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Parental Attachment and Disruptive Behavior in Adolescents: The Mediating Role of Self-Esteem

El Apego Parental y el Comportamiento Problemático en los adolescentes: el papel mediador de la autoestima

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Abstract. *Objective.* This study aimed to explore the role of self-esteem as a mediator in the relationship between parental attachment and disruptive behavior. *Method.* A total of 300 adolescents aged 12 to 17 years were conveniently selected from four secondary schools in Chittagong, Bangladesh to carry out the present study. Three psychological scales were used to collect data in this study. *Results.* The results of the present study revealed that 42.33% of the adolescents showed moderate levels of disruptive behavior. Adolescents with disruptive behavior had significantly lower levels of attachment than their non-disruptive counterparts. Self-esteem was a mediator of the relationship between maternal attachment and disruptive behavior.

Keywords. Adolescents, attachment theory, disruptive behavior, parental attachment, self-esteem

Resumen. *Objetivo.* El objetivo de este estudio era analizar el papel de la autoestima como mediador en la relación entre el apego parental y el comportamiento disruptivo. *Método.* Para realizar el presente estudio, se seleccionó por conveniencia a un total de 300 adolescentes de entre 12 y 17 años de cuatro centros de enseñanza secundaria de Chittagong, Bangladesh. Se utilizaron tres escalas psicológicas para recopilar datos en este estudio. *Resultados.* Los resultados del presente estudio revelaron que el 42.33 % de los adolescentes mostraba niveles moderados de comportamiento disruptivo. Los adolescentes con comportamiento disruptivo presentaban niveles de apego significativamente más bajos que sus homólogos sin comportamiento disruptivo. La autoestima actuó como mediador de la relación entre el apego materno y el comportamiento disruptivo.

Palabras clave. Adolescentes, teoría del apego, comportamiento disruptivo, apego parental, autoestima



Introduction

Disruptive behavior, an inappropriate behavior, is often accompanied by a variety of behavioral and psychological symptoms that interfere with one's life activities. It is a behavior inconsistent with expectations that clearly inhibits one's development or disturbs others (Aasen et al., 2002), often characterized by disobedience, aggression, destructiveness, attention problems, impulsivity, hyperactivity, and delinquent behavior (Achenbach & Edelbrock, 1978), or is a behavior that chronically threatens and intimidates others or violates social norms (American Psychological Association, n.d.). This behavior is very common among children and adolescents and varies from culture to culture (Araban et al., 2020; Duesund & Oedegaard, 2018; Fontana, 1995; Mann et al., 1992; Mueller et al., 1995; Sondejker et al., 2005). Disruptive behavior among adolescents has increased significantly over the last few decades worldwide (Barkley et al., 2002; Maughan et al., 2005). About 2-6% of adolescents in the general population of society have some level of disruptive behavior (Semke et al., 2010).

Adolescents in Bangladesh are a large population group undergoing rapid socio-cultural change. There are demographic differences in the rates of disruptive behavior among Bangladeshi adolescents. For example, 16% of adolescents reported being involved in physical fights, while 56% reported being physically assaulted (Hasan et al., 2022). Urban and unsupervised adolescents are more vulnerable to aggressive tendencies (Verma et al., 2021). 70% of adolescents are urban and belong to single-parent families, and 80% of adolescents' families have a monthly income of more than 10,000 taka (Syed et al., 2012). Although there is research on adolescent disruptive behavior across the cultures mentioned above, there is very little research on it or more or less scattered research in Bangladesh. Disruptive behavior among Bangladeshi adolescents is a concern today as this population is increasing in the total population and has been

shown to be particularly prone to disruptive behavior. More than one-fifth of the total population of Bangladesh with an adolescent population between 10 and 19 years of age of about 36 million (Bangladesh Bureau of Statistics, 2016) demands any significant research in this direction. Consequently, a survey was conducted in Bangladesh to measure behavioral and emotional problems among Bangladeshi adolescents (Al-Mamun et al., 2024). There are many social factors behind the disruptive behavior of adolescents in Bangladesh, such as rapid urbanization and slums, excessive study pressure and educational deficiencies, family instability and weak supervision, strict guardianship, rigid gender stereotypes and patriarchy, the spread of digital technology and its uncontrolled use, and the flow of illegal drugs, limited personal freedom and lack of emotional support (Khatun & Azad, 2026; Khatun et al., 2025; Tuli & Habib, 2026). Therefore, it was necessary to conduct this study to find out whether disruptive behavior exists among adolescents in Bangladesh in their own Bangladeshi culture.

Adolescents' disruptive behavior can best be explained by their attachment to parents. Parental attachment is a fundamental bond between a child and a parent that is formed to keep a child safe, secure, and protected (Benoit, 2004; Bowlby, 1982). Attachment theory (Bowlby, 1973; 1982) proposes that a child's emotional and social development is profoundly shaped by their relationship with their primary caregivers, especially their parents. Attachment theory initially positioned fathers as a secondary attachment figure (Hazen et al., 2010), but recent research has found a remarkably important relationship between fathers and children (Brown et al., 2012; de Minzi, 2010; George et al., 2010; Grossmann et al., 2002; Hazen et al., 2010). Adolescents who receive a lot of affection from their fathers develop a stronger bond, which enables them to explore their environment more freely, develop independence, self-identity, and a positive view of the outside world. As a result, they are also able to regulate their children's emotions, which can help

reduce any disruptive behavior (Rosenberg & Wilcox, 2006). Thus, the attachment of both parents is crucial in explaining a child's behavior. Children who are securely attached to both of their parents develop more positive social-emotional skills, cognitive functioning, and physical and mental health (Ranson & Urichuk, 2008). On the other hand, children who are insecurely attached to their parents are more likely to have feelings of alienation, increased instrumental aggression, externalizing behavior problems, low self-efficacy and loneliness, problems with academic performance and executive functioning skills, and problems with self-regulations (de Minzi, 2010; Madigan et al., 2007; McElwain et al., 2003; von der Lippe et al., 2010). A secure, trusting, and mutually understanding parent-child relationship is associated with positive behavioral outcomes in adolescents (Papini & Roggman, 1992), while an insecure parent-child attachment is associated with suicidality, substance abuse, aggressive and delinquent behavior, and internalizing and externalizing behaviors in adolescents (Lessard, 1994; Lessard & Moretti, 1998; Moretti et al., 2004; Parker & Benson, 2004). A meta-analytic study conducted by researchers found that adolescents' attachment to their parents is associated with lower levels of contemporary and later aggression and delinquency (Fearon et al., 2010; Hoeve et al., 2012).

In addition to attachment theories, there are other theoretical frameworks that explain behavioral vulnerabilities and disruptive behaviors in adolescents. According to social control theory (Hirschi, 1969), individuals are less likely to commit disruptive behavior when they have strong relationships with others, goals for the future, positive involvement in various activities, and beliefs in fairness and justice. When these social ties weaken, the risk of disordered behavior increases. On the other hand, biological theories provide a broad outline of recent research on physiological, neurological, genetic factors, and specific neurotransmitter systems, and suggest that these are important predictors of disruptive behavior problems in adolescents, which

serve as a major driver of externalizing mental disorders (Stadler et al., 2010).

A great deal of research has been conducted around the world on the relationship between parental attachment and adolescent disruptive or externalizing behavior. A significant association between insecure-hostile parental attachment and disruptive behavior or behavioral and emotional problems among adolescents has been found across countries, for example, French adolescents (Therriault et al., 2019), Indonesian adolescents (Sarfika et al., 2023), Chinese adolescents (Sun et al., 2022), Italian adolescents (Bizzi et al., 2016), and Dutch adolescents (de Vries et al., 2016). Some studies have found parental differences on measures of adolescent disruptive behavior, with a significant presence of disorganized attachment toward fathers compared to mothers (e.g., Bizzi et al., 2016; Hoeve et al., 2012). There are also studies around the world that have found a link between attachment insecurity with poor parental bonds and increased patterns of externalizing behavior (e.g., Allen et al., 2007; Huang et al., 2016; Lakhtdir et al., 2020; Lucktong et al., 2017; Savage, 2014; Shehzadi et al., 2018; Stacy & Conn, 2023). A longitudinal study found that higher levels of parental acceptance were associated with lower levels of disruptive behavior symptoms reported by adolescents, and that the strength of these relationships did not differ by grade or gender (Garthe et al., 2015). No research was found in this area of research in Bangladesh on online platforms, or if there was, it was beyond our scope. Therefore, based on previous research, a study was needed to find out whether strong or weak attachment of adolescents to their parents causes disordered behavior in them.

Self-esteem is one of the fundamental predictors of human behavior, especially in social relationships (Harris & Orth, 2020; Leary & Baumeister, 2000), or in individual processing of self-worth (Brown, 1998; Orth et al., 2018). Studies have found a positive association between self-esteem and attachment to parents, with a stronger association in attach-

ment to parents in general rather than attachment to mother or father (Pinquart, 2023). Adolescent self-esteem varies positively with perceived quality of parental attachment (Keizer et al., 2019). Parental attachment was found to be a significant predictor of adolescent self-esteem (Beigi et al., 2022; Pinto et al., 2015; Shen et al., 2021). Positive parental attachment provides a sense of security for adolescents and significantly increases their self-esteem levels (Sim & Yow, 2011). A link between self-esteem and disruptive behavior, particularly a link between externalizing behavior and low self-esteem, has been well established in empirical research worldwide (e.g., Barry et al., 2007; Boden et al., 2007; Donnellan et al., 2005; Irvine et al., 2023; Trzesniewski et al., 2006). There are studies where parental attachment has been shown to be associated with adolescents' self-esteem, and self-esteem has been shown to mediate the relationship between parental attachment and adolescents' externalizing behavior (e.g., Arbona & Power, 2003; de Vries et al., 2016; Gamble & Roberts, 2005; Gomez & McLaren, 2007; Karunarathne, 2023; Keizer et al., 2019; Lee & Hankin, 2009; McCormick & Kennedy, 1994; Wilkinson, 2004). There is a lack of integrated research on parental attachment, self-esteem, and disruptive behavior in Bangladesh. Therefore, the current study was motivated to conduct a study exploring the role of self-esteem as a mediator in the relationship between parental attachment and disruptive behavior.

Based on the above research evidence, the following hypotheses were formulated for the current study.

H1: There will be disruptive behavior among adolescents in Bangladesh.

H2: Adolescents with weak bonds with their parents will be more likely to exhibit more disruptive behavior than adolescents with strong bonds with their parents.

H3: Self-esteem will act as an effective mediator in the relationship between adolescents' attachment to their parents and their disruptive behavior.

Method

A cross-sectional survey research design was followed for the present study. It is essentially a type of observational study design, where the researcher measures the outcome and exposure of the study participants at the same time.

Participants

The sample size of the study was determined using Raosoft sample size calculator (Raosoft, 2004), where 95% confidence interval, 5% margin of error and 0.5 population proportion were considered. The minimum recommended study sample size by this calculator was 385. Therefore, we selected 400 adolescents to participate in the study who were provided the research questionnaire. But, unfortunately due to questionnaire incompleteness, missing questionnaires and non-returned questionnaires, finally we had to accept 300 data (acceptance rate was 75%). Study participants were all high school students (6th to 10th grade) who were selected using a convenience sampling method from four secondary schools in Chittagong, Bangladesh. Chittagong, the second largest commercial city in Bangladesh, embodies a distinct heritage as well as severe social constraints such as the dominance of 'teen/teenage gangs', political patronage, drugs and greater proximity, which in most cases has given rise to a new area of disordered behavior among the city's adolescents. Of the four high schools considered in the study, two were located in urban areas and the other two were in rural areas. Most of the participants in the study were of middle socioeconomic status (SES). The age range of participants was 12 to 17 years ($M=14.94$, $SD=1.33$). In the total data, the participation of boys and girls was equal (50% for each group). The overall distribution of participants is presented in Table 1 below.

Instruments

Four measures were considered in the present study, three of which were scales and one was the 'Personal Information Form' (PIF).

Table 1. Distribution of Participants by Gender and Age ($n=300$)

Age (years)	Boys ($n=150$)		Girls ($n=150$)		Total	
	n	%	n	%	n	%
12	8	5.3	4	2.7	12	4.0
13	22	14.7	6	4.0	28	9.3
14	50	33.3	29	19.3	79	26.3
15	43	28.7	23	15.3	66	22.0
16	23	15.3	53	35.3	76	25.3
17	4	2.7	35	23.3	39	13.0
Total	150	50.0	150	50.0	300	100.0

Bangla Version of Beck Disruptive Behavior Inventory (BDBI-B)

The Bangla version of the Beck disruptive behavior inventory (Uddin et al., 2011), originally developed by Beck and colleagues (Beck et al., 2001), was used to measure disruptive behavior among Bangladeshi adolescents. It is a self-administered 4-point Likert-type scale, ranging from '0' (never) to '3' (always). It consists of 20 items with no negative items. The sum of the 20 items indicates a particular participant's total disruptive behavior score. The scale's possible minimum and maximum scores range from 0 and 60, respectively, with higher scores indicating higher disruptive behavior. It showed high internal consistency reliability ($\alpha = 0.79$). It also showed convergent validity with the Bangla Beck Anger Inventory ($r = .58, p < .01$) and discriminant validity with the Bangla Self-concept Scale ($r = -.38, p < .01$).

Bangla Version of Inventory of Parental and Peer Attachment (IPPA-B)

The Bangla version of the revised version of the IPPA (Shayela & Islam, 2018) was used to measure parental attachment among adolescent participants in the present study. The original IPPA was developed by Armsden and Greenberg (1987) and revised by Gullone and Robinson (2005). It has two versions,

including Parent and Peer Attachment (original version); and Mother, Father, and Peer Attachment (revised version). The original version contained 28 items for parent attachment and 25 items for peer attachment, yielding two attachment scores. The revised version consists of 25 items in each category of mother, father, and peer, yielding three attachment scores. In the revised version, the 'trust' subscale consists of item no. 1, 2, 3, 4, 9, 12, 13, 20, 21 and 22, the 'communication' subscale consists of item no. 5, 6, 7, 14, 15, 16, 19, 24 and 25 and the 'alienation' subscale consists of item no. 8, 10, 11, 17, 18 and 23. It is a self-report questionnaire with five point Likert-scale responses ranging from 1 (never true) to 5 (always true). It consists of 15 positive items and 10 negative items with reverse scoring for negative items. The sum of all item scores is an individual's total score with higher scores indicating higher attachment.

In the present study, we considered attachment items for both mothers and fathers. We did not consider peer attachment items in the study because it was not in line with our study objectives. From a psychometric perspective, the three subscales of the revised IPPA showed good reliability indices, with Cronbach's alpha ranging from .66 to .86. However, the reliability index of the alienation subscale (.66) was somewhat weak but acceptable (Gullone & Ro-

binson, 2005; Nunnally & Bernstein, 1994). It also showed a good convergent validity. The original version of the IPPA was also shown to have convergent validity, as it was significantly correlated with well-being scores (Armsden & Greenberg, 1987). The three subscales of the Bangla version of the revised IPPA showed good internal consistency reliability with Cronbach alphas ranging from .81 to .94 (Shayela & Islam, 2018). The Bangla IPPA scale had a temporal stability as measured by a test-retest reliability over a two-week period ($r=.502, p<.01$).

Bangla Version of Rosenberg Self-esteem Scale (RSES-B)

The Bangla version of the Self-Esteem Scale, RSES-B (Ilyas, 2002), originally developed by Rosenberg (2015), was used to measure the self-esteem of the participants in the present study. It is a 10-item self-report measure, with a Likert-type format with 4 response options, namely strongly agree (3), agree (2), disagree (1) and strongly disagree (0). The scale's total score range is 0–30, with higher scores representing higher self-esteem. A score between 15 and 25 indicates normal self-esteem and a score below 15 indicates low self-esteem. Five items of the scale assess positive feelings about oneself (items 1, 2, 4, 6 and 7); and five other items assess negative feelings about oneself (items 3, 5, 8, 9 and 10). A reverse scoring is applied to each negative item (strongly agree=0, agree=1, disagree=2 and strongly disagree=3). Test-retest correlations (ranging from .82 to .88) and Cronbach alphas (ranging from .77 to .88) have been found for the RSES-B across samples (Ilyas, 2002).

Personal Information Form (PIF)

A personal information form was used along with the questionnaire to collect some socio-demographic information about the participants like gender, age, class/grades, etc.

Data Collection Procedure

Data were collected from students of four high schools in Chittagong district of Bangladesh. The process of data collection was initiated by obtaining

permission from each school authority. After that, an informed consent was ensured for each participant. In fact, informed consent was obtained from both parents and students. However, since the participants were under 18 years of age (12–17 years), as per research ethics guidelines, consent was obtained first from their parents and then from the students. Respondents as well as their parents were told the sole purpose of the investigation and were assured that this was purely an academic study and that their responses would be kept confidential. Then the questionnaires were administered to the respondents and requested a silent reading at the instruction provided with the questionnaires before starting to answer. They were requested not to omit any item in the questionnaires and were encouraged to answer all the items included in the questionnaires. They were instructed that there is no right or wrong answer to any item. All possible clarifications were made to the problems if faced by the respondents. All data were collected in school settings, and no opportunity was provided for students who were interested in completing the questionnaire from their home settings. After completing of their tasks, they were given thanks for their sincere co-operation.

Data Analysis

A statistical analysis software, namely, 'Statistical Package Program for Social Sciences' (SPSS, version-25) was used to analyze the data in the present study. Descriptive statistics, significance tests, correlation and regression analyses, and mediational analyses were performed on the present data.

Ethics

This study was approved by the Ethical Review Board of the Department of Psychology, University of Chittagong, Bangladesh (Reference No: ERB-PSY-CU-13-2021). We hereby declare that all procedures followed in the study were in accordance with the ethical standards of the Helsinki Declaration Act, 1975.

Results

Prior to the final results of the study, some preliminary data screening analyses were performed to ensure that the current raw data were suitable for the final analysis. First, we looked for missing values, and we found no missing values in the data set. Second, a 'Mahalanobis distance test' was performed to see if there were any outliers in the data set. We found no outliers in the data set, confirming the initial number of raw data as final data ($n=300$). Third, the normality of the data was measured by the standardized regression residuals, where the standardized residuals were between -3.24 and 3.38, and the p values were for the Kolmogorov-Smirnov test (0.200, $p>.05$) and the Shapiro-Wilk test (0.753, $p>.05$). Fourth, multicollinearity among the main target variables considered in the study was measured by a regression model. The variance inflation factor (VIF) values for each predictor in the regression model were less than 3 (ranging from 1.03 to 1.51), indicating that the predictors were not highly correlated with each other. The aforementioned analyses, including outlier and normality tests, clearly showed that the present data were suitable for conducting any parametric tests.

Acceptable Cronbach alphas (values greater than .70) were found for the scales considered in the study, except for the Parental Attachment Scale- Mother (Table 2). The Cronbach alpha for this scale was .63, which was below the acceptable value ($\alpha=.70$), but it was acceptable as reliable as suggested by many researchers (e.g., Haynes et al., 1995). Thus, all the

scales were found to be reliable with respect to the data of the present study. Participants' mean scores on each scale were within the expected range and not in the very low or upper range. The standard deviation of the scales indicated that the scores did not have a high deviation from their means (Table 2). The skewness and kurtosis values of the scales ranged from +1.96 to -1.96, indicating that the data for each scale were normally distributed.

In order to know which participants did or did not have disruptive behavior, we went through a standard calculation procedure proposed by Beck and his colleagues (Beck et al., 2005). First, the participant's initial raw score on the BDBI (range from 0 to 18) was converted into a T-score considering three age ranges (7–10, 11–14 and 15–18 years) and two gender categories (male and female). A severity level was then calculated based on the T-score. Based on the interpretation given by Beck et al. (2005), a T-score value less than or equal to 55 was considered 'average', and a T-score value above 55 to 100 was considered 'moderate to severe' disruptive behavior. Among the total participants, 127 participants (42.33%) had T-score values above 55, indicating that they had moderate to severe levels of disruptive behavior, while 173 participants (57.67%) had T-score values less than or equal to 55, indicating that they had no disruptive behavior (Table 3). Among the 127 participants with disruptive behavior, boys were 68 (53.5%) and girls 59 (46.5%). Disruptive behavior varied by gender ($t(125)=-1.90$, $tp=.06$, $d=-.337$) with lower values in boys ($M=12.97$, $SD=1.07$) than girls ($M=13.37$, $SD=1.33$).

An independent samples t -test with effect size was conducted to determine whether attachment

Table 2. Cronbach Alphas and Descriptive Statistics of the Scales Used in the Study ($N=300$)

Scale	Items	α	M (Min. – Max.)	SD	Skew. (SE)	Kurt. (SE)
Disruptive behavior	20	.73	9.40 (0-18)	4.36	-0.78 (.14)	-0.38 (.28)
Attachment (Mother)	25	.63	85.49 (59-119)	8.73	-0.30 (.14)	0.64 (.28)
Attachment (Father)	25	.72	83.16 (39-113)	10.34	-0.42 (.14)	1.61 (.28)
Self-esteem	10	.92	19.10 (10-28)	5.43	0.01 (.14)	-1.21 (.28)

to parents varied based on the type of behavior (disruptive vs. non-disruptive). Since we used the IPPA scale to measure participants' attachment to their parents in this study, participants' attachment figures were identified through their IPPA responses. Overall attachment was considered along with three other attachment subscales (e.g., trust, communication, and alienation) for fathers and mothers separately. Regarding overall attachment to mothers, adolescents with disruptive behavior had lower attachment scores ($M=79.73$, $SD=7.69$) than their non-disruptive counterparts

($M=89.73$, $SD=6.83$), $t(298)=11.89$, $p<.001$, $d=1.39$ (Table 4). A similar pattern was found for overall attachment to fathers ($t(298)=13.57$, $p<.001$, $d=1.59$), where the disruptive behavior group had lower attachment scores ($M=75.72$, $SD=8.56$) than their non-disruptive counterparts ($M=88.63$, $SD=7.83$). Not only for overall attachment to mother and father, but also for every other attachment, adolescents with disruptive behavior had significantly lower attachment scores than adolescents with non-disruptive behavior (Table 4). Thus, the result clearly indicates that poor paren-

Table 3. Disruptive and Non-Disruptive Behavior with Gender Differences ($N=300$)

Criteria for selecting disruptive behavior ^a	Behavior	Gender	<i>n</i>	<i>M</i> (<i>SD</i>)	Significance test	Cohen's <i>d</i>
T-score ≤ 55	Non-disruptive	Boys	82	5.32 (3.91)	$t(171) = -4.69^{***}$	-.714
		Girls	91	7.84 (3.14)	$t(125) = -1.90^*$	-.337
T-score > 55	Disruptive	Boys	68	12.97 (1.07)		
		Girls	59	13.37 (1.33)		

Note. ^a As suggested by Beck et al. (2005)

*** $p<.001$; * $p=.06$

Table 4. Differences in Parental Attachment Scores by Behavior Type

Aspect of attachment	Non-disruptive ($n=173$)	Disruptive ($n=127$)	$t(298)$	Cohen's <i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
Mother's attachment (overall)	89.73 (6.83)	79.73 (7.69)	11.89***	1.39
Mother's trust	40.93 (4.06)	36.57 (4.53)	8.74***	1.02
Mother's communication	35.78 (4.05)	31.38 (4.32)	9.05***	1.06
Mother's alienation	13.02 (4.26)	11.76 (3.64)	2.68**	.31
Father's attachment (overall)	88.63 (7.83)	75.72 (8.56)	13.57***	1.59
Father's trust	40.41 (4.65)	35.10 (5.48)	9.05***	1.06
Father's communication	34.02 (3.86)	28.20 (4.82)	11.57***	1.35
Father's alienation	14.20 (4.46)	12.41 (3.88)	3.63***	.43

*** $p<.001$, ** $p<.01$

tal attachment led to disruptive behavior among the adolescents in this study.

A correlational analysis was conducted to find out how adolescent disruptive behavior was related to their self-esteem and their attachment to parents. If we look at Table 5, we did not find any correlation between behavior scores by non-disruptive adolescents with their various attachment scores and their self-esteem scores. But, significant correlations were found between behavior scores with different attachment scores and self-esteem scores adopted by adolescents with disruptive behavior. A significant negative correlation was found between adolescents' disruptive behavior and their attachment to both their mothers ($r = -.36, p < .01$) and fathers ($r = -.41, p < .01$). This finding indicates that adolescents who had lower levels of attachment to their parents had higher levels of disruptive behavior. Not only the overall attachment score, but also the other attachment subscale scores were significantly corre-

lated with adolescent disruptive behavior (Table 5). Disruptive behavior was significantly negatively related to self-esteem ($r = -.28, p < .01$), indicating that adolescents who had higher levels of disruptive behavior had lower self-esteem.

A regression analysis was conducted to find out whether disruptive behavior could be explained by parental attachment and self-esteem. If we look at Table 6, both paternal and maternal attachment and self-esteem significantly explained the variance in adolescent disruptive behavior ($R^2 = .32, F(3,123) = 19.10, p < .001$). Disruptive behavior was significantly explained by mothers' attachment ($\beta = -.31, t = 3.96, p < .001$), fathers' attachment ($\beta = -.39, t = 5.24, p < .001$), and self-esteem ($\beta = -.16, t = 1.99, p < .05$), independently. Thus, mother attachment, father attachment, and self-esteem were found to be significant predictors in explaining adolescent disruptive behavior. In addition, partial and part correlations also showed that each predictor was significantly correlated

Table 5. Relationship between Adolescents' Disruptive Behavior and Their Self-Esteem and Attachment to Parents

	Disruptive behavior scores by different data	
	Non-disruptive data r ($n=173$)	Disruptive data r ($n=127$)
Mother's attachment (overall)	-.07	-.36**
Mother's trust	-.13	-.32**
Mother's communication	-.12	-.27**
Mother's alienation	.13	-.05
Father's attachment (overall)	-.14	-.41**
Father's trust	-.10	-.30**
Father's communication	-.13	-.35**
Father's alienation	-.03	-.06
Self-esteem	.04	-.28**

Note. **Correlation is significant at the 0.01 levels (2-tailed)

with disruptive behavior when controlling for other predictors (Table 6).

The results in Table 6 supported us to conduct mediation analysis and confirm our third hypothesis. We then conducted a mediation analysis with Process Macro version 4.0 with mediation model number 4 (Hayes, 2013; Igartua & Hayes, 2021) and a percentage bootstrap estimation with 5000 samples and 95% confidence intervals (Shrout & Bolger, 2002). If we look at Figure 1(a) below, the three direct effects of maternal attachment on self-esteem (path a), self-esteem on disruptive behavior (path b), and maternal attachment on disruptive behavior (path c') were statistically significant. Also, the total effect of maternal attachment on disruptive behavior (path c) was statistically significant. Maternal attachment was not only a significant predictor of disruptive behavior with the inclusion of the mediator 'self-esteem' (direct effect, c') in the model, but also the significant predictor of disruptive behavior without the inclusion of the mediator 'self-esteem' (total effect, c) in the model. The indirect effect of maternal attachment on disruptive behavior through self-esteem (path ab) was also statistically significant ($b = -.05$, $se = .01$, 95% CI $(-.02, -.01)$). Since the null of zero fell outside the lower and upper bounds of the 95%

confidence interval, the indirect effect was assumed to be non-zero in the model. These results indicate a partial mediating effect of self-esteem on the relationship between maternal attachment and adolescent disruptive behavior.

On the other hand, if we look at Figure 1(b), the direct effect of paternal attachment on disruptive behavior with the inclusion of self-esteem (path c') and the total effect of paternal attachment without including self-esteem (path c) were statistically significant. However, the indirect effect of paternal attachment on disruptive behavior via self-esteem (path ab) was not found to be statistically significant in the model ($b = -.02$, $se = .02$, 95% CI $(-.07, .03)$). The 95% confidence interval for the indirect effect $(-.02)$ included zero (i.e., the interval from $-.07$ to $.03$ with zero), indicating that the indirect effect was not statistically significant.

It is clear from Figure 1 that attachment to the mother or insecure maternal attachment influences both self-esteem and disruptive behavior. This result highlights the importance of maternal attachment without diminishing the role of paternal attachment. However, attachment to the father does not appear to influence self-esteem, and it may not influence disruptive behavior through any mediating pathways.

Table 6. Regression of Disruptive Behavior on Parental Attachment and Self-Esteem ($N=127$)

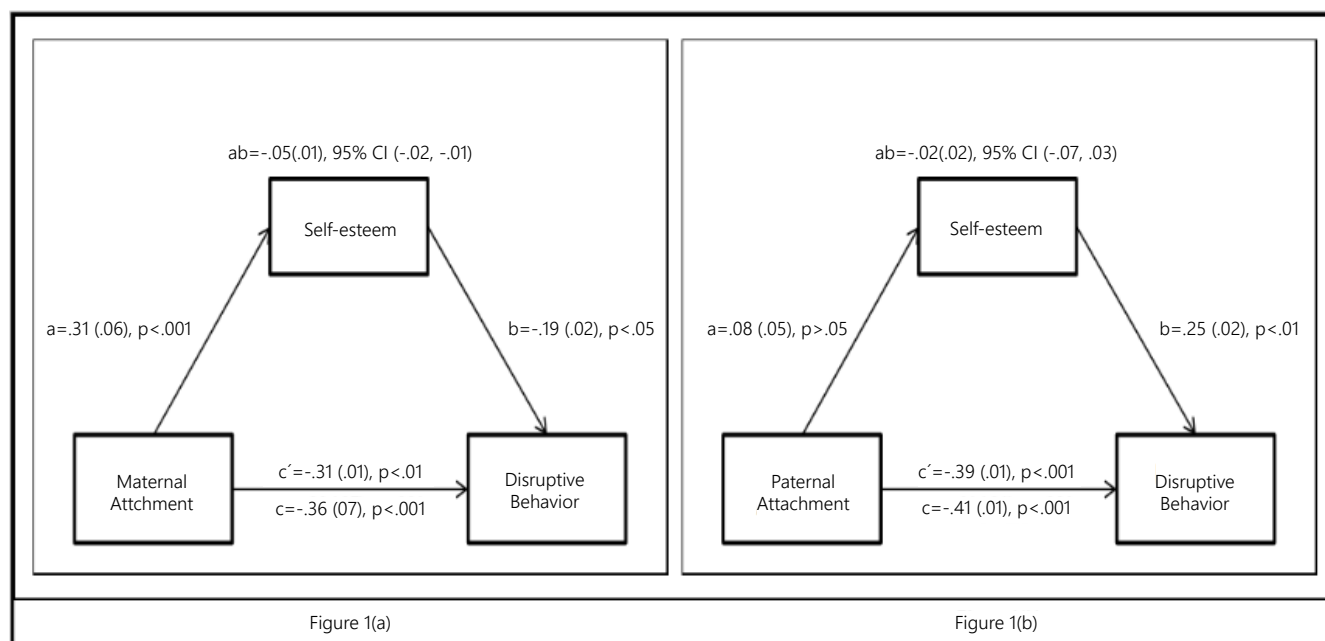
Model ^a	Unstandardized Coefficients		Standardized Coefficients β	t	Sig.	Correlations		
	B	SE				Zero-order	Partial	Part
Constant	21.85	1.22		17.98***	.000			
Mother attachment	-.05	.01	-.31	-3.96***	.000	-.364	-.336	-.295
Father attachment	-.06	.01	-.39	-5.24***	.000	-.411	-.427	-.390
Self-esteem	-.03	.02	-.16	-1.99*	.049	-.283	-.177	-.148

Note. Criterion: Disruptive behavior

^a= Model explained variance: $R^2 = .32$, $F(3,123) = 19.10$, $p < .001$

*** $p < .01$; * $p < .05$

Figure 1. Mediation Model Using the Mediating Role of Self-Esteem in the Relationship between Parental Attachment and Disruptive Behavior



Note. Values in parentheses are standard errors

a= direct effect of attachment on self-esteem

b= direct effect of self-esteem on disruptive behavior

c= total effect of attachment on disruptive behavior

c'= direct effect of attachment on disruptive behavior

ab= indirect effect of attachment on disruptive behavior through self-esteem

Discussion

In contrast to 58% of adolescents who had no disruptive behavior, 42% of adolescents in the current study had a moderate level of disruptive behavior, and this finding was consistent with past findings in which researchers reported moderate to severe levels of disruptive behavior among adolescents across cultures (e.g., Al-Mamun et al., 2024; Araban et al., 2020; Duesund & Oedegaard, 2018; Fontana, 1995; Mann et al., 1992; Mueller et al., 1995; Sondejker et al., 2005). Hence, as in other cultures, adolescents showed disruptive behavior in our particular Bangladeshi culture. This result, on the other hand, contrasts with some findings where researchers did not find a greater level of disruptive behavior among adolescents (e.g., Semke

et al., 2010). Although the present study found no significant effect of gender on disruptive behavior among adolescents, research studies have found a significant gender difference in disruptive behavior among adolescents (e.g., Al-Mamun et al., 2024; Araban et al., 2020; Dwairy, 2010).

The present study concluded a negative relationship between adolescent disruptive behavior and their attachment to parents. This finding was consistent with several previous studies conducted in this area of research (e.g., Allen et al., 2007; de Vries et al., 2016; Huang et al., 2016; Lakhdar et al., 2020; Lucktong et al., 2017; Sarfika et al., 2023; Savage, 2014; Shehzadi et al., 2018; Stacy and Conn, 2023; Sun et al., 2022). Attachment to fathers and attachment to mothers were strongly positively correlated ($r=.57$), indicating similarity in

the relationship with both attachments (Pinquart, 2023). Overall correlations indicated that an adolescent with a good parental attachment led to lower levels of disruptive behavior. This result was consistent with our expectations, as we hypothesized that adolescents with good parental attachment would have lower levels of disruptive behavior, or that adolescents with disturbed parental attachment would have higher levels of disruptive behavior. Consequently, we found disruptive behavior among adolescents who had low levels of parental attachment. Both paternal and maternal attachments were found to be the best significant predictors in explaining adolescent disruptive behavior. This finding was consistent with many recent studies in which researchers have found parental attachment to children to explain their children's emotional and behavioral problems (e.g., Brown et al., 2012; de Minzi, 2010; George et al., 2010; Grossmann et al., 2002; Hazen et al., 2010; Sarfika et al., 2023; Sun et al., 2022; Therriault et al., 2019).

Like other studies conducted on the study of self-esteem, the present study found self-esteem to be an important predictor in explaining adolescent disruptive behavior (Harris & Orth, 2020; Leary & Baumeister, 2000). Furthermore, self-esteem, in addition to its effectiveness as a predictor variable in the study, was found to be a criterion variable that was predicted by predictors of parental attachment in the study (Beigi et al., 2022; Keizer et al., 2019; Pinto et al., 2015; Shen et al., 2021; Sim & Yow, 2011). Additionally, self-esteem was found to be a mediator in explaining the relationship between maternal attachment and adolescent disruptive behavior, and this finding was consistent with some research conducted in this area (e.g., Gamble & Roberts, 2005; Gomez & McLaren, 2007; de Vries et al., 2016; Karunaratne, 2023; Keizer et al., 2019; Lee & Hankin, 2009). According to Bowlby's original attachment theory (maternal attachment) and the workings of this theory (the internal working model, IWM), the quality of attachment received in childhood from

the primary caregiver (the 'mother') shapes the child's psychological development, and the child internalizes these early relational experiences into cognitive structures. Therefore, according to this theory, maternal attachment in the present study can be explained as follows: secure maternal attachment→IWM (self-worth)→high self-esteem; insecure maternal attachment→IWM (defensive / anxious)→low self-esteem.

But, interestingly, self-esteem was not found to be a mediator of the relationship between paternal attachment and adolescent disruptive behavior, as paternal attachment, compared to maternal attachment, was mostly acting as a modifying predictor rather than a dominant predictor of self-esteem (Dumont & Paquette, 2013; Keizer et al., 2019).

There is no single "unified theory" linking parental attachment, self-esteem, and adolescent disruptive (externalizing) behavior. There are several theoretical frameworks that can explain this particular triad. According to Bowlby's attachment theory (Bowlby, 1973), securely attached participants developed an IWM with high self-worth that led to high self-esteem, while insecurely attached participants developed an IWM with low self-worth that led to low self-esteem. The results of this study can be explained by social bonding theory (Hirschi, 1969). When the bond with parents was strong, adolescents internalized prevailing social norms and engaged in prosocial behavior as their self-esteem increased; and when the bond with parents was weak, there was a breakdown of internal control that led to disruptive behavior. The adolescents participating in the study viewed self-esteem as a mediator that balances their internal identity and external behavior. When they perceived high self-esteem as an internal defense, they showed less levels of disruptive behavior, and when they perceived low self-esteem as caused by weak attachment to their parents, they showed a failure in their psychological defenses, which gave rise to disruptive behavior (Rosenberg's self-esteem theory; Rosenberg, 2015). Considering the

above theories, current research has shown that there is a lack of a secure attachment relationship between adolescents and their parents, which in turn has negatively affected their development and ultimately led to disruptive behavior in them (Adegboyega et al., 2017; Newman & Newman, 2011). Additionally, consistent with attachment theory, adolescents who had a secure and good parental attachment showed trust in their parents and knew there were no negative consequences and eventually adopted positive behaviors rather than disruptive behaviors (Allen, 2008). Also, securely attached adolescents were somehow respectful of their parents' opinions and thought about how their decisions or actions would be received by their parents before engaging in any disruptive behavior (Lessard & Moretti, 1998).

A limitation of the current study was not using a large sample, which limited the findings of the study. Since the level of disruptive behavior exhibited by the participants was moderate, future studies need to include samples from populations exhibiting more disruptive behavior to understand the role of attachment in disruptive behavior. In addition, the study relied solely on self-report measures, which may be subject to bias and undesired effects. Additionally, the study only considered self-esteem as a mediator but did not consider any other mediator or moderator variables. Future research could consider some variables, such as mediating variables (e.g., peer attachment, academic inattention, emotional regulation, self-control, etc.) or moderating variables (e.g., gender, temperament, social environment, parental supervision and monitoring, etc.), which would pave the way for a full-pledged study in this research area. Future research should include a larger sample with both qualitative and quantitative data collection methods. In addition to quantitative methods, qualitative methods, such as interviewing adolescents and their parents following a structured interview protocol, may be a better fit for future research strategies.

The present quantitative study sought to explore a relationship between adolescent disruptive behavior and their parents' attachment, as well as to find out whether self-esteem acts as a mediator of this relationship. Both mother-adolescent and father-adolescent attachment emerged as strong correlates in explaining adolescent disruptive behavior. Self-esteem was found to be a mediator between adolescent disruptive behavior and attachment to their mothers, but not to attachment to their fathers. The findings of the present study have empirically been validated by past studies and theoretical explanations. Study findings will help teachers and school psychologists develop effective strategies to facilitate adolescent development, progress, and achievement.

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