Proceedings of The National Conference
On Undergraduate Research (NCUR) 2018
University of Central Oklahoma
Edmond, Oklahoma
April 5-7, 2018

The Relationship Between Attachment and Aggression in College Students

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Abstract

The goal of this study is to examine the relationship between adult attachment style and forms of aggression on a college campus. Participants will be surveyed using the Experiences in Close Relationship Scale-Short Form (ECR-S) and the Buss-Perry Aggression Questionnaire-Short Form (BPAQ-SF). Participants will be conveniently selected based on responses to a global email. It is hypothesized that there will be a positive correlation between attachment anxiety and anger, along with a positive correlation between attachment avoidance and hostility. These predictions are drawn from a neurobiological model of attachment theory, where anxiety is linked to affective appraisals and reactions, while avoidance is linked to cognitive appraisals and reactions. This cognitive versus emotional mentalization is believed to influence the working models for which individuals approach situations. This should mean an individual high in anxiety would use a more affective approach, which would lead to scoring higher in anger, the emotional component of aggression. Conversely, an individual who is high in avoidance will use a more cognitive approach, which would lead to scoring higher in hostility, the cognitive component of aggression. Higher scores of physical aggression are hypothesized to occur in males with an insecure attachment pattern, while high scores of verbal aggression are hypothesized as occurring in individuals with an insecure attachment pattern, regardless of gender. These results would provide evidence for working models that are influenced by the attachment style one possesses.

Keywords: Attachment, Aggression, Neuroanatomical

1. Introduction

Humans have acted aggressively throughout evolutionary history. Despite possible socialized links to aggression, the frequency of aggression in human's points to a potential biological structure. Buss and Shackelford proposed an evolutionary model of aggression, detailing that the psychological mechanisms underlying aggression may have developed as solutions to possible threats. The problem found by Buss and Shackelford was that the evolutionary perspective of human aggression is limited.[14] In the case of infidelity in close relationships, for example, potential responses from an individual are beating one's wife, homicide, getting drunk, seeking counsel, talking through the problem, or passively hoping things will get better. The evolutionary model of aggression is unable to account for individual differences in aggression. However, a neurobiological model of attachment theory may account for the individual differences in aggression.

1.1.The Buss-Perry Model of Aggression

The Buss-Perry model of aggression was designed to describe the components of aggression. Buss and Perry originally postulated six components of aggression, (Physical aggression, verbal aggression, anger, indirect aggression, resentment, and suspicion).[13] After performing an exploratory principal components analysis with oblique rotations, only four factors emerged. Buss and Perry divided aggression into four components, physical aggression, verbal aggression, anger, and hostility.[13] These four components were then divided into three categories: instrumental, emotional, and cognitive. Physical and verbal aggression make up the instrumental category of aggression, anger is said to fall into the emotional category of aggression, and hostility is hypothesized as the cognitive component of aggression.

Physical aggression is described as physically hurting or harming another. Verbal aggression is saying something, with the intent to harm or hurt another. These two components are said to be the instrumental and motor components of aggression. This is due to both physical and verbal aggression involving harming or hurting another. These components of aggression are instrumental, in that they are used as an instrument to cause harm to another. Under this model of aggression, when one is physically or verbally aggressive, it is directed towards a person or object. The physical or verbal aggression is used as a tool to harm another person or to an object.

Anger is the physiological arousal that occurs with aggression, along with preparation to aggress. This component is described as the emotional component of aggression. This form of aggression generally occurs when one feels threatened, triggering the physiological arousal that is characteristic of anger. This behavior can be seen after losing a competition, not being selected by others, or when feeling jealous, guilty, or embarrassed. This component of aggression causes an individual to feel the emotions that often attributed to aggression. This can include feeling like one is angry enough to explode, frustration, or acting angrily towards others. If one becomes angry enough, they may use the motor components of aggression to Channel their anger towards the object or person that caused their current emotional state.[13]

Hostility is when one negatively evaluates a person or thing. Thought patterns of disgust, contempt, and resentment of others are characteristic ways that an individual who engages in hostility would think of others. This component is hypothesized by Buss and Perry as the cognitive component of aggression.[13] This form of aggression generally occurs inside an individual's own mind. For example, one who engages in this form of aggression may believe that their life is unfair and that others have an advantage over them. Jealousy can also come from these thought patterns, as they will internally process social cues from intimate relationships as negative and unfair. They may also believe that those close to them will betray them or talk poorly about them behind their back. From these components of aggression, Buss and Perry created the Buss-Perry aggression questionnaire to test for overall aggression and the four components of aggression.[13]

1.2.Attachment Theory

Ainsworth was the first to experimentally test for various attachment styles.[4] These attachment styles were used to describe an infant's patterns of responses to separations and reunions with their mother in the strange situation. This lab situation allowed Ainsworth to propose three categories of attachment for infants: Secure, avoidant, and anxious.[4] Main and Solomon added a fourth attachment, disorganized.[26]

According to Ainsworth, secure infants exhibited distress during separations but recovered quickly when reunited with their mother, showing affection, joy, and positivity.[4] Avoidant infants were thought to have a deactivated attachment system.[32] They showed little distress when separated and avoided the mother upon being reunited.[4]Anxious infants were believed to have a hyperactive attachment system.[26] These infants were distressed during separation but conflicted upon being reunited.[4] Disorganized infants are thought to have a breakdown in the attachment system, where it is no longer functioning properly.[26] Ainsworth stated that these infants have different strategies when reunited, often unpredictably.[4] This could include gazing off into the distance, falling over, or any other behavior that could be considered uncharacteristic of a child exhibiting when their parent comes into the room. This is often because a disorganized attachment pattern is observed as developing from children who have experienced abuse.[26]

Attachment patterns have been hypothesized to influence more than just reactions to an attachment figure. Bowlby suggested early experiences with caregivers are used as a prototype for later relationships.[9] Ainsworth claimed the attachment patterns displayed between mother and child leave a distinctive mark on all emotional relationships.[2] Toth and Cicchetti provide evidence for the stability of attachment and the usage of attachment systems in relationships.[37] They observed that attachment orientations were the same for an individual across different interpersonal relationships, such as friends, coworkers, family, and other relationships. According to these prominent figures,

attachment patterns influence the way relationships are approached for the rest of one's life. Child attachment patterns are not simply occurring with a caregiver and then ending. A child's attachment pattern provides children with expectations and beliefs about how relationships between humans occur. Most importantly, one's attachment pattern does not simply end after the child is done being cared for by the caregiver. Or, as stated by Bowlby, attachment was an important human experience, "from the cradle to the grave.[7]"

Bowlby hypothesized that attachment patterns create working models, which in turn effect how individuals approach the world.[10] For example, a child who feels unwanted from their parents would feel unwanted by everyone, in general.[8] This means that attachment representations influence new relationships that are created.[7] Main and Weston were able to show this when they found that insecure infants showed more conflict and responded less friendly toward an unfamiliar adult, than did secure infants in this same study.[27] Similarly, Pastor found that secure infants were more sociable and responded more positively toward an unfamiliar peer, avoidant infants were more negative toward an unfamiliar peer, and anxious infants appeared stressed, acted negatively, and ignored the unfamiliar peer.[33] From these studies, it appears Bowlby was correct in his postulation that attachment creates a working model for how infants approach other individuals. Importantly, Bowlby also hypothesized that one's attachment pattern would be influential throughout their entire life. This attachment pattern would be relatively consistent.[10] This lead to the development and understanding that attachment does not only occur in infants but also in adults.

1.3.Adult Attachment

Hazan and Shaver proposed that romantic love or pair bonding was really an attachment process.[24] One's attachment pattern provides a working model for what an individual will expect from their romantic relationships. Fraley and Shaver explain that the working models created through attachment as a child remain relatively stable as one becomes an adult.[22] However, it is not only romantic partners and caregivers that can activate an attachment system. Bowlby claimed that the attachment system was activated by environmental threats that may engender survival.[9] When one feels threatened, one seeks proximity to those they are attached to. The activation also occurs during any natural clue of danger.[8] This suggests that the attachment system may be activated when in aggressive situations. The activation of attachment systems during aggressive situations may indicate that these two variables are linked.

Mikulincer and Shaver detail four attachment patterns for adults.[32] Secure individuals are described as having an easier time becoming close to another, an easier time depending on another, but do not worry about being alone or being unaccepted. Fearful individuals are uncomfortable getting close to others. They want close relationships but find it difficult to trust others and often worry about getting too close. Preoccupied individuals want to be completely intimate with others but often find that others do not get as close as they would like. These individuals are uncomfortable without close relationships but often will worry that others do not value them enough. Dismissing individuals are comfortable without any close relationships. They want to feel independent and prefer to not be depended on or depend on others.

A two-dimensional model of adult attachment details how anxiety and avoidance form the four attachment styles. Brennan, Clark, and Shaver described those high in attachment-related anxiety to worry about their partner's availability, responsiveness, and believe they are not getting enough attention.[11] Conversely, those who are low in anxiety are generally more secure in their perceived responsiveness of their partner. Brennan et al. discussed one who is high in attachment-related avoidance to be less reliant on others and less open, while those low in avoidance would be more comfortable depending on and being intimate with others.[11] Based on this two-dimensional model, secure attachment would be low in both avoidance and anxiety, preoccupation would be low avoidance and high anxiety, fearful would be high anxiety and high avoidance, while dismissing would be high avoidance and low anxiety.

Mikulincer and Shaver hypothesize that working models are formed from excitatory and inhibitory associations.[32] Specifically, working models of attachment are formed by recurrent use or underuse of the attachment system. Use of one model of attachment causes excitatory associations for congruent models, while also providing inhibitory associations for models that do not fit one's attachment schema. Recurrent usage of one model may lead to the formation of generalized responses or working models. If one frequently uses the attachment systems that are responsible for attachment anxiety, it is likely that they will then develop that system and use it more frequently. The expectations of Mikulincer and Shaver indicate that there may be a neuroanatomical underpinning to attachment theory.[32] The activation and deactivation of attachment systems should occur from activation and deactivation of the specific areas of the brain that cause attachment behavior. The potential neuroanatomical basis of attachment can be explained by the neuroanatomical model of attachment, proposed by Vrtička and Vuillemier.[38]

1.4.Neuroanatomical Model of Attachment

Vrtička and Vuillemier explore a more inclusive view of adult attachment, where one's attachment pattern influences both response patterns with romantic partners and social appraisals of strangers that an individual has never met before.[38] Avoidant individuals characteristically display a more dismissive and negative working model of others.[32] Furthermore, avoidant individuals generally suppress the attachment system, which prevents others from perceiving their internal emotional state.[38] Anxiety, on the other hand, encourages individuals to have a higher activation of the attachment system.[32] The working model of others for those with attachment anxiety is often positive, but the internal model of self is generally negative.[38] These patterns in views of the self and others were replicated by Dewall et al, who found those with attachment anxiety displayed a positive working model of others, but a negative working model of the self.[17]

Fonagy and Luyten discussed two potential processes that regulate social processing, emotional and cognitive mentalization processes.[21] These two processes are what make up the neurobiological model of attachment, according to Vrtička and Vuillemier.[38] Emotional mentalization is thought to be an automatic response that is based on external information about others. This means this approach would generally use an emotional representation of others.[38] Conversely, the cognitive mentalization system is internally based social processing. This could include thinking of others mental states or intentions. Mayes conceptualized these processes as acting in an equilibrium, where stress acted as a switch between the modes of processing.[28] This equilibrium would generally be expected to occur in individuals with a more secure attachment pattern.[29]

However, individuals with an insecure attachment pattern do not display the same equilibrium between cognitive and emotional mentalizations that Mayes hypothesized.[29] Fonagy and Luyten believe that people with an anxious attachment would generally use emotional mentalization, while avoidance would be associated with cognitive mentalization.[21] Vrtička and Vuillemier contribute to this model by characterizing
attachment avoidance with a deactivation of the attachment system, leading to a blunted emotional approach, but more prominent cognitive approach.[38] Individuals with attachment anxiety have an hyperactivated attachment system, leading to responses to social situations in a more affective style. Importantly, this hyperactivated emotional system leads to a lack of behavioral control.[38] The usage of cognitive versus emotional approaches based on attachment provides insight into the ways one high or low in either of these dimensions may act in a situation.

Another key aspect of this proposed model is the working models that one creates due to their attachment may also influence their approach towards strangers. Dykas, Woodhouse, Ehrlich, and Cassidy found that when meeting a stranger, insecure adolescents remembered interactions less positively than they initially reported, while secure adolescents generally had a more stable memory.[18] Similar results were found in children, where attachment toward a parent had a significant influence on how a child acted towards a stranger.[25] Evidence seems to support the notion proposed by Bowlby, that attachment styles create working models about how one approaches the world.[10] These working models also seem to have a neurological underpinning, that activates or deactivates, depending on one's attachment.

The neuroanatomical model of attachment proposed by Vrtička and Vuillemier can be best conceptualized as an extension of the traditional adult attachment model.[38] Adult attachment still works in the same way described by Hazan and Shaver.[24] The neuroanatomical model of attachment is a hypothesized concept about the cognitive processes that underlie attachment theory. Despite some evidence from Fonagy and Luyten to support this neuroanatomical model of attachment, it is still a new theoretical concept.[21] More research must be done on this model of attachment to examine the efficacy of its claims. Specifically, research should examine the cognitive and emotional mentalizations outlines in this theory, to see if they truly occur within an adult population.

1.5.The Present Study

The present study sought to extend the literature for a neurobiological model of attachment theory by providing evidence that relational attachment anxiety and avoidance provide a working model for the way individuals respond to situations. Specifically, the exploration of the correlation between attachment style and the form of aggression a person is prone to is the point of this study. This was done by seeking to define and explore the influence that attachment style has on aggression, such that a cognitive mentalization would lead to a cognitive approach of aggression, while an emotional mentalization would lead to an emotional approach of aggression.

Vrtička and Vuillemier explain attachment theory as a way that individuals process the world around them.[38] This model expands the theory of adult attachment. Cognitive and emotional mentalizations are said to be the underling

processing patterns that underlie attachment avoidance and anxiety, respectively. The present study is designed to help understand if this pattern is truly occurring. Since cognitive and emotional mentalization cannot be tested for, the current study is using aggression to test for these mentalizations patterns. Bowlby stated that aggression towards another was mediated by one's attachment pattern.[9] Under this assumption, if one was using a cognitive or emotional form of aggression, they would be engaging with cognitive or emotional mentalizations.

For the present study, a cognitive mentalization is being operationalized as hostility, as defined by the Buss-Perry model of aggression. This is because cognitive mentalizations occur when an individual internally processes their social world and uses cognitive appraisals in social situations. One would expect that they would also engage in the cognitive form of aggression, hostility, as it is internally based processing and is characterized by negative cognitions about others. An emotional mentalization is being operationalized by anger, as defined by the Buss-Perry model of aggression. Emotional mentalization is characterized by an individual having an emotional representation of others, as well as using one's own emotions to process social situations. It is expected that an emotional mentalization would be related to anger, in that anger is the emotional component of aggression and is often described as negative emotions and feelings about others. In the way that emotional and cognitive mentalizations are operationalized in the current study, one would expect that attachment avoidance should be related to hostility, while attachment anxiety should be related to anger.

Gender differences are expected based on the findings from Archer. Specifically, Archer found that males use physical aggression and verbal more commonly and females use verbal aggression more commonly.[6] Bowlby hypothesized that individuals use aggression more commonly when they have an insecure attachment pattern.[8] This should mean that an insecure male will be more likely to engage in physical and verbal aggression, while an insecure female will be more likely to strictly use verbal aggression. Archer also found that males are more aggressive than females, regardless of their attachment pattern.[6] This should mean that the effect of insecure attachment on aggression should be stronger for males, although this is not a prediction of this study.This leads to the following predictions:

H1: Attachment anxiety will be related to anger, such that higher attachment anxiety scores will be associated with higher anger scores.

H2: Attachment avoidance will be related to hostility, such that higher attachment avoidance scores will be associated with higher hostility scores.

H3: Insecure attachment in males will be related to physical aggression, such that males with higher insecure attachment scores will be associated with higher physical aggression scores.

H4: Insecure attachment in males will be related to verbal aggression, such that males with higher insecure attachment scores will be associated with higher verbal aggression scores.

H5: Insecure attachment in females will be related to verbal aggression, such that females with higher insecure attachment scores will be associated with higher verbal aggression scores.

H6: There will be no association between attachment security and physical aggression in females.

2. Method

2.1.Participants

The participants were 256 undergraduate and graduate college students participated in the study. These participants were individuals who responded to an email sent to all students enrolled at a private college in Upstate New York. This was a convenience sample but was also representational of a wide range of backgrounds. Of the total number of participants, 25 identified as male, 221 identified as female, 2 identified as other, and 8 declined to respond, regarding gender. The mean age of the participants was 25 years old (SD=9.38), while the median age was 21 years old. This sample also has some racial diversity. 184 participants identified as White, 14 as Mixed, 12 as Asian, 15 as Black or African American, 18 as Other, and 13 declined to respond, regarding race. Out of these, complete data were available for 210 participants. Cooperation was voluntary, and participants received no monetary reward. Introductory

psychology students were given course credit to participate in this study, whom made up 11 of the total number of participants.

2.2.Materials

The Experiences in Close Relationship Scale-Short Form (ECR-SF) is designed to measure two dimensions of adult attachment, anxiety, and avoidance.[39] Both anxiety and avoidance have a minimum score of six and a maximum score of 42. A high score represents high attachment avoidance or anxiety, while a low score represents low attachment avoidance or anxiety. The ECR-SF is a 12-item adaptation of the Experiences in Close Relationship Scale.[11] The avoidance subscale consisted of 6 items ($\alpha = .823$) and the anxiety subscale consisted of 6 items ($\alpha = .775$). The ECR-SF is designed so that those who respond to it record the extent to which the questions describe their feelings about close relationships. A response is given with a seven-point Likert scale that ranges from 1 (disagree strongly) to 7 (agree strongly). This is a widely used measure of attachment style that is considered to have internal consistency and test-retest reliabilities that are acceptable when used in samples of college-aged individuals.[11] Questions like "I try to avoid getting too close to my partner" are used to measure attachment avoidance, while questions like "I need a lot of reassurance that I am loved by my partner" are used to measure attachment anxiety.

The Buss and Perry-Aggression Questionnaire Short Form (BPAQ-SF) is designed to measure four factors of aggression: physical aggression, verbal aggression, anger, and hostility.[12] This questionnaire is a 12-item adaptation of the original Buss and Perry-Aggression Questionnaire (BPAQ).[13] The physical aggression subscale consisted of 3 items ($\alpha = .706$), the verbal aggression subscale consisted of 3 items ($\alpha = .700$), the anger subscale consisted of 3 items ($\alpha = .655$), the hostility subscale consisted of 3 items ($\alpha = .639$). Scores for each factor of aggression range from three to 15. Higher scores indicate greater reported aggressive behavior for that factor. Items on the scale are designed to measure how a question relates to the participant. Each question is answered on a 5-point Likert scale that ranges from one (extremely uncharacteristic of me) to five (extremely characteristic of me). All 12 items are added together to give an overall aggressiveness score. When compared to other short-form versions of the BPAQ, the Bryant and Smith model fit the sample better, retained adequate scale reliability, and has been validated in many populations, including college students.[23] The BPAQ-SF also has convergent and discriminant validity and a greater model goodness of fit than the original BPAQ.[12] "I have trouble controlling my temper" is an example of a question that was used to measure anger, "There are people who pushed me so far that we came to blows" is an example of a question that was used to measure physical aggression, "I can't help getting into arguments when people disagree with me" is an example of a question used to measure verbal aggression, and "At times I feel I have gotten a raw deal out of life" is an example of a question that was used to measure hostility.

2.3.Procedure

An email was sent out to all students currently enrolled at a college in upstate New York requesting participation in the study. The email informed participants that their responses would be anonymous, and their participation was entirely voluntary. Within this email was a link that directed participants to the online survey. The survey was hosted on PsyToolkit, which is a free-to-use toolkit that allows individuals to run psychological experiments, such as surveys.[35,36] The opening page of the survey contained the intention of the study, contact information for the faculty member advising the research, and the informed consent. Participants who marked that they accepted the terms of the informed consent were brought to the demographic survey portion.

The demographic survey included questions about age, gender, education level, ethnic origin, and a spot for students enrolled in introductory psychology to record their number to receive course credit. Following the demographics section, participants were brought to the ECR-SF. After completing the ECR-SF, participants completed the BPAQ-SF. After participants completed the BPAQ-SF, they were brought to a debriefing page that outlined the study in further detail and provided faculty advisor contact information again for any individuals who may want more information.

3. Results

A two-tailed Pearson product-moment correlation coefficient was computed to assess the relationship between constructs for each of the following hypotheses:

H1: Attachment anxiety was anticipated to be related to anger, such that higher attachment anxiety scores would be associated with higher anger scores. As expected, there was a significant correlation between attachment anxiety and anger, $r(208) = .30$, $p < .001$. Thus, the first hypothesis was supported.

H2: Attachment avoidance was expected to be related to hostility, such that higher attachment avoidance scores would be associated with higher hostility scores. As expected, there was a significant correlation between attachment avoidance and hostility, $r(208) = .35$, $p < .001$. Thus, this hypothesis was supported.

For the following set of hypotheses, the participant's responses were split based on their reported gender. Attachment avoidance and attachment anxiety were added together to give an overall "attachment security" score:

H3: Insecure attachment in males was expected to be related to physical aggression, such that males with higher insecure attachment scores would be associated with higher physical aggression scores. There was not a significant correlation between males with an insecure attachment pattern and higher scores of physical aggression, $r(17) = .37$, $p = .120$. Thus, this hypothesis was not supported.

H4: Insecure attachment in males was expected to be related to verbal aggression, such that males with higher insecure attachment scores will be associated with higher verbal aggression scores. Although there was not a significant correlation between males with an insecure attachment pattern and higher scores of verbal aggression, the correlation between these constructs approached significance, $r(17) = .45$, $p = .056$. Thus, this hypothesis was not supported.

H5: Insecure attachment in females was anticipated to be related to verbal aggression, such that females with higher insecure attachment scores would be associated with higher verbal aggression scores. As expected, there was a significant correlation between females with an insecure attachment pattern and higher scores of verbal aggression, $r(189) = .25$, $p = .001$. Thus, this hypothesis was supported.

H6: There was anticipated to be no association between attachment security and physical aggression in females. There was a significant correlation between females with an insecure attachment pattern and higher scores of physical aggression, $r(189) = .28$, $p < .001$. Thus, this hypothesis was not supported.

4. Discussion

In the present study, the relationship between attachment and aggression was examined in a sample of college students from Upstate New York. The neurobiological model of attachment proposed by Vrtička and Vuillemier was used to predict the relationship that would occur between attachment and aggression.[38] Under this model of attachment, individuals with attachment anxiety are said to process their social world using an emotional mentalization. This emotional mentalization is predicted to cause individuals with attachment anxiety to use an emotional representation of others, as well as using more emotional responses towards others. This model of attachment also predicts that individuals with attachment avoidance use cognitive mentalizations to process their social world. A cognitive mentalization is when an individual internally processes their social world, such as thinking of the intentions of others or thinking the world is unfair.

The BPAQ-SF was used because it measures four components of aggression. Buss and Perry described one of these components, anger, as the emotional component of aggression.[13] For this study, an emotional mentalization was operationalized as anger, due to this component of aggression being the emotional component. The present study predicted that higher levels of attachment anxiety would correlate with higher levels anger. This hypothesis was supported in that individuals who reported a higher level of attachment anxiety also reported higher levels of anger. This supports the neuroanatomical model of attachment proposed by Vrtička and Vuillemier, where individuals with attachment anxiety use an emotional mentalization.[38] In the way that an emotional mentalization was operationalized in the current study, the results support that an individual with attachment anxiety uses emotional mentalizations.

Another component measured by the BPAQ-SF is hostility. Buss and Perry hypothesize hostility as the cognitive component of aggression.[13] For the current study, cognitive mentalization was operationalized as hostility. It was expected that higher levels of attachment avoidance would correlate with higher levels of hostility. This hypothesis was supported in that individuals who reported a higher level of attachment avoidance also reported higher levels of

hostility. This provides additional support for the neuroanatomical model of attachment proposed by Vrtička and Vuillemier.[38] Under this model, individuals with attachment avoidance are expected to use cognitive mentalizations to process and engage with their social world. In the way that cognitive mentalizations were operationalized in the current study, the results support that an individual with attachment avoidance uses cognitive mentalizations.

The present study provides evidence for the neuroanatomical model of attachment, proposed by Vrtička and Vuillemier.[38] The emotional component of aggression, anger, correlated with attachment anxiety. This maps onto the proposed model of the neuroanatomical model of attachment, where emotional mentalization is used by individuals with attachment anxiety. Hostility, which is said to be the cognitive component of aggression, correlated with attachment avoidance. This also provides support for the neuroanatomical model of attachment, where individuals with attachment avoidance use cognitive mentalizations. The present study was able to support this model of attachment and increase the literature surrounding this theory of attachment. From these results, emotional and cognitive mentalization appears to correspond to attachment anxiety and avoidance, respectively. This indicates that these mentalizations should potentially be viewed at as an extension to the current attachment model. Cognitive and emotional mentalizations provides the potential to explain how attachment anxiety and avoidance influences an individual's thoughts and actions.

The present study also intended to examine the relationship between attachment security and specific constructs of aggression. Overall attachment security was measured by combining the scores for attachment avoidance and attachment anxiety from the ECR-SF. An insecure attachment pattern in males was expected to correlate with both physical and verbal aggression. There was no significant correlation between attachment security and physical aggression. This is likely because there were few males who participated in the study. However, there was a marginally significant relationship between verbal aggression and insecure attachment in males. Although this finding was not statistically significant, it was relatively close ($p < .06$).

Attachment insecurity in females was hypothesized to correlate with verbal aggression, but not physical aggression. These hypotheses were only partially supported, as there was a correlation in both physical and verbal aggression in females. Much of past research showed that men were more aggressive than females.[16] This indicates that although there was a correlation between insecure attachment in females and physical aggression, that the correlation may be lower than what would have been expected for males. However, since there is no significant correlation that occurred for males, no comparisons can be made.

4.1.Limitations and Future Directions

The entire study was done on a self-report basis. This means that there could have been some response bias from the participant's behalf, such as saying oneself is less aggressive, to appear more socially acceptable. There was also a much larger number of females who responded to the study than males. This indicates that the results may not be generalizable to a larger population, as this study is almost entirely female participants. Archer highlights that males are the more aggressive gender.[6] This indicates that the results of the present study may be much different if there were more male participants, since they may be more aggressive.

Future studies should seek to use a larger sample size that has an equal number of male and female participants. This would potentially create a more generalizable set of results that may better explain the interaction of aggression and attachment. Subjects should also be recruited from a larger pool than simply a single college. It may also be beneficial to establish evidence for the neuroanatomical model of attachment using more than just an aggression questionnaire. Other constructs that have both an emotional and a cognitive component should be used, to make sure this does not only occur with aggression. For example, the Multifaceted Empathy Test can be used to measure the cognitive and emotional components of aggression.[19] More work needs to be done on the neuroanatomical model of attachment until it can be viewed at as a clear extension of the current understanding of adult attachment.

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