
**Can Empathy Moderate the Interaction Between Anxiety and Indirect Aggression?
Evidence-Based Study of Adolescent Girls**Rameen Qadeer¹, Faiz Younas^{2*}, Vicar Solomon³**Abstract**

The current study looked into the connections between adolescent females' anxiety, empathy, and indirect aggression. It was hypothesized that the three different forms of anxiety (i.e., state, trait, and social anxiety) would predict and positively correlate to indirect aggression while empathy would moderate this relationship. A descriptive-predictive research design was employed and a sample of ($N = 210$) adolescent girls between the ages of (13 and 18) years ($M = 14.54$, $SD = 1.27$) was taken through a non-probability purposive sampling method. Study variables were assessed through the short version of the State-Trait Anxiety Inventory (STAI), the Social Interaction Anxiety Inventory (SIAS), the Basic Empathy Scale (BES), and Relational Aggression Scale. Results showed a positive correlation among study variables and all three types of anxiety predicted indirect aggression while empathy moderated the relationship between them. This study was an empirical and research-based addition to the already existing indigenous body of literature regarding anxiety in school environments that could potentially cause indirect aggression among adolescent girls. Moreover, it provided insight into associations and predictions regarding study variables and filled the existing gap in the literature. These findings have implications within the fields of school psychology, gender psychology, and social psychology.

Keywords: Adolescent Girls, Empathy, Indirect Aggression, Moderation, Social Anxiety, State Anxiety, Trait Anxiety

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Introduction

The question of anxiety being the cause or result of indirect aggression although they both could co-occur (Costello et al., 2005) was explained in a study on adolescents by Farrell and Vaillancourt (2021). It suggested

that symptoms of anxiety positively predicted indirect aggression while indirect aggression and empathy had a negative association with each other. Further suggests that situational factors and personality traits like anxiety tend to initiate maladaptive behaviours like aggression (Farrell & Vaillancourt, 2021). A masculine bias in the literature results from such a limited understanding of human aggressiveness and the experiences of aggression in women are typically disregarded, even though there are several pieces of research showing that girls exhibit the same amounts of rage or aggression, but rather in an indirect way (Bjorkqvist et al., 1992; Lagerspetz et al., 1988). Even being at higher risk, not all adolescents indulge in relational or indirect aggression despite having high social anxiety in them (Tarlow & Greca, 2021). Those who understand and comprehend other people's perspectives and

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feelings engage in aggressive behaviours less often (Hartmann et al., 2010). They are protected against the relational aggressiveness that results from elevated levels of empathetic worry in them (Batanova & Loukas, 2011). How often adolescent girls show indirect aggression when anxious, is the central idea of this research, and whether or not empathy moderates this relation in them shall be investigated in the following study.

Anxiety

An internalized behaviour such as anxiety and its intense presence can produce various negative consequences within an individual's behaviour. It is conceptualized as the tendency to be worried, hyper-attentive towards actual or the threats that are perceived by the person, and repetitive cognitions related to negative results (Vasey et al., 2014). From a cognitive perspective, anxiety has been linked to hypervigilance (Eysenck, 1997). Two major subtypes of anxieties bias attention differently i.e., state-based anxiety and trait-based anxiety (Williams et al., 1997).

State anxiety means reacting in an emotionally unpleasant way when dealing with a threat or a situation of worry (Spielberger, 1983). While trait anxiety is an innate predisposed ability of an individual to respond to a threat (Tovilović et al., 2009). These two anxiety kinds are multidimensional, meaning that each person has a unique propensity for feeling anxious in difficult circumstances (Endler & Kocovski, 2001). Individuals differ in how they exhibit anxiety in various situations. Another type of anxiety is called social anxiety. It includes feelings of fear during social situations and negative evaluations about one's self that can result in feelings of stress or avoidant behaviours during social interactions. Research has shown that anxiety develops at an early age of 12.5 years in girls i.e., girls have been found to have high anxiety during social situations (Calvete et al., 2013;

Wittchen et al., 1999). To have anxiety in a certain situation is a normal human response, however, when its frequency and intensity rise to an abnormal level, it becomes a pathology (Nia et al., 2016). While anxiety and aggression are studied as two separate concepts, they both tend to correlate in many aspects. Several studies have linked anxiety with childhood aggression i.e., high aggression means high anxiety (Chung et al., 2019).

Indirect Aggression

Unlike anxiety, relational/indirect aggression is an obvious type of externalized behaviour that develops over time from childhood through adulthood (Björkqvist et al., 1992) and anxiety in girls has been associated with behavioural outcomes like indirect or relational aggression (Card et al., 2008). It is characterized by actions meant to damage interpersonal relations, such as gossiping, spreading rumours or exclusion from a social group (Archer & Coyne, 2005). According to Crick and Grotpeter (1995), when kids want to pose harm to a fellow, they choose a strategy that would undermine the values that a particular peer group holds most dear.

Indirect or relational aggression is a girl's way of showing aggressiveness. It involves actions like damaging another person's image, excluding someone from a group of friends or spreading rumours about them (Vaillancourt & Krems, 2018). Girls show much more indirect or relational aggression towards other girls than they do towards boys (Faris & Felmlee, 2011). Cooley et al. (2017) gave a temporal direction from anxiety towards aggression which is supported by few longitudinal studies on relational aggression. Underlying symptoms of anxiety and being proactive in the face of threats might lead to the indirect use of aggression to manage anxiety (Granic, 2014).

Empathy

Empathy is an affective quality which makes it easier to experience someone's emotions

(Mehrabian & Epstein, 1972). To have empathy is to have emotional reactions that are congruent with another person's emotions (Eisenberg, 2000). Aggressive behaviour and empathic care have frequently been linked adversely. The empathic concern has been seen to positively connect with anxiety, unlike its association with indirect aggression (Gambin & Sharp, 2018). Throughout adolescence, a variety of antisocial behaviours are linked to an overwhelming lack of empathic concern (Frick & White, 2008).

Researchers have discovered that antisocial and aggressive behaviour is more strongly connected with the absence of sympathetic care (Decety & Cowell, 2014; Jordan et al., 2016) indicating that anxiety would not predict relational aggression in the presence of high empathetic worries. (Batanova & Loukas 2011). Empathy can reduce aggression in two different ways: by role-playing or role-taking, one person tries to understand another person's opinion by stepping into his shoes and reciprocating his intentions and motives. The second way is to vicariously share similar feelings which automatically reduces violence or aggression (Zych et al., 2013).

Literature Review

Farrell and Vaillancourt, (2021), in a study, measured indirect aggression, anxiety and empathy during childhood and adolescence. They discovered that anxiety and indirect aggression are related, with the former predicting the latter. This research was able to support the previous notions that adolescence is the time when anxiety and indirect aggression tend to increase. Also, girls were found to develop anxiety relatively more than boys. The research was conducted in Indonesia by Sari et al. (2022) that studied a correlation between anxiety and aggressive behaviours among adolescents. They found that anxiety had a higher risk of developing aggressive behaviours in adolescents. Severe

anxiety decreases the ability to perceive and think rationally and the person just tries to overcome the tensions, not focusing on any other issue (Videbeck & Videbeck, 2013). Likewise, one more research by Wehde, (2020) supported the above-mentioned study in that, a relationship exists between anxiety and aggression. Anxiety contributes to behavioural problems like aggression.

Researchers suggest that girls have more state anxiety and higher relative negative affect with stress, anxiety, and depression. Canon et al. (2020) connect this to situations involving disputes at school in adolescence, where it has also been noted that girls exhibit indirect forms of aggressiveness. Lastly, teenage girls were more likely to experience social anxiety, as seen in a study by Brothers (2018) on the relationships between social anxiety and indirect violence in adolescents. These teens with high social anxiety enacted reactive relational aggression when they ruminated about the events that made them angry. The potential significance of empathy in connection with anxiety and indirect aggression is explained in research by Tarlow and Greca (2021) where they studied adolescents' indirect peer aggression. This study provided insight into the perspective that individuals who have high social anxiety use indirect aggression as a coping mechanism while facing school problems. Less cognitive empathy makes adolescents more prone to showing indirect aggression as predicted in another research by Blair (2018). Findings from another study by Lo Cricchio et al. (2022) suggested that secure individuals with more understanding towards empathetic concerns, take others' feelings without anxiety, thus reducing aggressive behaviour. The two (affective and cognitive) facets of empathy were studied with dimensions of aggression in adolescents by Lasota (2017). It was seen that empathy inhibits aggression. Lastly, research on the nature of school violence, aggression, and empathy was

examined by Martinez-Gonzalez (2021). They found empathy as an important variable in youth who engage in violence, be it direct or indirect. Showing more empathy for others substantially reduced violence in them.

Keeping the above-mentioned literature in mind, it is quite clear that anxiety has the capability of producing indirect aggression while empathy can reduce it. It also suggests that adolescence is the time when indirect aggression is seen most specifically in girls. Hence it can be established that trait anxiety, i.e., relatively permanent, state anxiety i.e., momentary and social anxiety, have distinct relations with indirect aggression.

Rationale

Despite its detrimental consequences on adolescents, indirect aggression is still understudied (Voulgaridou & Kokkinos, 2015), most likely because it is harder to spot and more subtle. The existing literature explains the predictive nature of anxiety in producing this indirect aggression (Cooley et al., 2017; Farrell & Vaillancourt, 2021; Stern & Cassidy, 2018; Voulgaridou & Kokkinos, 2015) and a general assumption regarding the causal relationship between the two exists i.e., anxiety causes aggression. However, none of these studies specifically assessed state, trait, or social anxiety with indirect aggression. Since there is a general void in the literature, we are unaware of any studies that attempt to explain the connection between various anxiety disorders and indirect violence in young females. As far as empathy is concerned, reduced empathy has been frequently linked to high aggression (Lo Cricchio et al., 2022; Martinez-Gonzalez et al., 2021). Students with low cognitive empathy are unable to make accurate predictions about their friends' intent and this leads them to peer aggression (Tarlow & Greca, 2021).

To the best of my knowledge, in the Eastern context, almost no research tends to explain this relationship. It may come as a shock to

many who think girls are generally non-aggressive that girls are not only capable of employing aggression to purposely damage another but also do it frequently (Bonnie & Lawson, 2018; Card et al., 2008). Is there a similar pattern between different forms of anxiety and indirect aggression? And does empathy moderate this association shall be the focus of the current study?

This study has the following objectives keeping the dynamics of above mentioned literature in mind.

1. To investigate the relationship between anxiety, indirect aggression and empathy in adolescent girls.
2. To determine if anxiety predicts indirect aggression.
3. To determine the moderating role of empathy between anxiety and indirect aggression.
4. To explore the sociodemographic differences across study variables.

Hypotheses

1. State anxiety, trait anxiety, and social anxiety would positively correlate to indirect aggression.
2. State anxiety, trait anxiety, and social anxiety would predict indirect aggression.
3. Empathy would moderate the relationship between state, trait, social anxiety, and indirect aggression.
4. Demographics would predict indirect aggression.

Method

The non-probability purposive sampling strategy was applied in the present study. G-Power suggested a sample size of 135 at $P = 0.8$ and the sample for this study consisted of 210 adolescent girls ($n = 210$) recruited from public schools of Lahore between the ages of 13 and 18 years ($M = 14.54$, $SD = 1.27$). Data were collected after getting the approval from Institutional Board of Studies (BOS) and permission from concerned authors was

taken for the usage of selected scales. Participants were briefed about the aim of the study and consent was taken before administering questionnaires to them.

Assessment Measures

Sociodemographic Sheet

A self-constructed sociodemographic sheet was used that included age, grade, birth order, number of siblings, family system, current marital status of parents, parent's occupation, and family's monthly income.

State-Trait Anxiety Inventory STAI-18 (Brief Version)

The brief version of the State-Trait Anxiety Inventory (STAI-18) was developed by Zsido et al. (2020). It consists of 5 items assessing state-based anxiety symptoms (STAI-S), and 5 items assessing trait-based anxiety symptoms (STAI-T). It is a 5-point Likert scale i.e., 1 = not at all and 5 = extremely. For STAI-S and STAI-T, the Cronbach's alpha value is 0.90 and 0.82 respectively. The reliability analysis for this study showed alpha values of .78 for both, the state anxiety subscale as well for trait anxiety subscale.

Social Interaction Anxiety Inventory (SIAS)

A different measure from STAI-18 i.e., the Social Interaction Anxiety Inventory (SIAS) which conceptualizes anxiety as feelings of

distress when talking or meeting with other people, was used for measuring social anxiety (Mattick & Clarke, 1998). It has an alpha reliability of 0.93. It consists of 20 items and uses a 5-point Likert scale (i.e., 1 = not at all and 5 = extremely). The reliability analysis for this study showed alpha value of .87 for the social anxiety scale.

Basic Empathy Scale (BES)

It is a 5-point Likert scale (i.e., 1 = strongly disagree and 5 = strongly agree) that consists of 20 items developed by Jolliffe and Farrington (2006). The Cronbach's alpha value for the entire sample (alpha males = .88, alpha females = .87) is .88. The reliability analysis for this study showed alpha value of .78.

Relational Aggressive Behavior Scale

Indirect aggression was assessed through 12 items from a self-report measure called the Relational Aggressive Behavior Scale, developed by Little et al., (2003). This measure has shown significant valid results on adolescent samples previously (Farrell & Vaillancourt, 2021). This scale is sufficiently reliable with Cronbach's alpha values ranging from .79 to .85. The reliability analysis for this study showed alpha value of .82.

Table 1*Sociodemographic Characteristics of Study Sample (N=210)*

Characteristics	N	%	Characteristics	N	%
Age (in years)			Family system		
13-15	178	84.8	Nuclear	134	63.8
16-18	84	15.2	Joint	76	36.2
Grade			Parent's marital status		
8-9	190	90.5	Married	199	94.8
10-12	20	9.5	Separated	2	1
Birth order			Divorced	9	4.3
First born	69	32.9	Father's occupation		
Middle born	77	36.7	Job	134	63.8
Last born	50	23.8	Business	69	32.8
Only child	14	6.7	Deceased	7	3.4
Mother Employed			Family's Monthly Income (in rupees)		
No	176	83.8	20,000 – 1,00,000	113	53.8
Yes	34	16.2	1,00,000 – 2,00,000	72	34.3
			2,00,000 – 6,50,000	25	11.9

Note: Participants on average were 14.5 years old ($SD = 1.3$).

Results**Table 2***Inter Correlations between Study Variables and Demographic Characteristics (N = 210)*

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age			-									
2. Grade			.65**	-								
3. Siblings			.03	-.01	-							
4. Birth order			-.02	.64	.01	-						
5. Family System			.02	.03	.01	-.18	-					
6. State Anxiety	2.19	.87	.01	.06	.06	.03	.09	-				
7. Trait Anxiety	2.98	1.01	-.02	.03	.04	.04	.09	.60**	-			
8. Social Anxiety	2.68	.73	-.13	.02	.01	.042	.12	.64**	.69**	-		
9. Empathy	3.33	.52	.01	.07	.07	.17*	.01	.24**	.51**	.34**	-	
10. Indirect Aggression	2.47	.75	-.15	.11	.04	.06	.01	.52**	.55**	.58**	.38**	-

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2 revealed that all three anxiety kinds correlated significantly with each other. State anxiety, trait anxiety and social anxiety had significant positive correlations with

empathy and indirect aggression. Also interestingly, empathy showed a significant positive correlation with indirect aggression. Empathy significantly correlated to all three forms of anxiety.

Table 3

Stepwise-Hierarchical Regression Analysis Predicting Empathy from State Anxiety, Trait Anxiety and Social Anxiety (N=210)

Variables	B	95% CI		SE B	β	R^2	ΔR^2
		LL	UL				
Step 1						0.33	0.33***
Constant	0.86***	0.53	1.18	0.16			
Social anxiety	0.59***	0.4	0.72	0.06	0.57		
Step 2						0.38	0.47***
Constant	0.76***	0.45	1.21	0.19			
Social anxiety	0.38***	0.25	0.59	0.08	0.40		
Trait Anxiety	0.22***	0.11	0.36	0.06	0.30		
Step 3						0.39	0.02*
Constant	0.76***	0.45	1.14	0.16			
Social anxiety	0.30***	0.13	0.45	0.09	0.29		
Trait Anxiety	0.18**	0.06	0.29	0.06	0.24		
State Anxiety	0.16*	0.03	0.27	0.06	0.19		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, CI = Confidence interval

Table 3 shows the separate impact of state anxiety, trait anxiety and social anxiety on indirect aggression. Step 1 shows the R^2 value of 0.33, which indicates that social anxiety brings about 33% variance in the outcome variable, i.e., indirect aggression with $F(1, 208) = 103.6$, $p < 0.001$. Hence, findings reveal that social anxiety positively predicted indirect aggression. Step 2 further showed the value of R^2 being 0.38, suggesting that social anxiety and trait anxiety explained about 38% variance in indirect aggression. It suggests that social anxiety and trait anxiety

positively predicted the dependent variable, i.e., indirect aggression. Step 3 indicated the value of R^2 being 0.39, explaining 39% variance in indirect aggression by social anxiety, state anxiety and trait anxiety. It means that social anxiety ($\beta = 0.29$, $p < 0.05$) state anxiety ($\beta = 0.24$, $p < 0.05$) and trait anxiety ($\beta = 0.19$, $p < 0.05$) positively predicted indirect aggression. The ΔR^2 value of 0.02 revealed a 2% change in the variance of model 1, model 2 and model 3 with $\Delta F(1, 206) = 6.52$, $p < 0.05$.

Table 4*Analysis for Moderation of Empathy between Anxiety Forms and Indirect Aggression (N = 210)*

Variables	Model 1			Model 2		
	B	β	SE	B	β	SE
Constant	2.45***		0.04	2.49***		0.04
State Anxiety	0.33***	0.46***	0.04	0.36***	0.49***	0.05
Empathy	0.21***	0.27***	0.04	0.15**	0.21**	0.05
State Anxiety x Empathy				-0.14**	-0.16**	0.05
R^2	0.34			0.36		
ΔR^2				0.02		
Trait Anxiety	0.36***	0.46***	0.48***	0.35***	0.46***	0.05
Empathy	0.10*	0.13*	0.14*	0.02	0.03	0.05
Trait Anxiety x Empathy				-0.15***	-0.24***	0.04
R^2	0.32			0.36		
ΔR^2				0.04		
Empathy	0.14**	0.19**	0.04	0.07	0.09	0.05
Social Anxiety	0.38***	0.51***	0.04	0.37***	0.50***	0.04
Social Anxiety x Empathy				-0.12**	-0.19**	0.04
R^2	0.36			0.38		
ΔR^2				0.03		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

First model 1 shows the moderation effect of empathy between state anxiety and indirect aggression. The R^2 value of .34 explained the 34% variance that the predictors had on the outcome variable with $F(2, 207) = 53.6, p < 0.001$. Findings revealed that state anxiety and empathy positively predicted indirect aggression. In Model 2, an R^2 value of 0.36 indicated that predictors showed 36% variance in the outcome variable. Findings suggested that the interaction of state anxiety and empathy (state anxiety x empathy) also significantly negatively predicted indirect aggression ($\beta = -0.16, p > 0.05$). The ΔR^2 value of .02 revealed a 2% change in the variance of model 1 and model 2 with $F(1, 206) = 7.1, p < 0.01$.

Second model 1 shows a moderation effect of empathy between trait anxiety and indirect aggression. The R^2 value of .32 means that 32% of the variance in the outcome variable is due to the presence of predictors with $F(2, 207) = 48.81, p < 0.001$. Hence, trait-based

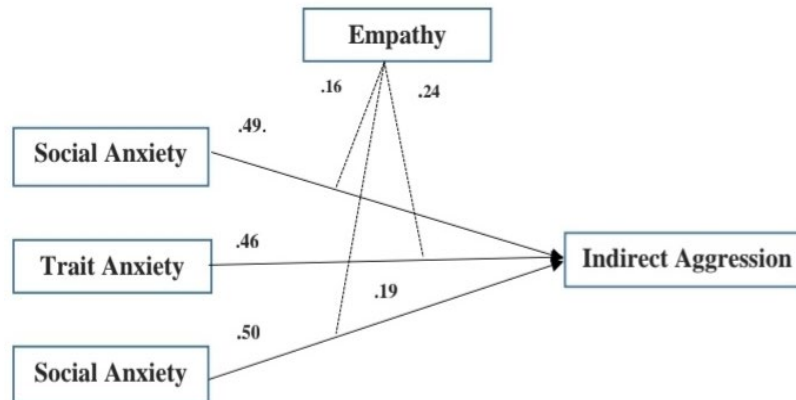
anxiety and empathy predicted indirect aggression. In Model 2, the moderation effect of trait anxiety, empathy and trait anxiety x empathy is shown. The R^2 value of .36 reveals a 36% variance in the outcome variable brought up by the predictors. The interaction between trait anxiety and empathy (trait anxiety x empathy) ($\beta = -.24, p < 0.001$) negatively predicted indirect aggression. So, empathy moderates the relationship between trait anxiety and indirect aggression.

Finally, model 1 once more illustrates the moderating impact of empathy between social anxiety and indirect aggression. The R^2 value of .36 reveals a 36% variance shown by the predictors on the outcome with $F(2, 207) = 59.02, p < 0.001$. Findings revealed that social anxiety and empathy positively predicted indirect aggression. In Model 2, the R^2 value of .38 indicated 38% variance in the outcome variable as shown by the predictors. Hence, social anxiety x empathy i.e., their interaction ($\beta = -.19, p < 0.01$) negatively

predicted the indirect aggression supporting moderating effect of empathy.

Figure 1

Emerged Model indicating the Moderating Role of empathy between Forms of Anxiety and Indirect Aggression



Discussion

With empathy acting as a moderator, the current study sought to identify relationships between indirect aggression and various types of anxiety in adolescent girls. Findings revealed a favourable correlation between state anxiety, trait anxiety, and social anxiety as well as indirect aggressiveness. All three types of anxiety linked to indirect aggressiveness were mitigated by empathy. These findings are consistent with several previous researches where anxiety showed high correlations with indirect aggression among adolescent girls (Chung et al., 2019; Farrell and Vaillancourt, 2021; Sari et al., 2022; Tarlow & Greca, 2021; Wehde, 2020). Another study by Sari et al., (2022), confirmed the idea that girls do engage in indirect violence, finding that higher levels of anxiety can increase this behaviour in girls and they show it more towards other girls than they do towards boys.

Social anxiety came out to be the most significant predictor in this study. Pontillo et

al. (2019) explained that the reason for adolescent girls developing social anxiety has a lot to do with their school environment. Being bullied in school is one of the hardest situations for adolescents, and that can lead them to become more socially anxious (Pontillo et al., 2019). Social anxiety subsequently predicts externalizing behaviours like aggression. Explained in research by Tarlow and Greca (2021), social anxiety acts as a potential variable influencing the association between empathy and indirect aggression, such that, decreased empathy predicts more indirect aggression among anxious adolescents.

The second most important predictor in the current study was trait anxiety. This is in line with another study by Matinez-Gonzalez et al. (2021), who looked at the relationship between gender, anxiety, and the justification of violence in adolescents. They discovered that girls who had higher trait anxiety expected more justification from their peers

because they saw aggression and violence as a form of catharsis, which legitimized it.

Furthermore, in the presence of empathy, all three forms of anxiety negatively predicted indirect aggression which means that empathy inhibits indirect aggression. Consistent with prior findings, this moderating role has been seen in research conducted by Lasota (2017). It was seen that empathy inhibits aggression. High levels of empathy meant lower aggressive behaviours. They also found that both, empathy and positive perceptions of school reduced the aggression. Euler et al. (2017) found similar patterns between empathy and aggression in girls i.e., a low aggressiveness cluster of girls had better overall empathy. They conclude that aggressive girls are less likely than girls who are not aggressive, to receive positive reinforcement for their proactive aggressive behaviour, which results in less affective empathy in them.

Since all participants were girls and above stated patterns of anxiety, empathy, and indirect aggression were seen in them, a study by Vaillancourt and Krems, (2018) proposed that same-sex aggression is due to mating competition in girls and that increases because of anxiety and depression associated with it. Jealousy is another factor that induces indirect aggression in girls.

A previous gap in the literature, as suggested by (Chung et al., 2019; Farrell and Vaillancourt, 2021), allowed us to assume the connection between different anxiety states, empathy, and indirect aggression. It was discovered that state, trait, and social anxiety individually relate to indirect aggression, and the presence of empathy moderates this association. Given that it included an indigenous perspective, this finding can be seen as a contribution to the fields of sociology, gender studies, and educational psychology.

Limitations and Suggestions

One limitation of the study was that data were collected mostly from class 8th and 9th graders which reduced the age bracket so results can only be applicable for young adolescents who are between ages 13 to 15. The sample was limited to Lahori adolescents, therefore the findings cannot be applied to the non-Lahori population. Another limitation was that questionnaires were filled by young girls who might have made mistakes in the correct interpretation of some items. The study did not consider the situational factors that may have affected the study. The study uses a descriptive-predictive design and thus does not explain the causal relationship.

For better generalization, data should be calculated across all ages of adolescents i.e., 10-19 years old. Data was only calculated from public schools of Lahore, for better insight and comparison, data should also be calculated from private schools. For more understanding of indirect aggression, instead of subjective reporting, experimental design should be applied to assess aggression in provoking situations. For future studies, data should also be gathered from college participants to check differences.

Conclusions and Implications

At the young age of 15 years, as seen in this study, girls are at the peak time of using indirect aggression toward others, and that is also motivated by their internalized anxiety possibly related to the school environment. A diminished capacity for empathy or understanding other people's actions becomes a salient factor that further enhances the association between anxiety and aggression. Taken together, findings from this research show the potential role that school environment and peer relationships have in the prediction of indirect aggression among girls.

Now that this study has established that adolescent school girls are capable of using indirect aggression as a coping mechanism to

reduce their anxieties, the current study has its implications in the school environment, where children can be taught healthy ways to cope with their anxieties. Students can be trained to show empathy and concern for their peers, as it reduces the risk of indirect aggression in them. When someone is acting indirectly aggressive, teachers and parents frequently are unaware of it, and such acts frequently go unnoticed. The current study gives an insight into this factor also. This study can also be used as a foundation for qualitative investigations into these occurrences, adding indigenous as well as particular aggression-related perspectives to the body of knowledge.

Contribution of Authors

Rameen Qadeer: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft
 Faiz Younas: Methodology, Writing – Reviewing & Editing, Supervision
 Vicar Solomon: Methodology, Writing - Reviewing & Editing

Conflict of Interest

There is no conflict of interest declared by the authors.

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Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [F.Y.] upon the reasonable request.

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