceptually accepted in psychological and behavioral research when investigating complex human phenomena (Götz et al., 2022).

Table 3. Differences in Self-Esteem and Parental Bonding Dimensions across Socioeconomic Status Levels

Variable	<i>H</i> (4)	<i>p</i>	η^2
Self-esteem	6.109	.191	.008
Father's Overprotection	.483	.975	.000
Mother's Overprotection	9.979	.041	.024
Father's Care	8.197	.085	.016
Mother's care	2.560	.634	.000

Relationship between Self-esteem and PBI Dimensions

Spearman's rank-order correlation was conducted to investigate the relationships between self-esteem and four parental bonding dimensions, as well as among the PBI dimensions. Very weak associations were observed between self-esteem and the parental overprotection dimensions (maternal and paternal). Similarly, weak relationships were found for parental care dimensions (paternal and maternal). This indicates that higher reports on these parenting dimensions of care and overprotection generally corresponded to higher self-esteem in the adolescents. However, the strength of all these relationships was weak across all dimensions. While examining the interrelationships of the PBI dimensions, fathers' and mothers' care were found to be strongly associated ($\rho = .73$, $p < .01$), suggesting a significant link between perceptions of maternal and paternal care. Similarly, two overprotection dimensions between paternal and maternal aspects showed a significant moderate association ($\rho = .493$, $p < .01$) (Table 4).

Table 4. Correlations between Self-esteem and PBI Dimensions

	Self-esteem	Father's Overprotection	Mother's Overprotection	Father's Care	Mother's Care
Self-esteem		.127*	.143*	.123*	.136*
Father's Overprotection			.493**	.094	-.022
Mother's Overprotection				.139*	.128*
Father's Care					.735**
Mother's Care					

Note. * $p < .05$; ** $p < .01$; Spearman's ρ

A two-step non-parametric ranked hierarchical multiple regression analysis was conducted using ranked variables. All continuous study variables were rank-transformed prior to analysis, whereas gender and SES were retained as categorical variables. In Step 1, neither gender nor SES accounted for a significant amount of variance in ranked self-esteem, and neither was a significant individual predictor of self-esteem [Model 1: $R^2 = .002$, $\Delta F(2, 251) = .22$, $p = .81$]. In Step 2, adding PBI dimensions significantly improved the model, increasing explained variance. The final model explained 4.6% of the variance in self-esteem [Model 2: $R^2 = .048$, $\Delta R^2 = .046$, $\Delta F(4, 247) = 3.01$, $p = .02$].

Table 5. Nonparametric Rank-Based Multiple Regression Predicting Self-Esteem

Model	Predictor	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
1	(Constant)	117.197	28.215		4.154	< .001
	Gender	6.078	9.264	.042	.656	.512
	SES	.345	7.709	.003	.045	.964
2	(Constant)	66.431	31.681		2.097	.037
	Gender	13.440	9.826	.092	1.368	.173
	SES	-.497	7.719	-.004	-.064	.949
	Mother's care	.138	.096	.138	1.445	.150
	Father's care	.031	.094	.031	.333	.740
	Mother's Overprotection	.079	.072	.079	1.095	.274
	Father's Overprotection	.080	.073	.080	1.107	.270

Note. $R^2 = .002$, $F(2, 251) = .215$ for Step-1; $\Delta R^2 = .046$, $R^2 = .048$, $F(6, 247) = 2.078$ for Step-2 ($p < .001$)

This study found that adolescents' self-esteem was relatively similar across genders, which is contrary to previous research (Kling et al., 1999; Bleidorn et al., 2016). The non-significant result suggests that this pattern may not reflect a true gender difference in self-esteem among adolescents and should be interpreted cautiously. This can be explained using "attachment theory" (Bowlby, 1969, 1973, 1980) and "bioecological system theory" (Bronfenbrenner & Morris, 2006). These theories argue that the quality of attachment and

interactions within the environment (domestic, social, and/or personal experiences) influence self-esteem, regardless of gender, and that these influences may not differ significantly across genders.

Although the existing literature has found higher parental overprotection towards females, this study found that males were more frequently the recipients of parental overprotection (Opsenica-Kostić & Stefanović-Stanojević, 2010). According to Brown (2016), in both Western and non-Western cultures, parents want their sons to be financially solvent and the family's breadwinners (trained to nurture and care for other family members), which might explain why they are raised strictly and protectively. Ecological Systems Theory (Bronfenbrenner, 1979) posits that parents often apply comparable levels of behavioral control and overprotection for both sons and daughters if they face similar ecosystems (academic pressures, safety concerns, or parental expectations).

Nevertheless, the care dimension for both parents showed a significant gender difference, with females reported to receive higher levels of paternal and maternal care than males, which aligns with the current literature but is not universally supported. A recent study found that rapid urbanization and modernization in the Dhaka Division have made gender roles more flexible and altered parental practices (Jasmine et al., 2025). Recent empirical studies found that the availability of labor opportunities for women, increases in women's education and empowerment have weakened son preference and the value of daughters, which aligns with the "Gender-Convergence Theory" (Eagly & Wood, 2012; Asadullah et al., 2021; Kazenin, 2024). Furthermore, the family dynamics, gender norms, or interaction within same-gender versus cross-gender dyads (e.g., father-son vs. mother-son), a gender-based model of parental bonding is untenable (Endendijk et al., 2018). Therefore, the available literature on parental bonding shows highly inconsistent findings across both care and overprotection dimensions. While some research findings indicate that daughters universally perceive greater or equivalent care than sons, and sons report higher or equivalent levels of overprotection than daughters, other literature presents the opposite.

The study found that self-esteem, both maternal and paternal care, and paternal overprotection was similar across socioeconomic status, which suggests that adolescent perceptions of parental bonding may not be determined solely by socioeconomic resources. The study found similarity in parental practices and self-esteem across socioeconomic groups, which are not wholly dependent on socioeconomic status but rather on supportive characteristics of both children and family (Bradley & Corwyn, 2002). However, a significant difference was found for maternal overprotection across socioeconomic levels, which may reflect the greater sensitivity of maternal caregiving behaviors to socioeconomic circumstances. In the current literature, socioeconomic background has been found to correlate with maternal overprotection; a study in India also observed a similar pattern (Komala & Bhaskar, 2016). The "Family Stress Model" posits that lower-SES mothers bear intense domestic labor and chronic financial stress, which makes it harder to display patient emotion; conversely, higher-SES mothers with better living conditions and financial

security actively engage in emotional bonding and respond to their adolescents (Conger et al., 1994, 2010).

Parental care dimensions showed very weak positive associations with adolescents' self-esteem in the present study. This finding is consistent with research emphasizing the role of parental warmth and responsiveness in adolescents' self-worth (Pérez-Fuentes et al., 2019; Orth & Robins, 2014, 2022). However, the study yields a very weak positive association between self-esteem and both maternal and paternal overprotection. Although this pattern differs from findings in some Western developmental literature, where overprotective parenting has generally been associated with poorer psychological adjustment and lower self-esteem (Segrin et al., 2013; de Roo et al., 2022; Bruysters & Pilkington, 2023). One possible explanation is that adolescents may interpret or experience parental control and protection differently depending on their developmental and sociocultural context, and it may alter the impact of overprotection (Selçuk et al., 2026). In the present sample, overprotective behaviors may therefore have been perceived not exclusively as restrictions on autonomy but also as expressions of parental involvement, concern, love, protection or investment (Kakihara & Tilton-Weaver, 2009; Su, 2025). However, these interpretations remain restricted in our sample since the correlation in our study was very weak.

The study found that none of the parental bonding dimensions from either parent, along with SES and gender, were found to be significant predictors of adolescents' self-esteem in this study, contrary to previous research (Buri, 1989; Keizer et al., 2019). They may fail to predict significantly due to multicollinearity-induced variance inflation, making it difficult to isolate the unique contribution of each predictor (Kim, 2019; Grewal et al., 2004). These findings suggest that perceived parental bonding may have a limited influence on adolescents' self-esteem in the present sample. Therefore, self-esteem among Bangladeshi adolescents may be influenced more strongly by factors other than parental bonding, previous research suggests that adolescents' self-esteem is also influenced by peer relationships, academic experiences, personality characteristics, social support, and cultural influences (Madarasova Geckova et al., 2010; Gorrese & Ruggieri, 2013; Xin et al., 2019; Wagner et al., 2024).

An interesting congruence in perceived maternal and paternal bonding practices was also observed in this study. Thus, participants experience a unified parental environment. A previous study found that overprotection in one parent was significantly associated with overprotection in the other (Winsler et al., 2005). Feinberg's Coparenting Alliance Framework (2003) views child-rearing as a unified family front in which mothers and fathers actively communicate and align their parenting strategies for upbringing.

The key limitations of the study were its cross-sectional design and the use of a purposive sampling technique, which may have caused selection bias. Although it was necessary to control for parental bonding variables and to focus deeply on the specific

psychological dynamics of adolescents living with both parents, excluding participants from single-parent households and those who had lost a parent limited the generalizability of the study. Another limitation is that this study did not account for family structure or the type of educational institution. The participants were selected from different families, so their upbringing and parental temperament varied; and the impact of institutions' environments, teachers', and peers' influence on adolescents was not considered. Studies found that school belongingness, healthy peer relationships, teachers' support and encouragement, and their readiness to accept students' opinions influenced adolescents' self-esteem (Meškauskienė, 2018; Long et al., 2021). Another limitation of the study was self-report bias. Since data were collected in classroom settings at schools and colleges, participants may intentionally respond positively to match others or look better than others. The socioeconomic imbalance can be another important variable to examine to provide a more holistic picture, as the study sample shows middle-class dominance. Lastly, the sample size and subsequent choice of statistical analyses constrain the generalizability of the results, reflecting an important limitation of the study.

Future research should use a mixed-methods approach or a longitudinal study to gain deeper insights into how adolescents develop self-esteem, clarifying its intensity and related aspects. A qualitative inquiry into multiple children from the same family and their birth order would also help better understand adolescents' parental bonding dynamics and the correlation between the parental bonding and self-esteem.

Authors' Contributions

Irfat Sharmin Humayra: Conceptualization, Methodology, Formal Analysis and Investigation, Resources, Writing – Original Draft Preparation, Writing – Review & Editing; **Sanemoon Fatema Camelia:** Formal Analysis and Investigation, Writing – Original Draft Preparation, Writing – Review & Editing, Supervision.

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