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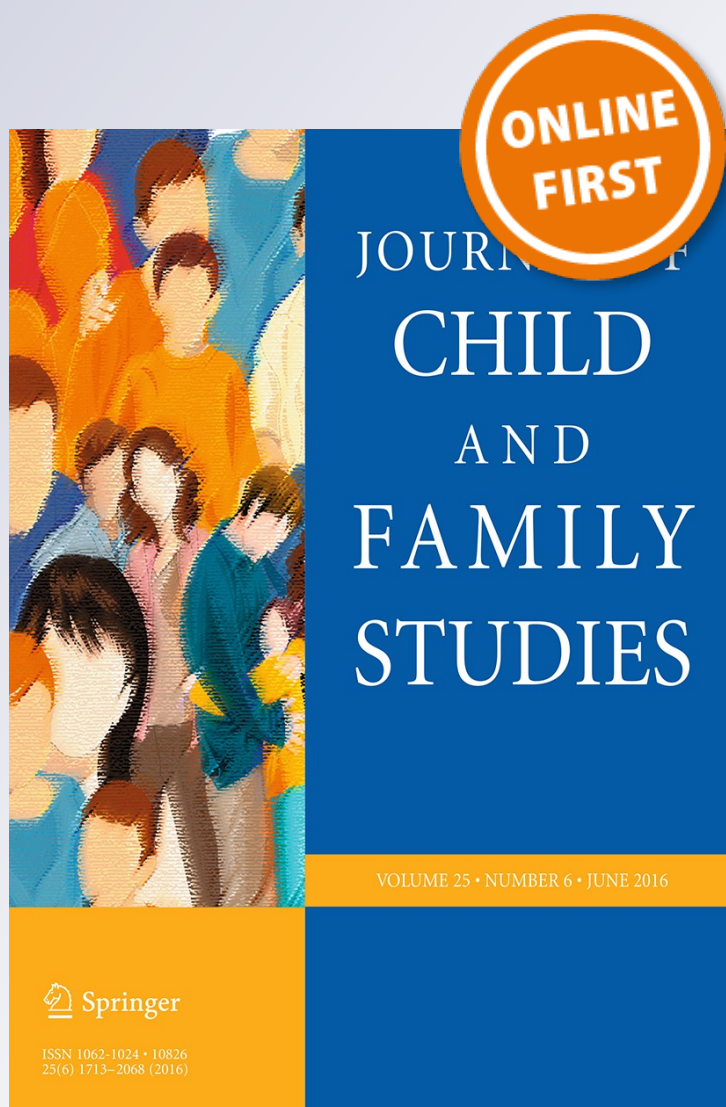
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Journal of Child and Family Studies

ISSN 1062-1024

J Child Fam Stud

DOI 10.1007/s10826-016-0435-4



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The Role of Anger in the Relationship Between Internalising Symptoms and Aggression in Adolescents

Daniel Gresham¹ · Glenn A. Melvin¹ · Eleonora Gullone¹

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Abstract The purpose of this study was to examine the role of anger in the relationships between various internalising symptoms and direct and indirect aggression. A sample of 241 adolescents aged 12–17 years completed the Screen for Child Anxiety Related Emotional Disorders, Centre for Epidemiological Studies Depression scale (CES-D) and the Buss–Warren Aggression Questionnaire (AQ-15). Symptoms of panic disorder, generalised anxiety disorder and depression, but not social phobia, were positively correlated with anger, direct aggression and indirect aggression. When considered simultaneously in regression analyses, only symptoms of depression contributed to variance in the anger and aggression variables. However, using indirect effect modelling, no direct relationships were found between the internalising symptom variables and the aggression variables. Instead, the data suggested that the relationship between internalising symptoms and aggression is mediated by the emotion of anger. These findings suggest that the degree to which anger co-occurs with internalising symptoms may play an important role in an individual's propensity to engage in aggressive behaviour.

Keywords Anxiety · Depression · Anger · Aggression · Adolescent

Introduction

Research has consistently shown aggression to be associated with various types of maladjustment during adolescence (Dodge et al. 2006), which often continue into adulthood (Huesmann et al. 2009). Further to this, adolescence represents a peak risk period for the development of internalising disorders such as anxiety and depression (Costello et al. 2011). A growing body of literature suggests that internalising symptoms are associated with anger as well as aggressive behaviour among a variety of samples (Batanova and Loukas 2011; Dutton and Karakanta 2013; Hawkins and Cougle 2011), although studies among adolescent samples are limited. The co-occurrence of internalising symptoms and aggression often presents within clinical settings (Lilienfeld 2003; McConaughy and Skiba 1994) and it is often difficult to determine whether one of the observed symptom clusters is perhaps at the origin of the other. As such, treatment recommendations may differ depending on whether internalising or externalising symptomatology are more prominent, or whether one set of symptoms appears to be responsible for the other. Further clarity of the ways in which internalising symptoms and aggression co-occur, as well as the mechanisms involved in these relationships, have direct implications for the development of future intervention strategies.

Aggression can be broadly defined as any behaviour directed toward another individual whereby the perpetrator intends to harm the target (Bushman and Anderson 2001). Aggressive behaviour can be classified in terms of the ways in which an individual may aggress. Distinction is made between direct aggression, characterised by behaviours aimed directly toward the victim such as hitting or verbal assault, and indirect aggression, characterised by behaviours conducted in a circuitous and anonymous manner

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such as spreading rumours or destroying someone else's property (Richardson and Green 2003). The general aggression model (GAM; Anderson and Bushman 2002) purports that aggressive behaviour is influenced by the interaction between factors relating to a person (e.g. sex, traits and attitudes) and factors relating to a situation which they are in (e.g. aggressive cues, provocation or frustration; Anderson and Bushman 2002). The interaction between these person and situation factors are thought to influence the individual's current internal state, including factors such as mood, emotion and physiological arousal, which then impact on the individual's propensity to aggress (Anderson and Bushman 2002).

A significant limitation of previous aggression literature is the inconsistent distinction between aggression and the associated construct of anger (Eckhardt et al. 2004). As has been discussed, aggression refers to a behavioural process which is intended to inflict harm on another person (Bushman and Anderson 2001). In contrast, anger is conceptualised as an emotional state that can vary in intensity from mild annoyance to rage (Spielberger et al. 1983). The GAM states that the emotion of anger may influence an individual's propensity to aggress via several mechanisms; by providing a justification for aggressive retaliation, interfering with higher-level cognitive processes, increasing attention to provoking events, increasing arousal levels which may energise behavioural responses, and by priming aggressive thoughts, scripts and behaviours (Anderson and Bushman 2002). Further to this, according to the GAM, anger may be used as an information cue, like all emotions, informing individuals about possible ways to respond to a situation (Anderson and Bushman 2002). It is important to note that while anger is strongly associated with aggressive behaviour, aggression may occur in the absence of anger (Anderson and Bushman 2002).

Empirical research has shown that anxiety and depression are associated with the emotion of anger as well as aggressive behaviour among children (Erwin et al. 2003; Vitaro et al. 2002), adolescents (Batanova and Loukas 2011; Fite et al. 2010; Marsee et al. 2008) and adults (Barret et al. 2013; Hawkins and Cogle 2011; Moscovitch et al. 2008). The nature of these relationships, however, remains unclear. Do internalising emotions precede aggression such that people who feel anxious or sad might attempt to make their environment feel safe through the use of aggressive behaviour, or does engaging in aggression lead to later feelings of anxiety or sadness? While some research findings suggest that anxiety might lead to later aggressive behaviours (e.g. Vitaro et al. 2002), other research suggests that aggression predicts later internalising symptomatology (Pihlakoski et al. 2006; Slemming et al. 2010). For example, a prospective study conducted by Vitaro et al. (2002), found that general anxiety symptoms

assessed at age 6 years were positively related to aggressive behaviour at age 10–12 years. In contrast, Slemming et al. (2010) found that hostile/aggressive behaviours assessed at 3–4 years of age were positively associated with internalising difficulties at 10–12 years of age. It is also possible that the co-occurrence of aggression and internalising symptoms is due to common factors. For example, a review article by Kunimatsu and Marsee (2012) discusses several mechanisms associated with the fight-flight response that are common to both anxiety and aggression, which might help to explain the observed co-occurrence.

Another question that remains unclear regarding the co-occurrence of internalising symptoms and aggression relates to whether internalising symptoms are differentially associated with direct and indirect forms of aggression. While some authors have reported associations between internalising symptoms and both direct and indirect forms of aggression (Loukas et al. 2005), other research has shown unique associations with indirect, but not direct, aggression (Marsee et al. 2008). For example, in a sample of adolescents, Loukas, Paulos, and Robinson (2005) found significant positive correlations between social anxiety and overt aggression, which is akin to direct aggression, as well as relational aggression, which is an indirect form of aggression that involves harming others through damaging social relationships. However, Marsee et al. (2008) found that overall anxiety (an aggregate score of several disorder symptoms) in a sample of adolescents was associated with relational aggression but not overt aggression.

Extant research has also not yet thoroughly examined the associations between discrete anxiety disorder symptoms and different forms of aggression. Among an adult sample, Hawkins and Cogle (2011) found that, after controlling for depression, symptoms of social phobia (SP), panic disorder (PD), generalised anxiety disorder (GAD), post-traumatic stress disorder (PTSD), and specific phobia were uniquely related to anger experience as well as direct forms of aggression. Moreover, Fite et al. (2010) found that in a sample of 16 year old boys, depression was related with direct forms of reactive aggression. However, to the authors' knowledge, only two studies (both use the same sample measured at two time points) have examined the relationships between specific anxiety disorder symptoms and aggression using an adolescent sample. At the first wave, using a sample of 10–14 year olds, Loukas et al. (2005) found significant positive correlations between scores on a 'fear of negative evaluation' scale from a measure of social anxiety, and overt and relational aggression. At the second wave, 1 year later, Batanova and Loukas (2011) found that social anxiety symptoms were prospectively positively related with overt (direct) and relational (indirect) aggression, though only in the context

of low empathic concern. Further research is needed to clarify the ways in which internalising symptoms and aggression relate. Specifically, research is required to determine whether the relationship is causal and in which direction, or whether factors common to both internalising symptoms and aggression explain their co-occurrence. Furthermore, research is needed to examine the nature of specific relationships between various internalising symptom clusters and direct and indirect forms of aggression.

When considering how internalising symptoms such as anxiety and sadness might be related to aggressive behaviour, Berkowitz 1990, 2002 Cognitive Neoassociation model provides one possible explanation. The Cognitive Neoassociation model, a component of the general aggression model (Anderson and Bushman 2002), posits that unpleasant conditions including unpleasant affect, give rise to *both* fight and flight tendencies at a rudimentary level. The fight-flight response, first proposed by Cannon (1929), describes two primitive drives, one to escape from or avoid stimuli perceived as dangerous, and another to attack or destroy the stimulus. While the flight response is experienced consciously as fear, the activation of the fight response gives rise to rudimentary feelings of irritation and anger (Berkowitz 2002). With this conceptualisation, it is assumed that internalising symptomatology precedes aggressive behaviour. When an individual experiences feelings of anxiety or sadness to a degree sufficiently unpleasant to prompt fight-flight system activation, rudimentary levels of anger are generated. This underlying anger would then increase one's propensity to aggress as described by the general aggression model; by providing a justification for aggressive retaliation, interfering with higher-level cognitive processes, increasing attention to provoking events, increasing arousal levels which may energise behavioural responses, and by priming aggressive thoughts, scripts and behaviours (Anderson and Bushman 2002). As such, co-occurring feelings of anger that are triggered by the fight-flight system in response to unpleasant affect might be one possible mechanism via which internalising symptoms increase an individual's propensity to aggress (Berkowitz 1990, 2002).

While to the authors' knowledge, no research has examined whether the relationship between internalising symptoms and aggression is mediated by anger, some research has shown that unpleasant stimuli including pain and discomfort are associated with increased aggressive affect and aggressive behaviour (Anderson et al. 1995; Berkowitz et al. 1981; Vrij et al. 1994). For example, Anderson et al. (1995) found a significant and positive relationship between room temperature and self-reported hostility and anger in a sample of university students during a video game task. In a study by Berkowitz et al. (1981) it was found that women whose hands were submersed in

painfully cold water were more strongly driven to harm a target, compared to women whose hands were submersed in slightly warm water. In another study by Vrij et al. (1994), which used a virtual reality system to simulate a police confrontation with a suspected burglar, officers experienced greater negative affect, and reported a greater tendency to shoot their firearm, when the ambient temperature was set to 27 °C as compared with a more pleasant temperature of 21 °C.

In sum, both theory and empirical research suggest that the experience of internalising symptoms, such as anxiety and sadness, may give rise to anger and aggression. Consistent with the Cognitive Neoassociation Model and the GAM, it is possible that internalising symptoms give rise to feelings of anger, which in turn increases one's propensity to aggress. However, no research has examined whether the relationships observed between internalising emotions and aggressive behaviour, are mediated by anger. Furthermore, research examining the associations between discrete internalising disorders and direct and indirect forms of aggression among adolescents is sparse. The current study will investigate whether symptoms of three anxiety disorders among adolescents, panic disorder (PD), social phobia (SP), and generalised anxiety disorder (GAD), as well as symptoms of depression, are positively associated with the emotion of anger as well as direct and indirect forms of aggression. Based on the literature discussed above, it is expected that symptoms of the anxiety and depression variables will be positively associated with anger, direct aggression and indirect aggression. Further to this, the current study will examine the direct and indirect relationships between internalising symptoms and aggression via anger. In support of Berkowitz's Cognitive Neoassociation model, it is hypothesised that an indirect relationship will be observed between internalising symptom variables and each of the aggression variables, via the emotion of anger.

Method

Participants

The sample comprised 241 youth (40.5 % male) aged between 12 and 17 years ($M = 15.22$ years, $SD = 1.60$ years). Part of the current sample was drawn from an ongoing Australian longitudinal study which has investigated how children's emotions are related to their wellbeing, while new participants were recruited through schools. Siblings of all participants were also invited to participate. All participants recruited through the above means, aged 12–17 years, with parental consent, and who themselves assented, took part in the study. In total, 35 participants

(14.5 %) from previous rounds of the longitudinal study participated in the current phase, while 200 participants were recruited through five government ($n = 165$; 68.4 %), one catholic ($n = 21$; 8.7 %) and one independent school ($n = 14$; 5.8 %). Six siblings (2.5 %) of these participants were also included in the sample.

Procedure

Approval was obtained from the university research ethics committee as well as from the Department of Education and Early Childhood Development (DEECD) and the Catholic Education Office. Schools were contacted by mail and invited to participate. If a principal agreed, schools were contacted via phone to arrange distribution of explanatory statements and consent forms. Further to this, a letter of invitation, along with explanatory statements and consent forms were mailed to parents of children who had previously participated in the longitudinal research study, inviting them to consent to their child's continued participation. Parents who indicated on their consent form that another child in their family would like to participate, but who was not already involved in the study, were mailed additional forms.

Participants completed the study measures within a larger battery of measures. Measures were presented in a counterbalanced order, in either group format during school hours or individually at home during the participant's own time. Questionnaires took approximately 30–40 min to complete. Participants whose scores were equal to or greater than 16 for the CES-D and/or 25 for the SCARED were deemed to be 'at-risk'. Letters were sent to the parents of at-risk participants informing them of the possible risk and the opportunity to speak with the chief investigator (GM), regarding their child's scores and possible sources of assistance. Also, as a means of thanking participants for their contribution, a raffle was held for three prizes up to \$150 in value. The DEECD did not provide approval for their students to be involved in the raffle and as such participants from DEECD schools were not eligible to enter.

Measures

Aggression

The 34-item Buss–Warren Aggression Questionnaire (BWAQ; Buss and Warren 2000) was developed to assess aggressive behaviour as well as the associated constructs of anger and hostility. The physical, verbal and indirect aggression scales, as well as the anger scale, from the shortened 15-item version of the BWAQ (AQ-15) were used in the current study. As the physical and verbal scales

each capture direct forms of aggression, they were combined to derive participants' scores of direct aggression. A five-point Likert scale ranging from 1 = 'not at all like me' to 5 = 'completely like me' captures participants' perceptions of their own feelings and behaviours. Example items include 'I may hit someone if he or she provokes me' (physical), 'My friend's say that I argue a lot' (verbal), 'If I'm angry enough, I may mess up someone's work' (indirect) and 'I have trouble controlling my temper' (anger). Further to the AQ-15 items, the remaining three items from the full length BWAQ indirect aggression scale were added to the AQ-15 in the current study to enhance the scope of the sub-scale. The additional items, including 'I sometimes spread gossip about people I don't like', capture the socially manipulative aspect of indirect aggression that is otherwise missed by the AQ-15. Good psychometric properties have been reported for the BWAQ and AQ-15 (Ang 2005; Buss and Warren 2000; Maxwell 2008). Good internal consistency was found in the current study ($\alpha = .79$ for direct aggression, .61 for indirect aggression, and .64 for anger).

Anxiety Symptoms

The 41-item version of the Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al. 1999) was used to assess symptoms of anxiety. The 41-item SCARED consists of a total anxiety score made up of five subscales: panic disorder (PD), generalised anxiety disorder (GAD), separation anxiety disorder (SAD), social phobia (SP) and significant school avoidance (SSA). Only the PD, GAD and SP scales were used in the current study.

Participants indicated their level of agreement with items using a three-point Likert scale ranging from 0 = 'not true' to 2 = 'often true'. Example items include 'When I get frightened, I feel dizzy' (PD), 'I worry about things working out for me' (GAD) and 'I feel nervous with people I don't know well' (SP). Sound psychometric properties have been reported for the target population (Birmaher et al. 1999; Haley et al. 2011). Excellent internal consistency was found in the current study ($\alpha = .85$ for PD, .85 for GAD, and .86 for SP).

Depressive Symptoms

The Centre for Epidemiological Studies Depression Scale (CES-D; Radloff 1977) is a 20-item measure designed to evaluate experience of depressive symptomatology in adolescents and adults. Participants rate the degree to which they experienced each item during the previous week using a four-point Likert scale ranging from 0 = 'Rarely or none of the time (<1 day)' to 3 = 'Most or all of the time (5–7 days)', with higher scores indicating

greater depressive symptoms. Example items include 'I felt everything I did was an effort', 'I felt lonely' and 'I thought my life had been a failure'. Sound psychometric properties have been reported for the adolescent population (Skorikov and Vandervoort 2003). Good internal consistency was found in the current study ($\alpha = .74$).

Data Analyses

Examination of the data revealed that 0.002 % of total data were missing. One case had more than 5 % missing data from the CES-D and was excluded from subsequent analyses. Data for cases with less than 5 % of item responses missing from any one measure were imputed using the expectation maximisation (EM) method. Three cases with variable scores in excess of ± 3.29 standard deviations were deemed to be outliers and were removed. As such, the sample size was reduced from 241 to 237.

First, means and standard deviations for all study variables, along with bivariate correlations between all study variables were computed. Three multiple regression analyses were then performed to examine whether participants' anger, direct aggression or indirect aggression scores were associated with the anxiety and depression variables. Finally, two indirect-effect models were performed using structural equation modelling to examine the direct and indirect associations between the anxiety and depression variables and anger, direct aggression and indirect aggression. A latent variable labelled 'internalising symptoms' was created with four indicators (PD, GAD, SP and depressive symptoms), while anger, direct aggression and indirect aggression were measured variables. The bootstrapping method outlined by Preacher and Hayes (2008) was employed using 5000 iterations and bias-corrected confidence intervals (CI) set at 95 %.

Results

Means and standard deviations for all study variables, as well as Pearson's Product Moment correlations between all variables are shown in Table 1. Symptoms of PD, GAD and depression were significantly and positively related with anger, direct aggression and indirect aggression. There were no correlations between SP symptoms and anger, direct aggression and indirect aggression.

First, age (continuous) and female sex (dummy variable) were entered in the first step of each of the three equations. Next, PD, GAD, SP and depressive symptom variables were entered into the second step of each equation, with anger, direct aggression and indirect aggression, in turn, as dependent variables. As can be seen in Table 2, no

significant effect was observed for age in any of the regression equations, and a significant and negative effect was observed for female-sex in the regression with direct aggression as the dependant variable. In the second step, depressive symptoms were significantly associated with anger, direct aggression and indirect aggression. However, the PD, GAD and SP failed to account for further significant variance in predicting anger, direct aggression and indirect aggression.

Unstandardised regression coefficients for the model with direct aggression as the outcome variable can be observed in Fig. 1. Overall, the model fit the data well, χ^2 (8, $N = 237$) = 17.00, $p < .05$, CFI = .98, RMSEA = .07. After controlling for anger, the direct effect for internalising symptoms on direct aggression was not significant. However, a significant indirect effect was found for internalising symptoms on direct aggression through anger ($b = .19$, CI = .13 to .25, $p < .001$).

Unstandardised regression coefficients for the indirect aggression model can be observed in Fig. 2. Again, the model showed good fit with the data, χ^2 (8, $N = 237$) = 17.14, $p < .05$, CFI = .98, RMSEA = .07. The direct effect for internalising symptoms on indirect aggression was not significant after controlling for anger. However, a significant indirect effect was found for internalising symptoms on indirect aggression through anger ($b = .13$, CI = .09 to .18, $p < .001$).

Discussion

The first aim of the current study was to examine whether symptoms of panic disorder (PD), social phobia (SP), and generalised anxiety disorder (GAD), as well as symptoms of depression, are positively associated with the emotion of anger, direct aggression and indirect aggression in a sample of adolescents. In line with previous research (Hawkins and Cogle 2011; Moscovitch et al. 2008), and current predictions, PD, GAD and depressive symptoms were each positively correlated with anger as well as direct and indirect aggression. However, contrary to previous research (Hawkins and Cogle 2011), when the contribution of these variables was considered simultaneously in regression analyses, the PD, SP and GAD symptom variables did not explain further significant variance in the anger or aggression variables beyond the significant, positive variance accounted for by depressive symptoms. These results suggest that the relationship observed between anxiety symptoms and aggression might be better explained by depressive symptoms. Some previous studies that have found associations between anxiety and aggression did not control for depressive symptoms. Considering the high comorbidity between anxiety and depression, it is possible

Table 1 Means, standard deviations and correlations for direct aggression, indirect aggression, anger, panic disorder symptoms, generalised anxiety disorder symptoms, social phobia symptoms and depressive symptoms (N = 237)

	M	SD	Direct Agg	Indirect Agg	Anger	PD	GAD	SP	Depress
Direct Agg	12.54	4.76	1						
Indirect Agg	13.13	4.26	.58**	1					
Anger	6.67	2.83	.63**	.57**	1				
PD	5.15	4.38	.19**	.29**	.32**	1			
GAD	7.82	4.54	.16*	.26**	.34**	.62**	1		
SP	5.98	3.76	.03	.08	.11	.38**	.40**	1	
Depress	15.13	10.54	.28**	.33**	.46**	.59**	.58**	.30**	1

** $p < .01$ (two tailed); *Direct Agg* direct aggression, *Indirect Agg* indirect aggression, *Anger* anger, *PD* panic disorder, *GAD* generalised anxiety disorder, *SP* social phobia, *Depress* depressive symptoms

Table 2 Summary of hierarchical regression analyses using panic disorder (PD) symptoms, generalised anxiety disorder (GAD) symptoms, social phobia (SP) symptoms and depressive symptoms to predict anger, direct aggression and indirect aggression, controlling for age and sex (N = 237)

		Anger			Direct aggression			Indirect aggression		
		B	SE	β	B	SE	β	B	SE	β
Step 1	Age	.10	.12	.06	.02	.20	.01	.20	.18	.08
	Female sex	.33	.38	.06	-1.46	.63	-.15*	.05	.57	.01
	Adjusted R ²	.00			.01			-.01		
Step 2	PD symptoms	.04	.05	.06	.13	.09	.12	.16	.08	.17
	GAD symptoms	.08	.05	.13	.03	.09	.03	.06	.08	.06
	SP symptoms	-.06	.05	-.08	-.12	.09	-.09	-.08	.08	-.07
	Depressive symptoms	.10	.02	.38***	.12	.04	.26***	.09	.03	.23**
	Adjusted R ²	.20			.11			.11		

*** $p < .001$, ** $p < .01$, * $p < .05$ (two tailed)

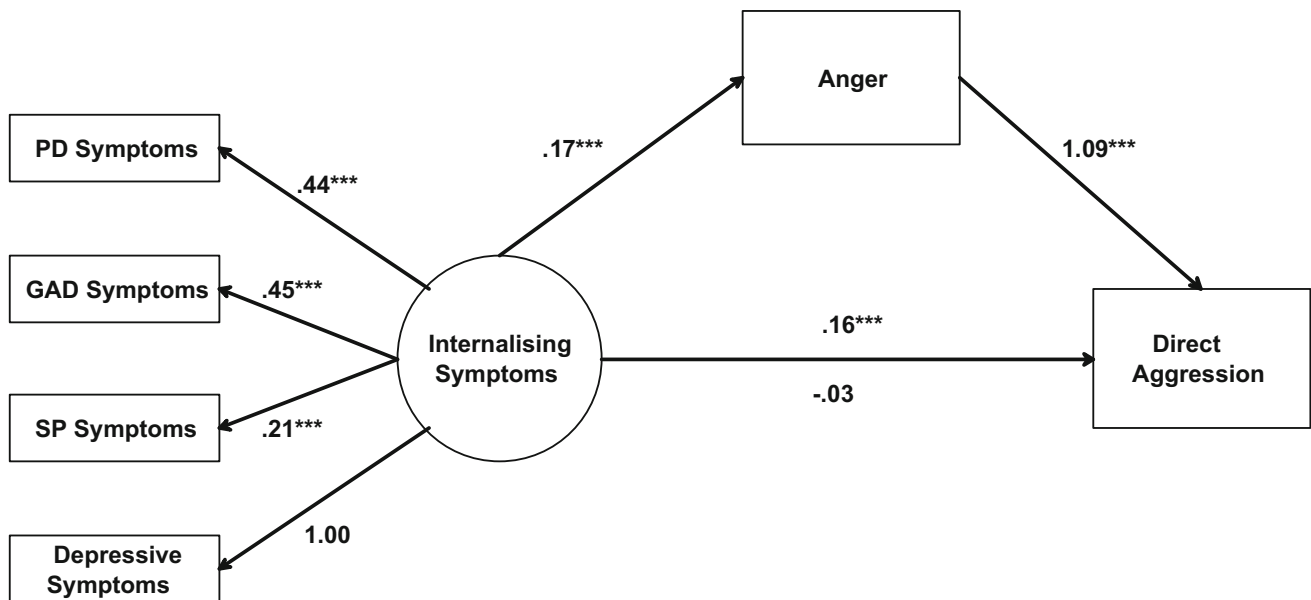


Fig. 1 Indirect effect model of internalising symptoms on direct aggression through anger. All values are unstandardised regression coefficients. Along the horizontal path from the internalising

symptoms variable to direct aggression, the figure above the line represents the total direct effect and the figure below the line represents the direct effect controlling for anger. Note *** $p < .001$

that these studies might have inadvertently captured associations between depression and aggression. Further research is needed to clarify these relationships.

Contrary to previous research (Batanova and Loukas 2011; Loukas et al. 2005) and current predictions, SP symptoms were not related with anger, direct aggression or

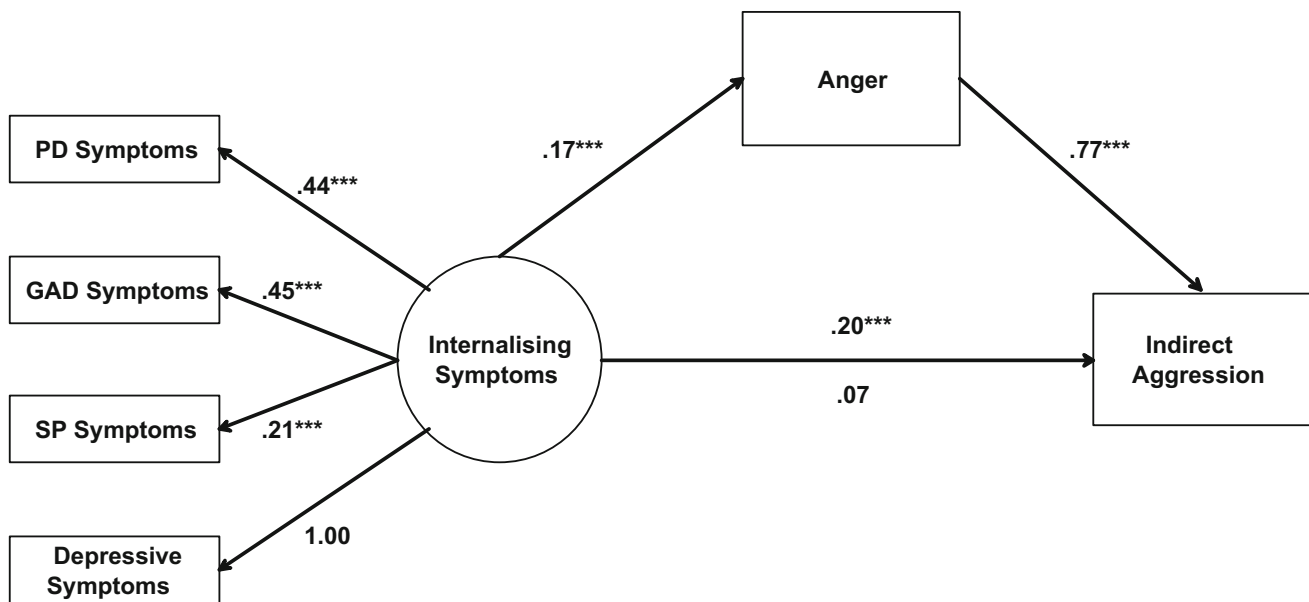


Fig. 2 Indirect effect model of internalising symptoms on indirect aggression through anger. All values are unstandardised regression coefficients. Along the horizontal path from the internalising

symptoms variable to direct aggression, the figure above the line represents the total direct effect and the figure below the line represents the direct effect controlling for anger. Note $***p < .001$

indirect aggression. The results from the current study may differ from previous studies among comparable samples (Batanova and Loukas 2011; Loukas et al. 2005) due to the difference in the anxiety construct measured. While the current study's conceptualisation of SP was relatively general (e.g. item 'I feel nervous with people I don't know well'), Loukas et al. (2005) and Batanova and Loukas (2011) utilised a single scale from a measure of social anxiety measuring specifically a 'fear of negative evaluation' (FNE; e.g. items 'I feel that others make fun of me' and 'I feel that peers talk about me behind my back'). The FNE scale contains items which captured an element of perceived hostility from others, rather than a more general uncomfortableness in social situations which the current measure captures. Perhaps individuals with higher scores on the FNE scale felt a stronger drive to defend themselves against the perceived attack or insult, using anger and aggression, than participants with higher scores on the social phobia scale in the current study. Moreover, some research has shown two distinct subgroups of social phobia (see Kashdan and McKnight 2010), one characterised by shy, submissive behaviour, and the second characterised by aggressive and impulsive behaviour. It is possible that the two different measures used, or perhaps other factors related to the studies discussed here, captured the different subgroups of social phobia found by Kashdan and McKnight (2010).

The current research adds to the literature by examining the relationships between symptoms of discrete internalising disorders and anger and aggression in an adolescent

sample. The findings of this study among adolescents are similar to those reported in adult literature, which suggests that these relationships may exist across a wide range of age groups. Moreover, given that research indicates that anxiety in young children predicts later problems with aggression (Vitaro et al. 2002), and given that these associations are found in adolescent and adult samples, further research is needed to clarify the longitudinal nature of these relationships.

The second aim of the current study was to examine the direct and indirect relationships between internalising symptoms and aggression via the emotion of anger. The results provide support for the hypothesis that, in line with the Cognitive Neoassociation model (Berkowitz 1990, 1993) and the GAM (Anderson and Bushman 2002), the relationship between internalising symptoms and aggression appears to be an indirect one, mediated by the emotion of anger. To the authors' knowledge, this study is the first to examine this model using indirect effect modelling analysis. The current study shows significant indirect effects for internalising symptoms on direct and indirect aggression through the emotion of anger. However, no direct effects were found between internalising symptoms and the aggression variables. These results provide support for the idea that unpleasant internalising symptoms may generate feelings of frustration and anger through the activation of the fight-flight response, which subsequently increases an individual's propensity to aggress.

The results from the current study provide important information which may guide the development of future

interventions for treating aggressive behaviours. Many intervention approaches for aggressive behaviour focus on improving an individual's ability to manage feelings of anger, and developing appropriate expressions of anger without addressing internalising symptoms that may be underlying the aggressive presentation. Such treatments may only serve as a "band-aid" solution. In these instances, intervention strategies which work to improve an individual's awareness and regulation of internalising emotions, might ultimately lead to a reduction in anxiety or sadness as well as associated anger and aggressive behaviours. Indeed, there is some evidence for this in the literature. For example, the Cool Kids program (Rapee et al. 2006) is a CBT-based intervention which teaches children and their parents how to better manage the child's anxiety by focussing on psychoeducation, cognitive restructuring, in vivo exposure and social skills. Research studies have shown that the Cool Kids program significantly reduces both internalising and externalising symptomatology such as aggressive behaviour (Rapee 2013). A study by Levi et al. (2007) compared the original Cool Kids anxiety program with a version integrated with specific anger and aggression strategies. The results showed that both groups were equally effective at reducing internalising and externalising symptoms (Levi et al. 2007). Further studies in this area are required to examine whether there may be potential benefits to treating externalising symptoms through addressing underlying internalising symptomatology.

The results from the current study need to be considered within the context of several limitations. First, the current study utilised a cross sectional design. As such, causation, and therefore mediation, can only be inferred. Furthermore, previous research has shown support for the hypothesis that aggressive behaviour is related to later emotional difficulties (Slemming et al. 2010). As such, future research would benefit from examining the relationships found in the current study using a longitudinal design, considering relationships between internalising symptoms and aggression in each direction simultaneously. Second, the current study was limited to the use of self-report measures, and as such, it is possible that participants' responses may have been exaggerated or minimised in order to fulfil response bias needs. It is also possible that the exclusive use of self-report measures might have introduced common method variance. Future research would benefit from further examination of the current findings using multiple assessment methods such as child interview and parent report.

The current findings indicate that the emotion of anger is an important factor in the relationship between internalising symptoms and aggressive behaviour. Future research would also benefit from investigation of other factors which may impact on how much frustration and anger, if any, an individual experiences, as a result of anxiety and

depressive symptoms. For example, individual differences in emotion regulation, irritability and hostility are likely to impact on how much anger is associated with internalising symptoms. Greater understanding of the ways in which internalising symptoms and aggression co-occur, would have direct implications on the development of intervention strategies designed to treat individuals who present with such complex patterns of emotional and behavioural difficulties.

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