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Relationship Between Indirect Aggression And Social Anxiety In A College Sample

Jennifer A. Kusy
Eastern Illinois University

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RELATIONSHIP BETWEEN INDIRECT AGGRESSION AND SOCIAL ANXIETY IN A COLLEGE SAMPLE

BY

JENNIFER A. KUSY

THESIS

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Abstract

Indirect aggression, a nonphysical form of aggression, has received increased attention in research because of the manipulative nature of the act. While it usually occurs during the preadolescent and adolescent years, research has started to examine its effects in young adult and adult populations. This study examined the link between indirect aggression and social anxiety and social avoidance in a sample of college students. Four distinct groups of aggressors were identified (perpetrator, victim, both, neither), with the majority of students indicating they have had no experience with indirect aggression. Results indicated that those who experienced indirect aggression in some form had higher levels of social anxiety and social avoidance than those who had little to no experience. There was also some evidence that those who identified themselves as victims of indirect aggression had the most social anxiety and avoidance. Very few students identified themselves as perpetrators of indirect aggression; and contrary to expectations, male students did not identify themselves more often than female students as perpetrators. More female than male students indicated they were victims of indirect aggression. Limitations and implications of the present study are discussed. Future research with more representative samples is needed in order to further understand the relationship between anxiety and indirect aggression in a young adult population.

Relationship between Indirect Aggression and Social Anxiety in a College Sample

Research on aggression is abundant. Physical and verbal aggression by males has been investigated the most during the past 50 years, but studies on non-physical forms of aggression by both males and females has been growing (Underwood, Galen, & Paquette, 2001). Recent research has also shown that social anxiety is a particularly relevant personality trait likely to influence anger-related behaviors (Weber, Wiedig, Freyer, & Gralher, 2004) and that individuals high in social anxiety may be more likely to use aggressive means to retaliate (Loudin, Loukas, & Robinson, 2003). This is because individuals who hold negative views of themselves are more likely to perceive themselves as inadequate in social situations. These views increase their attention to rejection which contributes to a generalized defensive approach that increases hostile and aggressive behaviors (Moretti, Holland & McKay, 2001). Additionally, Storch, Brassard, and Masia-Warner (2003a) proposed that social anxiety may be a conditioned response from repeated exposure to peer aggression which leads to the internalization of negative experiences and avoidance of social situations. Previous researchers have suggested, therefore, that social anxiety can both contribute to aggressive behavior and be a consequence of aggressive actions. Because previous researchers have suggested links between aggressive behavior and social anxiety, the present study investigated the relationship between indirect aggressive behaviors and social anxiety in university students.

Definitions of Aggression

Aggression can come in many shapes and sizes. In fact, over 200 different definitions of aggressive behavior have been documented in the research literature (Underwood et al., 2001). Most of the definitions describe aggression as intent to harm and as an action that is upsetting for the receiver (Basow, Cahill, & Phelan, 2007; Bjorkqvist, 2001; Conway, 2005; Crick & Grotpeter, 1995; Forrest, Eatough, & Shevlin, 2005; Heere & Lamb, 1993; Gomes, 2007; Marini, Dane, & Bosacki, 2006). Aggressive actions can be physical or non-physical (Coyne, Archer & Eslea, 2006; Forrest et al., 2005; Loudin et al., 2003) and verbal or nonverbal (Archer & Coyne, 2005; Gomes, 2007; Owens, Shute & Slee, 2000; Storch et al., 2003a; Underwood et al., 2001). Aggression can be performed in a direct or indirect way (Bjorkqvist, Lagerspetz & Kaukiainen, 1992; Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989; Green, Richardson, & Lago, 1996). It can be overt and observable by others, or covert and subtle (Archer & Coyne, 2005; Basow et al., 2007; Coyne et al., 2006; Crick & Grotpeter, 1996; Forrest et al., 2005; Gomes, 2007; Loudin et al., 2003; Storch, Bagner, Geffkin, & Baumeister, 2004). Aggression can be performed with relational intent (Archer & Coyne, 2005; Basow et al., 2007; Bowie, 2007; Coyne et al., 2006; Crick & Grotpeter, 1995; Forrest et al., 2005; Gomes, 2007; Loudin et al., 2003; Moretti et al., 2001; Storch et al., 2004; Young, Boye, & Nelson, 2006). It can also be considered a part of social development (Archer & Coyne, 2005; Cairns et al., 1989; Coyne et al., 2006; Gomes, 2007; Loudin et al., 2003; Merrell, Buchanan, & Tran, 2006).

Peer aggression has been defined as negative, deliberate behaviors that are performed by one or more individuals toward a targeted peer through outward or subtle assaults (Storch et al., 2004). Proactive aggression is unprovoked and used for

instrumental gain, control or domination over others, while reactive aggression occurs as an angry response to provocation or threat (Marsee, Weems, & Taylor, 2008; Moretti & Odgers, 2006). Because nonphysical forms of aggression were the focus of the present research design, nonphysical aggression is described next in more detail.

Nonphysical forms of aggression. Physical forms of aggression encompass an act toward another individual in a physical, observable way (Gomes, 2007). Examples of physical aggression include hitting, pushing, kicking, and threatening (Marsee et al., 2008). Nonphysical forms of aggression, however, can be just as harmful to victims as physical aggression (Loudin et al., 2003). Unfortunately, the research literature has given nonphysical forms of aggression several different names that describe similar constructs, with some distinct differences. Indirect aggression, relational aggression and social aggression all involve social relationships between individuals, whether casual or close in nature, and can be distinguished from direct, physical aggression because they have different goals and are achieved in a different way (Archer & Coyne, 2005). In all three, the aggressor has a need for a sense of control and a willingness to inflict pain on an individual in order to manipulate the individual's relationships in a negative way (Gomes, 2007). Although the different names for nonphysical aggression tend to correlate significantly with each other (Bjorkqvist, 2001), there is a debate on the terms' similarities and which one captures the harmful behaviors being inflicted on the target best (Bjorkqvist, 2001; Loudin et al., 2003).

Indirect aggression. Indirect aggression includes social manipulation or using other people to attack a target. It involves manipulation of the social network in order to exclude the target person from friendship groups. It is delivered covertly or in a

round-about way, not directly, and the aggressor tries to remain unidentified (Bjorkqvist, 2001; Coyne et al., 2006; Green et al., 1996; Loudin et al., 2003; Kaukiainen et al., 1999); hence, the term covert aggression is synonymous with indirect aggression (Gomes, 2007). Archer and Coyne (2005) described indirect aggression as a low-cost way of inflicting harm. Examples of indirect or covert aggression include persuading others to dislike a peer, befriending another peer as a form of revenge, sharing a person's secrets, gossiping about people behind their back, spreading rumors to discredit an individual, telling others to avoid a peer, destroying the target's property (Marini et al., 2006; Miller & Vaillancourt, 2007; Walker, Richardson, & Green, 2000), writing nasty notes, robbing the target (Coyne et al., 2006), and spreading misinformation (Basow et al., 2007). Behaviors such as rumor spreading or gossiping can maximize concealment of identity and minimize the chance for retribution (Loudin et al., 2003). Indirect aggression is preferred over direct aggression because the aggressors have a desire to be in the best social group and stay there by obtaining social power. They have a desire to control others. There are small costs for this behavior since it is harder to detect or observe than overt behaviors. Indirect or covert aggression usually does not appear until later in childhood when verbal and social skills develop well enough to manipulate peers (Coyne & Whitehead, 2008; Gomes, 2007).

Relational aggression. Relational aggression, also termed as relational victimization and relational bullying (Dempsey & Storch, 2008; Gomes, 2007; La Greca & Harrison, 2005; Storch et al., 2003a), is similar to indirect aggression as it is an attempt to harm others through purposeful manipulation. This maltreatment focuses on damaging the interpersonal relationships of an individual, their social standing in a group (Crick &

Grotpeter, 1995; Gomes, 2007; Loudin et al., 2003; Marsee et al., 2008), and feelings of acceptance, friendship, and group inclusion (Archer & Coyne, 2005; Coyne et al., 2006). It can be used to gain control over an individual who is perceived to be a threat to the aggressor or to gain and maintain approval of a peer group by excluding those perceived as less popular (Gomes, 2007). Examples of relational aggression include social exclusion from activities, spreading rumors, gossiping, sharing secrets (Basow et al., 2007; Crick & Grotpeter, 1995; Dempsey & Storch, 2008), withholding friendship (Bowie, 2007), and ignoring the individual (Coyne et al., 2006; Sandstrom, 2007). The emphasis of relational aggression is on social interactions between individuals and is different from verbal and physical aggression because it is done in a more covert fashion (Forrest et al., 2005); yet, may create just as much, if not more, damage to the target individual (Crick & Grotpeter, 1996; Young et al., 2006). Unlike indirect aggression, however, the aggressive behavior associated with relational aggression is not always covert or indirect. Relationally aggressive tactics can happen directly in front of and toward the peer using confrontational strategies in order to embarrass, discredit or control the target (Archer & Coyne, 2005; Coyne et al., 2006; Coyne, Archer, Eslea, & Liechty, 2008; Crothers, Field, & Kolbert, 2005; Merrell et al., 2006; Young et al., 2006).

Social aggression. The goal of social aggression is to damage another's self-esteem, social status, or both. Social aggression combines features of both relational aggression and indirect aggression. The behaviors of social aggression may be direct or indirect. They can be in the form of verbal rejection, nonverbal cues such as negative facial expressions or body movement, rumors, or social exclusion (Archer & Coyne, 2005; Coyne et al., 2006; Gomes, 2007; Loudin et al., 2003). Previously, social

aggression was defined as non-confrontational, indirect, and used the social community as a means to aggress. This was done through gossip, rumor spreading, and making fun of someone behind her or his back (Cairns et al., 1989). The definition has now expanded to represent a broader category including physical behaviors occurring in social settings, such as getting into a physical fight in front of everyone at school (Merrell et al., 2006).

Comparison of three forms of nonphysical aggression. The three forms of aggression all involve social relationships between individuals, and can be distinguished from direct, physical aggression because of how and why they are carried out. All three contain a need for control and a willingness to inflict pain in order to manipulate the individual's relationships. Indirect aggression involves manipulating the social network in order to hurt or exclude an individual from a friendship group, while attempting to receive the least amount of reciprocation. Relational aggression encompasses indirect aggression tactics and then some. Relational aggression damages or controls individual's relationships through social manipulation, but can be either direct or indirect. Social aggression is a catch-all term describing aggression that occurs in a social setting. It includes all the behaviors that encompass both indirect and relational aggression. Social aggression adds nonverbal cues, facial expressions, and even publicly performed physical aggression to its definition. For the purpose of this study, the focus was on indirect aggression because of its anonymous nature and the desire of the aggressor not to get caught. If individuals attempt to hide the aggression, then they may consciously know of the harm they are causing, possibly making this form of nonphysical aggression more harmful than the other two types, and, thus more in need of research.

Who Uses Indirect Aggression?

The tendency to be aggressive develops over a lifespan. Young children express aggression mostly in a physical manner. Then, as they advance in language development, children's aggressive behavior becomes more verbal. As social cognition develops, aggression becomes more indirect and manipulative (Bjorkqvist, 2001; Forrest et al., 2005; Kaukianinen et al., 1999; Moretti & Odgers, 2006). Not all children are aggressive, however. Several characteristics of those who use indirect aggression have been suggested. For instance, social status may be a prerequisite for effective indirect aggression (Merrell et al., 2006) because of the need for social understanding and an ability to read and decipher social situations (Puckett et al., 2008). Children who use indirect aggression may have a sense of a power imbalance, lack empathy, and a wish to inflict anguish, suffering, distress, and pain because they feel threatened in some manner (Bjorkqvist, 2001). Increased levels of aggression are also associated with poorer interpersonal function and psychological maladjustment (Loudin et al., 2003). Dense social networks can inhibit the use of direct aggression because of the ease of being identified; therefore, the use of indirect aggression is a safer route (Walker et al., 2000).The lack of a social network can also prevent an individual with no friends from using indirect aggression as they cannot effectively influence and manipulate others (Puckett et al., 2008). Interestingly, research has correlated socioeconomic status with indirect aggression. The higher the socioeconomic status, the more often indirect aggression is used over overt aggression (Coyne & Whitehead, 2008).

Popularity also seems to play a role in the use of indirect aggression. Two types of popularity have been identified, including sociometric popularity and perceived popularity. Sociometric popularity is when individuals are well-liked by their peers; they

typically display many prosocial and few aggressive behaviors. Sociometric popularity is related to positive adjustment, psychological well-being, and academic success. Perceived popularity is when individuals are well known and imitated, but not necessarily liked by peers. They show high levels of both prosocial and aggressive behaviors. The perceived popular people seem well adjusted because they are often at the center of attention and are involved in many activities. They are usually socially skilled and thus may perform aggressive acts, but deny intent of harm. As a result, these individuals may not face negative consequences from their aggressive behavior. Perceived popular individuals also may become aggressive as a way of maintaining their social status (Puckett et al., 2008; Rose & Swenson, 2009).

Most reports of aggression by perceived popular individuals have occurred in adolescence for both boys and girls and researchers have reported an association between aggressive behaviors and gains in social identity within the social hierarchy of peer groups (Coyne et al., 2008; Culotta & Goldstein, 2008; Dempsey & Storch, 2008; Marsee et al., 2008; Puckett et al., 2008). Research has also found that although aggressive manipulation may help obtain social status temporarily, it may alienate peers in the long run. Alternating aggressive behavior with prosocial behavior helps maintain the social status longer (Puckett et al., 2008). Aggressors are more likely to be disliked by peers over time, however, and may experience anxiety (Marini et al., 2006), depression, loneliness, and externalizing problems (Crick & Grotpeter, 1995; Werner & Crick, 1999).

Social information processing bias. Another suggestion for why some individuals respond in an aggressive manner is the social information processing bias because elevated levels of social-related aggression result from how individuals perceive

and interpret other's behaviors and intentions (Loudin et al., 2003). People engage in social information processing when in an attempt to understand and interpret situations that have influenced their behavior. Social information is influenced by our past experiences and biological potential, both of which are present before a social encounter. Then, during a social encounter, individual's social behavior is enacted from a series of steps including encoding social cues, creating goals, constructing responses, making decisions, and acting out a behavior. Skill in processing each step is proposed to lead to competence of social situations, while biased processing may lead to deviant or aggressive social behavior. How children think about themselves and the kind of person they are has been linked to how they encode social relationships (Lemerise & Arsenio, 2000).

Aggressive individuals perceive, interpret, and make decisions about social situations in biased ways that increase the likelihood of aggressive acts (Crick & Dodge, 1996; Crick et al., 2002; Moretti et al., 2001). They associate prior expectations and self-schemas, rather than current relevant cues, to interpret social situations as innocent or hostile (Moretti et al., 2001). These individuals misinterpret peer behavior, perceiving ambiguous or innocent social cues to be hostile or negative, which may cause them to retaliate and act aggressive in return. This may ostracize the individual, increasing loneliness and distress, which then increases maladaptive methods of coping with the distress (Marsee et al., 2008; Moretti & Odgers, 2006; Murray-Close et al., 2006; Storch et al., 2004). When people experience negative outcomes from peers in a situation where intentions are not clear, they may perceive the situation as hostile and thus confirm their expectation for future hostile incidences. It creates a bias for individuals who think they

are being aggressed against and allow them to feel justified for their actions (Marsee et al., 2008). Because of an information processing bias, aggressive individuals are more likely to use instrumental rather than relational goals and evaluate their aggressive responses in a relatively positive manner (Murray-Close et al., 2006).

Gender differences. Children use indirect aggressive behaviors that are most effective in harming the social goals of their peers, and females have traditionally been viewed as less aggressive than males (Bjorkqvist et al., 1992; Coyne et al., 2008). Boys may use physical aggression as a way of harming instrumental goals of peers and for gaining mental and physical dominance; girls, however, use indirect aggression to prevent social relational goals, such as another's feeling of inclusion in a group (Conway, 2005; Crick & Grotpeter, 1995; Storch et al., 2004). Indirect aggression is more often exhibited by girls, who target both boys and girls (Coyne et al., 2006; Coyne & Whitehead, 2008; Crick & Grotpeter, 1996; Forrest et al., 2005). These gender differences in aggressive behaviors are apparent in childhood and early adolescence, but tend to disappear as adolescents grow older. Older female and male adolescents begin to use similar amounts of verbal and indirect aggression because physical aggression becomes less acceptable with age (Forrest et al., 2005).

Some suggested reasons why girls indirectly aggress earlier than boys are that girls mature more quickly than boys and because of gender role stereotypes – overt, physical aggression is not as socially acceptable for girls (Basow et al., 2007; Coyne & Whitehead, 2008; Crothers et al., 2005; Forrest et al., 2005; Underwood et al., 2001). Another explanation for why girls are more likely to express indirect aggression than boys is that girls learn to express frustration and emotion in an approach that has been

viewed as non-threatening (Gomes, 2007). Girls are more likely to fight with others with whom they have close relationships rather than strangers (Letendre, 2007). They value social relationships, emotional closeness, and support, while boys emphasize individuality and larger, less close groups (Marsee et al., 2008). Because of this, girls can use indirect aggression more effectively (Owens et al., 2000). The tight knit groups and cliques that girls form tend to engage in high levels of self-disclosure, which can help with the development of indirect aggression in order to gain control (Grotpeter & Crick, 1996). The act of excluding or embarrassing the target from the group may succeed in having the target lose all, if not most, of her friends (Miller & Vaillancourt, 2007). Girls perceive indirect aggression as more harmful than boys do and report more depressive symptoms related to interpersonal difficulties (Dempsey & Storch, 2008).

Research has shown that adolescent girls who use indirect social aggression experience less maladjustment than girls who use physical violence; boys who use gender-normed or physical aggression are also more adjusted (Bagner, Storch, & Preston, 2007; Coyne et al., 2008). Indirect aggression, however, is sometimes associated with future adjustment difficulties for boys and girls, both for aggressors and targets (Crick, Grotpeter, & Bigbee, 2002). For instance, research has found that socially aggressive boys tend to display high levels of anxiety and depression. Marsee et al. (2008) hypothesized that an increased level of anxiety in boys may lead them to use aggression in a more discrete way. Additionally, indirect aggression used in romantic relationships may lead to higher adjustment problems than does peer aggression (Bagner et al., 2007; Coyne & Whitehead, 2008).

Adults. Although much of the research on indirect aggression has been carried out using children as participants, it has recently expanded to the adult population. Adult indirect aggression has been described as having two forms: social manipulation and rational-appearing aggression. Social manipulation aggression mirrors the indirect aggression definition in which the aggressors have intent to harm an individual in a round-about way in order for the aggressor to remain anonymous. Rational-appearing aggression is a sophisticated form whereby the aggressor tries to make the aggression not appear as actual aggression. Typically seen in a workplace environment, examples of rational-appearing aggression include behaviors related to reducing opportunities for others to express themselves, criticizing others, and questioning someone's judgment (Forrest et al., 2005). Adults may use indirect aggression strategies as way of dealing with interpersonal conflict (Walker et al., 2000). Indirect aggression in adults has been associated with higher levels of peer rejection, antisocial personality features, borderline personality features, low levels of prosocial behavior, bulimic symptoms, and alcohol use (Loudin et al., 2003; Storch et al., 2004; Storch, Werner, & Storch, 2003b; Werner & Crick, 1999).

Almost all researchers have reported no gender differences for displays of indirect aggression in adults. On the other hand, research suggests that gender differences may depend on the aggressor's age, target gender, circumstances, and how the aggression is being measured (Basow et al., 2007). Two plausible explanations for a lack of gender differences in adults may be because of less emphasis on popularity as a social goal in adulthood and because men have acquired verbal and social skills equal to those of women (Bjorkqvist et al., 1992; Coyne et al., 2006). Another reason may be because

women have levels of anger equal to men and thus have the same potential for causing harm (Forest et al., 2005). Interestingly, a study with college students found that indirect aggression performed by women and physical aggression performed by men was viewed more negatively than if women were physically aggressive and men were indirectly aggressive (Coyne et al., 2008).

Consequences of Indirect Aggression

Being a target of indirect aggression is correlated with social-psychological maladjustment including peer rejection, externalizing problems, and internalizing problems. Externalizing problems identified consist of delinquency, school avoidance, poor academic achievement, social avoidance, and self-restraint issues. Specific internalizing problems that are associated with being a victim of indirect aggression are loneliness, depression, lower self-worth, social anxiety, general anxiety, lower self-esteem, somatic complaints and emotional instability (Coyne et al., 2008; Crick & Grotpeter, 1996; Dempsey & Storch, 2008; La Greca & Harrison, 2005; Miller & Vaillancourt, 2007; Storch, Masia-Warner, Crisp, & Klein, 2005; Young et al., 2006). Neglect from peers may leave children without resources for coping with social or emotional issues, making friends, or receiving help (Crick & Grotpeter, 1996). They may have more negative thoughts about their physical appearance, romantic appeal, and close friendships (Coyne et al., 2006). Because of a defensive reaction to perceived aggression, victims may react using indirect aggression themselves (Moretti et al., 2001; Neal, 2007). Researchers hypothesize that victims of indirect aggression may internalize negative feedback from the aggressors, which results in an increase in social anxiety (Storch et al., 2005). Social anxiety is described in the next section.

Social Anxiety

Social anxiety, formally termed social phobia, has been classified as a disorder ever since it was introduced in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III) in 1980 (Ham, Hayes & Hope, 2005; Iwase et al., 2000). Social anxiety represents a fear of performance or social interaction that significantly inhibits a person's social or occupational functioning. It is a complex concept containing physiological, cognitive, and behavioral aspects that are influenced by environmental and internal variables (van Dam-Baggen, Kraaimatt, & Elal, 2003). Physical symptoms related to the anxiety include a rapid heart rate, trembling, shortness of breath, sweating, and abdominal pain (Rosenthal, Jacobs, Marcus & Katzman, 2007). Because of the physical component, the greater the anxiety, the more obvious the physical symptoms become (Mauss, Wilhelm, & Groos, 2004).

Cognitive symptoms consist of maladaptive thoughts and beliefs about social situations, such as having a combination of fear, apprehension and worry over being unable to make a positive impression on others. It is this fear of social situations and negative evaluations from others that may lead to feelings of inadequacy, embarrassment, humiliation, and depression. Those with social anxiety may feel distressed when introduced to new people, when they are the center of attention, and when watched while performing a task (Reid & Reid, 2007; Rosenthal et al., 2007; Urani, Miller, Johnson, & Petzel, 2003; Walsh, 2002). They have a heightened sensitivity to self-awareness and possible negative evaluations and tend to avoid social interactions (Kocovski & Endler, 2000; Leber, Heidenreich, Stangier, & Hofmann, 2009; Torgrud et al., 2004). This self-awareness sensitivity is assumed to play an important role in the maintenance of social

anxiety. They end up directing too much attention to themselves during the social interactions and ignore important aspects of the task, other people, and the environment (Bogels, Rijsemus, & De Jong, 2002; Vassilopoulos, 2005). Often, they may have trouble building and maintaining relationships, which can lead them to feel isolated and depressed (Rosenthal et al., 2007).

Social anxiety is not uncommon. It is the most common anxiety disorder and the third most common psychiatric disorder after depression and alcohol dependency (Rosenthal et al., 2007). It is estimated that 13% of the individuals diagnosed with social anxiety maintain the disorder over their lifetime (Ham et al., 2005; Walsh, 2002). It differs from generalized anxiety disorder because of the specific social-situation aspects and the fear of being judged by others (Carron, Estabrooks, Horton, Prapavessis, & Hausenblas, 1999). Social phobia has been viewed as an extreme form of social anxiety affecting up to 8% of the adult population, beginning around age 15, and occurring over a long period of time. Symptoms occasionally remit and are followed by relapses (Walsh, 2002). Social phobia causes a significant amount of distress and those suffering often recognize the excessiveness of the fear (La Greca & Lopez, 1998; Madell & Muncer, 2006). Individuals with social anxiety disorder are often overwhelmed by the intensity of the anxiety experiences and by the interference in their daily functioning (Dell'Osso et al., 2003).

Some risk factors for social anxiety development include social demographic characteristics, temperamental traits, autonomic nervous system reactivity, stress reactivity, pre-existing medical and psychiatric disorders, and life experiences (Merikangas, Lieb, Wittchen, & Avenevoli, 2003). There is a high comorbidity rate for

other disorders when an individual has social anxiety. They are more likely to have other anxiety, emotional, and mood disorders and an increased likelihood for drinking alcohol (Cunha, Gouveia, & Salvador, 2008; Walsh, 2002). Avoidant personality disorder shares several diagnostic characteristics with social anxiety disorder (Tillfors, Furmark, Ekselius, & Fredrikson, 2004). In 1987, a generalized type category was introduced in the DSM-III-Revised to indicate when the social phobia occurs in most situations.

Symptoms of social anxiety. Research reports have found that symptoms of social anxiety can include shyness, social inhibition, interpersonal anxiety, communication apprehension, embarrassment, reserve, and self-consciousness (van Dam-Baggen et al., 2003). Adolescents who display symptoms of social anxiety report lower levels of social functioning, friendships, intimacy, companionships, self-esteem, self-reinforcement, achievement, and support than those who do not display symptoms (Kocovski & Endler, 2000; Urani et al., 2003). They also may exhibit reserved social behavior and be passive in group conversations (Darcy, Danvila, & Beck, 2005). Individuals with social anxiety typically view themselves as unable to make positive impressions, lacking in social status and as socially undesirable (Kashdan & Steger, 2006; Oaten, Williams, Jones, & Zadro, 2008). Socially anxious individuals may engage in safety behaviors such as concealing emotional responding, avoiding eye-contact, talking very little to avoid being laughed at, talking too much so they do not appear boring, or not laughing until others laugh first. These behaviors are meant to lessen the opportunities to be observed negatively and rejected by others; however, the behaviors can disrupt social interactions and lead to further rejection (Kashdan & Steger, 2006; Voncken, Alden, Bogels, & Roelofs, 2008).

Gender and social anxiety. Research has found that social anxiety disorder is two times more common in women than men; this may be because women report more distress and psychopathological symptoms when interpersonal relationships are disturbed. Also, adolescent girls seem to be more concerned about others' judgments of their appearance and behavior than boys (Ham et al., 2005; La Greca & Lopez, 1998).

Characteristics associated with social anxiety. Being near a best friend can decrease anxiety symptoms (La Greca & Harrison, 2005; La Greca & Lopez, 1998). Indeed, positive aspects of close friendships have been connected not only to lower levels of social anxiety, but also increased positive self-esteem and better psychosocial adjustment. High quality friendship can also lessen the effects of peer group rejection (La Greca & Harrison, 2005). Membership in a large peer group can lessen anxiety because large groups can give the impression of being lost in the crowd, causing self-awareness to decrease (Carron et al., 1999). Also, anxiety may be reduced if evaluation is spread throughout the group and the individual is not the only one being judged (Carron et al., 1999).

If having close friendships are associated with lower levels of social anxiety, it is not surprising that individuals with social anxiety report lower levels of perceived social support (Ham et al., 2005; Torgrud et al., 2004). Researchers have hypothesized that socially anxious people evoke negative responses in others because they are perceived as less likeable, less comfortable to be around, less socially skilled, less friendly, less assertive, less relaxed, and less attractive (Voncken et al., 2008). Social exclusion is the core fear of socially anxious people, and perceptions of exclusion from a peer group may contribute further to feelings of anxiety, limit interactions with peers, and inhibit dating

and attachments (Oaten et al., 2008). Anxious children are often less accepted by peers and those who are rejected and neglected by their peers are more socially anxious. This limiting of peer interactions interferes with the development of close friendships and social support (La Greca & Lopez, 1998).

Researchers have also suggested that individuals with social anxiety display attentional bias (Huppert, Foa, Furr, Filip, & Mathews, 2003; Leber et al., 2009; Muhlberger, Wieser, Pauli, 2008; Oaten et al., 2008; Ononaiye, Turpin, & Reidy, 2007; Vassilopoulos, 2005; Voncken et al., 2008). This tendency toward attentional bias suggests that anxious individuals focus their attention toward what they perceive to be threatening stimuli relevant to immediate concerns and ignore important information or social cues that could disprove their irrational beliefs. They also tend to engage in interpretational bias as indicated by a tendency to interpret ambiguous social situations or social reactions in a negative manner (Huppert et al., 2003; Oaten et al., 2008; Voncken et al., 2008).

Indirect Aggression and Social Anxiety

Although the research has been limited, previous research reports have indicated that individuals with social anxiety are likely to be perpetrators or targets of indirect aggression. Socially anxious individuals report a greater frequency of negative peer interactions, and are often rated by peers as rejected, neglected, or both (Moretti et al., 2001; Storch et al., 2003a; Storch et al., 2005). La Greca and Harrison (2005) found that adolescents' peer group status, positive exchanges with best friends and having a dating relationship help to shield them against feelings of social anxiety, while negative

interactions with close friends and indirect aggression may have contributed to social anxiety.

Perpetrators and social anxiety. Indirect aggression may be a useful method that anxious individuals use to transfer negative attention away from themselves and onto others in the group because of fear of negative evaluation about themselves and because of the decreased likelihood for being caught (Loudin et al., 2003; Storch et al., 2004). Marsee et al. (2008) reported that when children and adolescents were highly anxious, boys showed greater levels of relational aggression than girls. Storch and his colleagues (2004) investigated aggression and social anxiety within a college sample. They found that male college students were more overtly and relationally aggressive than female students and the researchers reported moderate correlations between social anxiety and both overt and relational aggression. Loudin et al. (2003) examined the roles of social anxiety and empathy in relationally aggressive behaviors of male and female college students. Relational aggressive behavior was related to lower levels of perspective taking and greater fear of negative evaluation, a form of social anxiety. Males who reported less empathetic concern were more likely to exhibit relational aggression than other males.

Victims and social anxiety. Some researchers have reported that victims of indirect aggression are also likely to be more socially anxious. Victims of indirect aggression may not know what they did wrong to receive the negative treatment, which may lead them to strive to never do anything wrong again. They may attempt to be perfect so as to not be rejected in the future by peers. Perfection seeking is a characteristic related to social anxiety (Miller & Vaillancourt, 2007). Social anxiety may also be a direct response to frequent exposure to peer aggression, which leads to

internalizing negative peer experiences and avoidance of social interactions (Storch et al., 2003a; Storch et al., 2005). Storch et al. (2003a) found that both adolescent boys and girls identifying themselves as victims of relational aggression reported higher levels of negative adjustment, fear of negative evaluation, physiological symptoms, and social avoidance than non-victims. They also found that individuals who were victimized in more than one form reported more social anxiety and loneliness. In a retrospective study with college students, Dempsey and Storch (2008) found that regardless of the sex of the individual or perceived social support, depressive symptoms and fear of negative evaluation were associated with self-reported victimization.

Summary

As research on aggression continues, definitions abound. Today, researchers are less focused on physical aggression and are more interested in non-physical, indirect aggression. The amount and type of aggression displayed changes from childhood through adulthood. As individuals age, they become more advanced in their aggressive techniques, with the most advanced being the relational, indirect type of aggression. Previous researchers have found that females first display forms of this type of social aggression at younger ages than males, but by the end of adolescence, the amount of indirect and relational aggression becomes equal for both sexes.

Previous research has indicated that adolescents and young adults with social anxiety are at risk for being perpetrators or targets of indirect aggression. Individuals who are socially anxious report more experiences with negative peer interactions, including indirect aggression. The limited research on the relationship between social anxiety and aggressive behaviors has reported that socially anxious male adolescents and

college students may be more likely than female adolescents and college students to display aggressive behaviors. While research on aggression performed by children and adolescents is crucial in creating safe environments in primary and secondary schools, it is also important to study indirect aggression in late adolescence and young adulthood. Possible anxiety associated with major life transitions occuring during this time may place individuals at risk for indirect aggression.

The Present Study

Social anxiety is a condition that affects many individuals (Rosenthal et al., 2007). Because researchers have reported that people who are socially anxious are more likely to display or be victims of indirect aggressive behaviors (e.g., Loudin et al., 2003; Storch et al., 2005) and because the research on the relationship between social anxiety and aggressive behavior has been limited, the purpose of this study was to measure the relationship between indirect aggression and social anxiety in a college sample using self-report scales. The goal of the present study was to examine how social anxiety relates (i.e., existence of more or less social anxiety) to whether college students identify with being an aggressor, victim of aggression, both a victim and aggressor, or neither.

Based on previous research results, the researcher of the present study hypothesized that:

1. As indicated in previous research (e.g., Loudin et al., 2003; Marsee et al., 2008; Miller & Vaillancourt, 2007; Storch et al., 2004), individuals who report using indirect aggression, those who report being victims of indirect aggression, and those who identify with both categories are expected to report more symptoms of social anxiety than

individuals who indicate being neutral or having limited experience with indirect aggression.

2. Previous research has shown that both aggressors and victims may display a fear of negative evaluation (e.g., Loudin et al., 2003; Storch et al., 2004). Because of this, it is expected that individuals who identify with both aggressor and victim characteristics, will display the most social anxiety.

3. Based on previous research (e.g., Storch et al., 2004), it was expected that male college students will report being the perpetrators of indirect aggression more often than do female college students.

Method

Participants

The participants included 186 female and 54 male undergraduate students at a Midwestern university. Students participated in the study in partial fulfillment of the requirements for an introductory course in psychology through an online research webpage that listed many different research projects. Demographic information related to age, race, sex, year level in school, major, and location of permanent address was collected. The ages of 238 (two declined) of the participants ranged from 17 to 30 with a mean age of 18.61; 149 (62%) of the individuals were 18 years old and 60 (25%) participants were 19 years old. Most of the participants (73.8%) were freshmen (N = 177); 19% were sophomores (N = 46); 5% were juniors (N = 13); 1.3% were seniors (N = 3); and, one individual was a graduate student. Of those who identified their race, 183 were Caucasian (76.3%); 31 were African American (12.9%); 6 were Hispanic (2.5%); 1

was Asian; 1 was Native American; 4 were multiracial; and, 3 identified as other ethnicity. No identifying information was retained.

Materials

Indirect aggression. Indirect aggression was measured using two scales developed by Forrest, Eatough, and Shevlin (2005) specifically for an adolescent population: the Indirect Aggression Scale-Aggressor Version (IAS-A) and the Indirect Aggression Scale-Target Version (IAS-T). Both scales have the same three subscales: social exclusion (10 items) (e.g., withheld information from them that the rest of the group is let in on), use of malicious humor (9 items) (e.g., used sarcasm to insult me), and guilt induction (6 items) (e.g., used their feelings to coerce them). The 25 items are similarly worded between the aggressor and target versions. The point of view of the statements changes for each scale; one is the point of view of an aggressor and the other is from the viewpoint of the target of indirect aggression. Each subscale for the aggressor and target scales had Cronbach's alpha coefficients greater than .80, suggesting strong internal consistency. The authors of the scale (Forrest et al., 2005) found no significant sex differences relative to indirect aggression for either scale. They reported a significant negative correlation for aggression and age on all subscales for aggressor and target, respectively (social exclusion r = -.141, -.154, malicious humor r = -.303, -.36, aggressor guilt induction r = -.117), except target guilt induction (r = .013), suggesting indirect aggressive behavior lessens with age. There were more reports of being a victim than

being an instigator or perpetrator of indirect aggression and the authors suggest that this may reflect a weakness of self-report measures (Forrest et al., 2005).

For the purpose of this study, scores on the IAS were calculated as a total aggressor score and total target or victim score for each participant. Based on their overall scores, participants were then categorized into one of the four groups: aggressor, victim, neither, or both. For the IAS-A, a score of 60 was at the 91st percentile. To score 60 points, an individual rated items as "once or twice" and "sometimes" consistently or rated multiple items consistently high. Analysis of the IAS-T indicated that a score of 60 was at the 82nd percentile. Like the aggressor scale, to score 60 points, an individual rated items as "once or twice" and "sometimes" consistently or rated multiple items consistently high. Because performing or experiencing indirect aggression some of the time is enough to cause concern over the long term, especially if the incidences cause significant impact on an individual, a score of 60 on either the aggressor or target versions of the IAS was used as the cutoff to assign participants as aggressors or victims of indirect aggression in the present study. Participants who scored 60 or higher on both versions were assigned to the group who had experience as both the aggressor and target or victim of indirect aggression. Those who scored below 60 on both scales were included in the group reporting no experience with indirect aggression.

Social anxiety. Social anxiety was measured using the Social Anxiety and Avoidance Scale for Adolescents (SAASA) developed by Cunha, Gouveia, and do Ceu Salvador (2008). The SAASA has two subscales: the distress/anxiety subscale and the avoidance subscale. These subscales in the original study by Cunha et al. (2008) were measured simultaneously because participants indicated how likely they would feel

anxious and how likely they would avoid the same stated item. For the purpose of this study, the distress/anxiety and avoidance subscales were split and administered separately to increase the participant's attention on the task and decrease the influence of a possible response bias. There were 34 different items total (e.g., eating in public, meeting strangers, changing in the locker room, writing while being observed). As indicated earlier, for each item, participants specified on a 5 point scale how likely they would feel anxious and how probable it would be they would avoid the situation. Cunha et al, (2008) identified a high correlation between the two scales, likely because the same items are used on both. For both scales, the Cronbach's alpha was higher than .85 and showed moderate stability over time with a correlation of $r = .74$ for the distress/anxiety subscale, and $r = .71$ for avoidance. Six factors were indicated for both subscales: interaction in new social situations, interaction with the opposite sex, performance in formal social situations, assertive interaction, observation by others, and eating and drinking in public.

Swets, Dawes and Monahan (2000) did an analysis to identify useful cut off points in order to discriminate between those with social anxiety and those without. For boys, the cut off was established at equal to or greater than 68, with a sensitivity of 70% and specificity of 80%. The cut off point for girls was established at equal to or greater than 76 points, with a sensitivity of 80% and specificity of 83%. Sensitivity measures the true positives that are correctly identified and specificity measures true negatives that are correctly identified. The higher the sensitivity and specificity scores for a questionnaire, the more reliable and valid the measure.

Procedure

Each participant in the present study completed the questionnaires online individually. This was accomplished by setting up the study on the university's online study page. The first page asked participants to provide background information, such as gender, age, year level in school, ethnicity, major, and location of permanent address. The questionnaires were divided into four sections, including IAS-A, IAS-T, Anxiety, and Avoidance. The sections were presented in random order on the webpage to minimize order effects. The SAASA was originally a combined scale measuring both anxiety and avoidance at the same time, but for the purpose of this study, the anxiety and avoidance scales were presented as two separate scales so the participants could focus on their anxiety and avoidant behavior separately. Also, to avoid vocabulary confusion, the word "colleagues" on a few items was changed to "peers".

The social anxiety scale instructions were, "Below are situations that might cause an individual to feel anxious or have anxiety. On a scale of 1-5, rate each statement on how much anxiety or distress you would or have felt in that situation. If you have never been in the situation, imagine how you would feel if it did happen to you (1 "None"; 2 "A little"; 3 "Some"; 4 "Much"; 5 "Very much")." The social avoidance scale instructions were, "Below are situations that individuals may want to avoid for fear of being judged. On a scale of 1-5, rate each statement on how likely you would avoid the following situations. If you have never been in the situation, imagine what you would do if you ever were in the situation (1 "Never"; 2 "Sometimes"; 3 "Many times"; 4 "Most of the time"; 5 "Almost always")." The total scores for the social anxiety and social avoidance scales were used as the dependent variables.

Participants completed both indirect aggression sections concerning aggressor and target point of views. The instructions for the indirect aggressor scale were, "Think about the past 12 months with your friends, peers, and co-workers. On a scale of 1-5, rate how often you think you have done the actions stated below (1 "Never"; 2 "Once or Twice"; 3 "Sometimes"; 4 "Often"; and 5 "Regularly")." The instructions for the indirect target scale were, "Think about the past 12 months with your friends, peers, and co-workers. On a scale of 1-5, rate how often you think you have had the actions stated below done toward you (1 "Never"; 2 "Once or Twice"; 3 "Sometimes"; 4 "Often"; and 5 "Regularly")." It took participants approximately fifteen minutes to one hour to complete all four questionnaires.

Results

The goal of the present study was to examine how social anxiety and social avoidance related to whether female and male college students identified with being an perpetrator of indirect aggression, victim of indirect aggression, both a victim and aggressor, or neither.

Social Anxiety and Social Avoidance

For descriptive purposes, total sums on the anxiety and avoidance scales were calculated for the entire sample of participants. Many of the college student participants described themselves as socially anxious and socially avoidant and Table 1 below illustrates the number of participants who fell within each possible category of anxiety and avoidance. The mean anxiety score for all of the participants was a score of 78.47, SD = 22.84. For males, the mean anxiety score was 69.24, SD = 23.14 while the mean anxiety score for females was 81.15, SD = 22.10. According to the cut off scores

identified by Swets et al. (2000), 102 out of 186 females (54.8%) met the criteria of a score of 76 or more. Males who met the criteria of 68 or more points, accounted for 9.2% of the sample (22 out of 54).

The mean avoidance score for the total sample was 74.95, SD = 23.55. For males, the mean avoidance score was 65.09, SD = 23.10, while the mean avoidance score for females was 77.81, SD = 22.96. At the cut off score of 76 (Swets et al. 2000), 96 females (51.6%) identified as having social avoidance characteristics. Eighteen males (32.7%) met the cut score of 68 or more for the avoidance scale.

Table 1
Number of Participants Reporting Social Anxiety and Social Avoidance

	Anxious + Avoidant	Anxious	Avoidant	No Anxiety
Male	15 (28%)	8 (15%)	3 (6%)	28 (52%)
Female	82 (44%)	20 (11%)	14 (8%)	70 (38%)
Total	97 (40%)	28 (12%)	17 (7%)	98 (41%)

Indirect Aggression

As mentioned earlier, cut off scores on the IAS-A and IAS-T were used to assign participants to one of four groups related to experience with indirect aggression. Aggressors or perpetrators had a score 60 or higher on the IAS-A and 59 or below on IAS-T; victims had scores below 60 on the IAS-A and above 59 on IAS-T; the neither group had scores on both scales of 59 points or lower; and the both group had scores on both scales of 60 or higher. As Table 2 below indicates, the overwhelming majority of participants reported they had no experience with indirect aggression. As evident in Table 2, very few students identified themselves as perpetrators of indirect aggression; and contrary to expectations, male students appeared no more likely than female students to

indicate they had experience as perpetrators. Inspection of Table 2 also reveals that female students were more likely than male students to fall in the victim category.

Because of these grossly unequal group sizes evident in Table 2, three analyses were completed for the present study: (1) The first analysis grouped participants as indicated in Table 2; (2) A second analysis combined the aggressor, victim and both groups into one group, comparing them with those in the neither group; and (3) The final analysis was similar to the second, but randomly selected only some of the members of the neither group in order to create a group that was more equal in size to the combined group.

Table 2
Number of Participants for Four Aggressor Types

Sex	Aggressor	Victim	Both	Neither
Male	2	3	8	41
Female	3	26	9	148

Four groups and social anxiety. A two-way analysis of variance was conducted with sex of participant and type of aggressor (perpetrator/aggressor, victim, both, or neither) as independent variables and scores on social anxiety as the dependent variable. At an alpha level of .01, there was no significant interaction between the sex of the individual and the identified aggressor type, $F(3, 232) = .39$, $p = .76$, $\eta^2 = .01$. As mentioned earlier, more female than male students met the suggested cutoff for social anxiety. ANOVA results, however, indicated there was no significant main effect for sex of the participant, $F(1, 232) = 1.15$, $p = .28$, $\eta^2 = .01$. However, there was a significant main effect for aggressor type, $F(3, 232) = 5.86$, $p = .001$, $\eta^2 = .07$. Results of Tukey's HSD test showed that regardless of sex, individuals who identified with the victim type

reported significantly more anxiety (M = 95.66, SD = 27.56) than those who reported having no experience with indirect aggression (M = 75.32, SD = 21.04), p = .00. Those who identified as the aggressor type (M = 71.60, SD = 5.94), p = .1, and those who identified with both victim and aggressor types (M = 86.18, SD = 22.79), p = .47 were not significantly different from the victim type (see Table 3 and Table 4).

Table 3
Mean Social Anxiety for Four Groups

Aggressor Type	*Total N*	*Total M*	*Total SD*	*Female N*	*Female M*	*Female SD*	*Male N*	*Male M*	*Male SD*
Aggressor	5	71.60	5.94	3	72.67	5.51	2	70.00	8.49
Victim	29	95.66	27.56	26	95.66	27.56	3	96.00	63.9
Both	17	86.18	22.79	9	92.22	24.23	8	79.38	20.40
Neither	189	75.32	21.04	148	78.11	20.92	41	65.27	18.44

Table 4
ANOVAs Summary for Four Groups with Anxiety

Sources of Variance	*SS*	*df*	*MS*	*F*	*P*	*Partial Eta Squared*	*Power*
Main Effect of Sex	531.29	1	531.29	1.15	.28	.01	.19
Main Effect of Aggressor Type	8098.54	3	2699.51	5.86	.001	.07	.95
Interaction Effect	537.91	3	179.30	.39	.76	.01	.13
Residual	106950.57	232	460.99				

Four groups and social avoidance. A two-way analysis of variance (Identified aggressor type X Sex) was conducted with social avoidance as the dependent variable. At an alpha level of .01, there was no significant interaction between the sex of the individual and the identified aggressor type, F (3, 232) = .22, p = .88, η^2 = .003. Although more female than male students met the cutoff score for social avoidance, there was also

no significant main effect for sex of the participant, F (1, 232) = 1.90, p = .17, η^2 = .01. However, there was a significant main effect for identified aggressor type, F (3, 232) = 4.58, p = .004, η^2 = .06. Results of Tukey's HSD test showed that regardless of sex, individuals who identified with the victim type reported significantly more avoidance (M = *89*.17, SD = 27.86) than those who identified as having no experience with indirect aggression (M = *71.98*, SD = 22.19), p = .001. Those who identified with the aggressor type (M = 69.80, SD = 10.40), p = .29 and those who identified with the both type (M = 85.18, SD = 22.83), p = .94 were also not significantly different from the victim type (see Table 5 and Table 6).

Table 5
Mean Social Avoidance for Four Groups

Aggressor Type	*Total N*	*Total M*	*Total SD*	*Female N*	*Female M*	*Female SD*	*Male N*	*Male M*	*Male SD*
Aggressor	5	69.80	10.40	3	70.33	13.80	2	69.00	7.07
Victim	29	89.17	27.86	26	89.90	25.12	3	83.33	54.10
Both	17	85.18	22.83	9	92.67	23.45	8	76.75	20.23
Neither	189	71.98	22.19	148	74.94	21.79	41	61.29	20.51

Table 6
ANOVAs Summary for Four Groups with Avoidance

Sources of Variance	*SS*	*df*	*MS*	*F*	*P*	*Partial Eta Squared*	*Power*
Main Effect of Sex	950.47	1	950.47	1.90	.17	.01	.28
Main Effect of Aggressor Type	6871.73	3	2290.58	4.58	.004	.06	.89
Interaction Effect	325.90	3	108.64	.22	.88	.003	.09
Residual	115939.16	232	499.74				

Two groups. Because of the extremely small number of participants who were in the aggressor, victim and both categories, follow up analyses were conducted (see Table 7). The individuals who identified as aggressors, victims, and both groups were combined

to represent individuals who have had some experience with indirect aggression and this group was compared to those who reported no experience with indirect aggression. This indirect aggression group sample size of 51 (females = 38; males = 13) was compared to the 189 individuals (females = 148; males = 41) unaffected by indirect aggression. T-tests for independent means were conducted for scores on the social anxiety and the social avoidance scales. At an alpha level of .01, results showed that individuals who were involved in indirect aggression in some way had significantly higher social anxiety (M = 90.14, SD = 25.53) than those who had little to no involvement with indirect aggression within the past year (M = 75.32, SD = 21.04), $t(238) = 4.26$, $p = .00$ (one-tailed). The mean social anxiety of those involved with indirect aggression was .63 standard deviations higher than the mean of those who had little to no involvement. It was also higher than the anxiety level of 74% of the 'neither' individuals.

Results also indicated that individuals who were involved with indirect aggression in some way had significantly higher social avoidance (M = 85.94, SD = 25.35) than those who had little to no involvement in indirect aggression within the past year (M = 71.98, SD = 22.19), $t(238) = 3.87$, $p = .00$ (one-tailed). The mean social avoidance of those involved with indirect aggression was .59 standard deviations higher than the mean of those who had little to no involvement. It was also higher than the avoidance level of 72% of the 'neither' individuals.

Table 7
Means for Social Anxiety and Social Avoidance for Two Groups

Anxiety	*N*	*M*	*SD*
Indirect Aggression	51	90.14	25.53
No Indirect Aggression	189	75.32	21.04
Avoidance	*N*	*M*	*SD*
Indirect Aggression	51	85.94	25.35

No Indirect Aggression 189 71.98 22.19

Two groups with more equal participants. To further increase the equality of the group sizes related to sex and exposure to indirect aggression, a smaller sample was extracted from the data. The number of males and females were randomly reduced to 49 and 53, respectively, and the no experience with indirect aggression, or neither group, was reduced from 189 to 51 individuals.

A two-way (experience/no experience with indirect aggression X sex) analysis of variance was conducted on social anxiety scores for the reduced sample size. At an alpha level of .01, there was no significant interaction between the sex of the individual and experience with indirect aggression, $F(1, 98 = .11, p = .74, \eta^2 = .001$. There was also no significant main effect for sex of the participant, $F(1, 98) = 3.82, p = .053, \eta^2 = .04$. However, there was a significant main effect for group, with those experiencing some form of indirect aggression reporting more social anxiety than those with no such experience, $F(1, 98) = 14.32, p = .000, \eta^2 = .13$ (see Table 8 and Table 9).

Table 8
Mean Social Anxiety for Two Smaller Groups

	Total N	*Total M*	*Total SD*	*Female N*	*Female M*	*Female SD*	*Male N*	*Male M*	*Male SD*
Indirect Aggression	51	90.14	25.53	38	93.00	22.82	13	81.77	31.74
No Indirect Aggression	51	67.20	18.43	15	72.80	18.30	36	64.86	18.22

Table 9
ANOVAs Summary Table for Two Smaller Groups on Anxiety

Sources of Variance	*SS*	*df*	*MS*	*F*	*P*	*Partial Eta Squared*	*Power*
Main Effect of Sex	1858.91	1	1858.91	3.82	.053	.04	.49
Main Effect of Indirect Aggression	6965.75	1	6965.75	14.32	.000	.13	.96
Interaction Effect	54.82	1	54.82	.11	.74	.001	.06
Residual	47667.01	98	486.40				

Another two-way analysis of variance was conducted on social avoidance for the smaller sample. At an alpha level of .01, results showed that there were no significant interaction effects between the sex of the individual and experience with indirect aggression, $F(1, 98) = .01$, $p = .924$, $\eta^2 = .00$. As seen in Tables 10 and 11, however, female participants reported more social avoidance than male participants as indicated in a significant main effect for sex of the participant at an alpha level of .05, $F(1, 98) = 6.22$, $p = .014$, $\eta^2 = .06$. Based on main effect for group, participants experiencing some form of indirect aggression endorsed more social avoidance than those describing no experience with indirect aggression ($F(1, 98) = 9.78$, $p = .002$, $\eta^2 = .09$).

Table 10
Mean Social Avoidance for Two Smaller Groups

	Total N	*Total M*	*Total SD*	*Female N*	*Female M*	*Female SD*	*Male N*	*Male M*	*Male SD*
Indirect Aggression	51	85.94	25.35	38	88.97	24.24	13	77.08	27.41
No Indirect Aggression	51	64.86	19.91	15	73.93	13.46	36	61.08	21.07

Table 11
ANOVAs Summary for Two Smaller Groups on Avoidance

Sources of Variance	*SS*	*df*	*MS*	*F*	*P*	*Partial Eta Squared*	*Power*
Main Effect of Sex	3097.90	1	3097.90	6.22	.014	.06	.7
Main Effect of Indirect Aggression	4871.96	1	4871.96	9.78	.002	.09	.87
Interaction Effect	4.6	1	4.6	.01	.924	.00	.051
Residual	48825.58	98	498.22				

Discussion

Because of the possible link between social anxiety and indirect aggression, the present research examined how both social anxiety and social avoidance related to whether college students identified with being a perpetrator of indirect aggression, victim of indirect aggression, both a victim and perpetrator, or neither. As expected, results indicated that having any type of experience with indirect aggression was significantly related to elevated scores on measures of both social anxiety and social avoidance. Results from other research studies also have found that individuals with social anxiety were more likely to be perpetrators or targets of indirect aggression. Several explanations for this relationship have been offered. For instance, popularity and its connection with anxiety has been suggested as one reason. Socially anxious individuals report a greater frequency of negative peer interactions, including indirect aggression, and are often rated by peers as rejected, neglected, or both (Moretti et al., 2001; Storch et al., 2003a; Storch et al., 2005). Indirect aggression may also be a useful method that anxious individuals use to transfer negative attention away from themselves and onto others in the group because of fear of negative evaluation about themselves (Loudin et al., 2003; Storch et al., 2004). Loudin et al. (2003) further suggested that engaging in indirect aggressive behavior may

be related to lower levels of perspective taking and greater fear of negative evaluation, a form of social anxiety. Previous researchers, therefore, have suggested several reasons for a relationship between experience with indirect aggression and social anxiety. Results from the present study support previous researchers' findings of such a relationship.

Although the group size was limited, there was also some evidence from the present study that victims of indirect aggression may be more at risk for both social anxiety and social avoidance which supported research done by Storch et al. (2003a). Previous researchers have also suggested such a link. For instance, Storch et al. (2003a) suggested that social anxiety may be a conditioned response from repeated exposure to peer aggression leading to the internalizing of negative experiences and avoidance of social situations. Recent research has shown that social anxiety may also influence anger-related retaliatory behaviors (Loudin et al., 2003; Weber et al., 2004). Victims of indirect aggression may internalize negative feedback from the aggressors, resulting in an increase in social anxiety (Storch et al., 2005). When compared to the total sample size, however, only a small percentage of students in the present sample identified themselves as having been a victim of indirect aggression. In order to further understand the possible link between being a victim of indirect aggression and social anxiety in college students, more investigations need to be conducted using a larger sample of students who identify with the victim role.

Contrary to expectations, students who identified themselves as both victim and perpetrator of indirect aggression did not report more statistically significant social anxiety or avoidance. Less than 10% of the total sample identified themselves as both perpetrator and victim and this extremely small sample size may have contributed to the

lack of statistically significant differences. How representative these students were of college students who have experience as both perpetrator and victim of aggression is also unknown. Future research with much larger samples is needed to understand whether or not social anxiety is related to being both an aggressor and victim of indirect aggression in young adulthood.

Male students in the present sample did not report being a perpetrator of indirect aggression more than did female students, contrary to one hypothesis. In fact, very few (less than one percent) of the total sample indicated experience as a perpetrator. There also has been some disagreement in the research literature concerning sex differences and indirect aggression in adulthood. Storch et al. (2004) found that male college students were more overtly and relationally aggressive than female students. Basow et al. (2007), on the other hand, concluded that there are no gender differences in college students related to displays of indirect aggression, but did suggest that gender differences may depend on the aggressor's age, target gender, circumstances, and how the aggression is being measured. Further research is needed to investigate these various possibilities. Some researchers have written that less emphasis on popularity as a social goal in adulthood may be responsible for the lack of sex differences in who expresses indirect aggression (Bjorkqvist et al., 1992; Coyne et al., 2006). A decline in concerns about popularity may explain why very few students in the present sample identified themselves as perpetrators of indirect aggression

In the present sample, more female than male students met suggested cutoff scores indicative of social anxiety or social avoidance. Although more female students met suggested cutoff scores for both social anxiety and social avoidance, only one

statistically significant sex difference related to social avoidance was found during data analyses. When more equivalent sample sizes were formed with only two groups (those with some form of experience with indirect aggression and those with none), a main effect for sex was found, indicating that women's scores on social avoidance were statistically larger than men's scores. No main effect for sex was found on scores from the social anxiety scale. The reason for this discrepancy in findings is unknown. Because previous researchers have concluded that social anxiety disorder is two times more common in women than men (Ham et al., 2005; La Greca & Lopez, 1998), follow-up research is needed in order to further understand when and why women may be more at risk for social anxiety.

Many college students in the present sample indicated some social anxiety or social avoidance. More than half of the females met the cutoff score criteria for both scales and at least one-third of males students met criteria for either social anxiety or social avoidance. Because these were students from an introductory to psychology course, increased anxiety related to living away from home, perhaps for the first time, may be one reason for their endorsements of social anxiety and social avoidance. Regardless of the reason, however, the present results suggest that college students may be an at risk group for symptoms of anxiety.

Limitations

There are several limitations to the present study. One limitation relates to the research participants. The research sample was comprised of students at one Midwestern university located in a mostly rural community. The students were enrolled in an introductory to psychology course and were mostly freshmen, female, and Caucasian.

The sample of students was limited, therefore, and may not be representative of the general population of college students or young adults.

Additionally, the limited number of students who elected to take part in this online research was not adequate enough to get equivalent group sizes for the four aggressor groups. Also, there was an unequal male versus female ratio of participants; female students made up over three-fourths of the sample. To adequately address the different anxiety and avoidance levels of the aggressor or perpetrator, victim, both, and neither groups, at least 30 male and 30 female participants were needed in each group. Because these numbers were not reached and because of the grossly unequal group sizes, groups were combined into those who had any experience with indirect aggression and those who had none in an attempt to construct more equal group sizes. By doing this, however, the original research questions related to group type could not be fully addressed.

Another limitation of the present study was that the SAASA, used to measure social anxiety and social avoidance, was developed for adolescents. The developers, Cunha et al. (2008) used a sample of participants aged 12 to 18 years old. After performing a database-wide search using Ebscohost to see if other studies had used this scale on other age ranges, no other published studies using this scale could be found. For the purpose of this study, the items were used on college students 17 years and older. The researcher believed that since most students in the present study would be freshmen, the scale would be appropriate. Also, the anxiety and avoidance scales were developed to be administered simultaneously, but for this study were given separately in a random order in an attempt to control for possible response bias. Also, for both scales, only total scores

were used and index scores relevant for each scale were not considered. Because of these changes in administration and scoring, the original reliabilities of the scales may have been skewed and how this affected results in the present study is unknown.

Finally, the data collected for this research was based on self-report. Self-report information can be influenced by bias on the part of those reporting on themselves. For instance, self-report data may be inaccurate for either intentional or unintentional reasons. Memory problems are one example. Participants may also provide what they consider socially desirable responses or may respond in just the opposite manner for some reason that does not match the truth or how they actually feel.

Future Research

Based on the findings and limitations of the present study, several suggestions for future research were identified. In order to better understand the relationship between different aggressor types and social anxiety, larger and more representative samples of college students or young adults are needed. Additionally, many different scales and measures of both indirect aggression and social anxiety need to be investigated in order to further understand possible relationships between these two constructs. The reliability and validity of the scales, scoring, and research procedures also need to be considered in future research.

Conclusion and Implications

This study examined the link between indirect aggression and social anxiety and social avoidance in a sample of female and male college students. Results indicated that students who experienced indirect aggression in some form had higher levels of social anxiety and social avoidance than those who reported little to no experience. There was

also some evidence that those who identified themselves as victims of indirect aggression had the most social anxiety and avoidance. Very few students identified themselves as perpetrators of indirect aggression; and contrary to expectations, male students did not identify themselves more often than female students as perpetrators. More female than male students indicated they were victims of indirect aggression. Because of limitations of the present study, however, future research is needed in order to further understand the relationship between anxiety and indirect aggression in a young adult population.

Several implications are evident from the results of the present study. First, many college students reported feelings of anxiety, suggesting the possible need for education and intervention activities that target anxiety. Additionally, cyberbullying is a newer form of indirect aggression that requires research at the university level.

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Appendix A - Demographics

Please fill out the following information to help the researcher better understand the research results:

Sex: Male Female Rather not specify

Age:

Race/Ethnicity:

Year in School: Fresh Soph Jr Sr Grad

School Major:

Location of Permanent Address

(City & State)

Appendix B - IAS-A

Think about the past 12 months with your friends, peers, and co-workers.
On a scale of 1-5, rate how often you think you have done the actions stated below

		Never	*Once/Twice*	*Sometimes*	*Often*	*Regularly*
1	Used my relationship with them to try and get them to change a decision	1	2	3	4	5
2	Used sarcasm to insult them	1	2	3	4	5
3	Tried to influence them by making them feel guilty	1	2	3	4	5
4	Withheld information from them that the rest of the group is let in on	1	2	3	4	5
5	Purposefully left them out of activities	1	2	3	4	5
6	Made other people not talk to them	1	2	3	4	5
7	Excluded them from a group	1	2	3	4	5
8	Used their feelings to coerce them	1	2	3	4	5
9	Made negative comments about their physical appearance	1	2	3	4	5
10	Used private in-jokes to exclude them	1	2	3	4	5
11	Used emotional blackmail on them	1	2	3	4	5
12	Imitated them in front of others	1	2	3	4	5
13	Spread rumors about them	1	2	3	4	5
14	Played a nasty practical joke on them	1	2	3	4	5
15	Done something to try and make them look stupid	1	2	3	4	5
16	Pretended to be hurt and/or angry with them to make them feel bad about him/herself	1	2	3	4	5
17	Made them feel that they don't fit in	1	2	3	4	5
18	Intentionally embarrassed them around others	1	2	3	4	5
19	Stopped talking to them	1	2	3	4	5
20	Put undue pressure on them	1	2	3	4	5
21	Omitted them from conversations on purpose	1	2	3	4	5
22	Made fun of them in public	1	2	3	4	5
23	Called them names	1	2	3	4	5
24	Criticized them in public	1	2	3	4	5
25	Turned other people against them	1	2	3	4	5

Appendix C - IAS-T

Think about the past 12 months with your friends, peers, and co-workers.

On a scale of 1-5, rate how often you think you have had the actions stated below done toward you.

		Never	*Once/Twice*	*Sometimes*	*Often*	*Regularly*
1	Made other people not talk to me	1	2	3	4	5
2	Withheld information from me that the rest of the group is let in on	1	2	3	4	5
3	Intentionally embarrassed me around others	1	2	3	4	5
4	Excluded by a group	1	2	3	4	5
5	Called me names	1	2	3	4	5
6	Stopped talking to me	1	2	3	4	5
7	Used their relationship with me to try and get me to change a decision	1	2	3	4	5
8	Used my feelings to coerce me	1	2	3	4	5
9	Made fun of me in public	1	2	3	4	5
10	Pretended to be hurt and/or angry with me to make me feel bad about myself	1	2	3	4	5
11	Turned other people against me	1	2	3	4	5
12	Made me feel that I don't fit in	1	2	3	4	5
13	Spread rumors about me	1	2	3	4	5
14	Used emotional blackmail on me	1	2	3	4	5
15	Criticized me in public	1	2	3	4	5
16	Used private in-jokes to exclude me	1	2	3	4	5
17	Put undue pressure on me	1	2	3	4	5
18	Used sarcasm to insult me	1	2	3	4	5
19	Played a nasty practical joke on me	1	2	3	4	5
20	Made negative comments about my physical appearance	1	2	3	4	5
21	Omitted me from conversations on purpose	1	2	3	4	5
22	Imitated me in front of others	1	2	3	4	5
23	Purposefully left me out of activities	1	2	3	4	5
24	Done something to try and make me look stupid	1	2	3	4	5
25	Tried to influence me by making me feel guilty	1	2	3	4	5

Appendix D – SAASA – Anxiety

Below are situations that might cause an individual to feel anxious or have anxiety.
On a scale of 1-5, rate each statement on how much anxiety or distress you would or have felt in that situation.

If you have never been in the situation, imagine how you would feel if it did happen to you.

		None	A Little	Some	Much	Very Much
1	Eating in public.	1	2	3	4	5
2	Drinking in front of other people.	1	2	3	4	5
3	Going to a party given by a peer.	1	2	3	4	5
4	Reading aloud in front of the class.	1	2	3	4	5
5	Writing while being observed	1	2	3	4	5
6	Phoning a peer I don't know very well.	1	2	3	4	5
7	Talking to someone I don't know very well.	1	2	3	4	5
8	Meeting strangers.	1	2	3	4	5
9	Urinating in a public toilet.	1	2	3	4	5
10	In a bus or train, sitting in front of other people.	1	2	3	4	5
11	Expressing disagreement or disapproval to a peer I don't know very well.	1	2	3	4	5
12	Making eye contact with someone I don't know very well.	1	2	3	4	5
13	Expressing my feelings to the person I like.	1	2	3	4	5
14	Being alone with a peer of the opposite sex.	1	2	3	4	5
15	Performing, for the first time, a new task or role in front of peers.	1	2	3	4	5
16	Saying "no" to a peer that has asked me to do something I don't want to do.	1	2	3	4	5
17	Mingling in a group where there are mainly people of the opposite sex.	1	2	3	4	5
18	Asking someone for a favor.	1	2	3	4	5
19	Asking someone out for the first time.	1	2	3	4	5
20	Making a compliment to someone of the opposite sex.	1	2	3	4	5
21	Having a conversation with someone of the opposite sex.	1	2	3	4	5
22	Talking with older co-workers.	1	2	3	4	5
23	Asking a peer to change a way of behaving that annoys me.	1	2	3	4	5
24	Doing exercises during gym class.	1	2	3	4	5
25	Changing in the locker room.	1	2	3	4	5
26	Taking an oral test or exam.	1	2	3	4	5
27	Complaining when someone tries to jump the queue.	1	2	3	4	5
28	Being asked to solve a problem on the blackboard.	1	2	3	4	5
29	Taking the initiative of asking a question or requesting an explanation in a class or meeting.	1	2	3	4	5
30	Being late or early to a meeting or class.	1	2	3	4	5
31	Participating in a group sport.	1	2	3	4	5
32	Crossing the hall, corridors or going to the school lunchroom when it is full of students.	1	2	3	4	5
33	Participating in school parties.	1	2	3	4	5
34	Answering back to a peer who is trying to make fun of me.	1	2	3	4	5

Appendix E – SAASA – Avoidant

Below are situations that individuals may want to avoid for fear of being judged.
On a scale of 1-5, rate each statement on how likely you would avoid the following situations.
If you have never been in the situation, imagine what you would do if you ever were in the situation.

		Never	Sometimes	Many Times	Most Times	Almost Always
1	Eating in public.	1	2	3	4	5
2	Drinking in front of other people.	1	2	3	4	5
3	Going to a party given by a peer.	1	2	3	4	5
4	Reading aloud in front of the class.	1	2	3	4	5
5	Writing while being observed	1	2	3	4	5
6	Phoning a peer I don't know very well.	1	2	3	4	5
7	Talking to someone I don't know very well.	1	2	3	4	5
8	Meeting strangers.	1	2	3	4	5
9	Urinating in a public toilet.	1	2	3	4	5
10	In a bus or train, sitting in front of other people.	1	2	3	4	5
11	Expressing disagreement or disapproval to a peer I don't know very well.	1	2	3	4	5
12	Making eye contact with someone I don't know very well.	1	2	3	4	5
13	Expressing my feelings to the person I like.	1	2	3	4	5
14	Being alone with a peer of the opposite sex.	1	2	3	4	5
15	Performing, for the first time, a new task or role in front of peers.	1	2	3	4	5
16	Saying "no" to a peer that has asked me to do something I don't want to do.	1	2	3	4	5
17	Mingling in a group where there are mainly people of the opposite sex.	1	2	3	4	5
18	Asking someone for a favor.	1	2	3	4	5
19	Asking someone out for the first time.	1	2	3	4	5
20	Making a compliment to someone of the opposite sex.	1	2	3	4	5
21	Having a conversation with someone of the opposite sex.	1	2	3	4	5
22	Talking with older co-workers.	1	2	3	4	5
23	Asking a peer to change a way of behaving that annoys me.	1	2	3	4	5
24	Doing exercises during gym class.	1	2	3	4	5
25	Changing in the locker room.	1	2	3	4	5
26	Taking an oral test or exam.	1	2	3	4	5
27	Complaining when someone tries to jump the queue.	1	2	3	4	5
28	Being asked to solve a problem on the blackboard.	1	2	3	4	5
29	Taking the initiative of asking a question or requesting an explanation in a class or meeting.	1	2	3	4	5
30	Being late or early to a meeting or class.	1	2	3	4	5
31	Participating in a group sport.	1	2	3	4	5
32	Crossing the hall, corridors or going to the school lunchroom when it is full of students.	1	2	3	4	5
33	Participating in school parties.	1	2	3	4	5
34	Answering back to a peer who is trying to make fun of me.	1	2	3	4	5