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Predictors of Relational Aggression in Women Across Adulthood

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PREDICTORS OF RELATIONAL AGGRESSION IN WOMEN ACROSS

ADULTHOOD

by

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ABSTRACT

Relational aggression involves behavior intended to harm victims' social status or reputation through acts like manipulation, gossip, exclusion, and blackmail. Most of the research on relational aggression has focused on children and early adolescents, with college students receiving some attention in recent years. A smaller body of work supports the relevance of relational aggression among adults in workplace settings, marital relationships, and assisted-living facilities. While few studies with adults have been integrated into the literature on relational aggression, they provide evidence that these behaviors continue into adulthood. The current study explored relational aggression among women between the ages of 18 and 65 using social information processing theory (SIP; Crick & Dodge, 1994) to examine the pathway from relational victimization to relational aggression. A moderated mediation model tested via structural equation modeling showed that relational victimization predicted relational aggression, that this relationship was partially mediated by hostile attribution bias and anger rumination, and that normative beliefs about relational aggression moderated some of these mediated relationships. Specifically, normative beliefs strengthened the relationships of relational victimization and hostile attribution bias to relational aggression. Invariance testing compared the model across three developmental groups (i.e., emerging, established, and middle adulthood) and supported model invariance. Results highlight the continued relevance of relational aggression for adult women and support the role of anger rumination, hostile attribution bias, and perceived acceptability of relational aggression in the relationship between relational victimization and aggression.

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CHAPTER I – INTRODUCTION

Relational aggression, a form of aggression in which the aggressor seeks to undermine the victim's relationships or social status through gossip, rumor-spreading, infidelity, or withholding attention (Crick & Grotpeter, 1995; Werner & Crick, 1999), is a relatively recent area of focus within the field of psychology. Several studies conducted have expanded our knowledge of relational aggression and victimization, their relationship to several mental health problems, and differences across populations. This growing body of research has identified many adverse correlates of relational aggression (e.g., depression, substance misuse, loneliness, peer rejection) and built a compelling case that relational aggression and victimization deserve attention to mitigate their effects (Bagner et al., 2007; Dahlen et al., 2013; Storch et al., 2003). Despite increasing interest in the presence of relational aggression and victimization among emerging adults (i.e., persons between the ages of 18-29; Arnett et al., 2014). these topics have been understudied among adults. Given that we now know that relational aggression occurs among emerging adults and has adverse correlates in this population, it is important to examine its prevalence, correlates, and potential explanatory mechanisms throughout adulthood.

This study extended the literature by investigating the relationship between relational victimization and relational aggression in a sample of adult women recruited through Amazon.com's MTurk across three age groups (i.e., emerging adulthood, established adulthood, and middle adulthood). We tested predictions derived from social information processing theory (SIP; Crick & Dodge, 1994) to examine specific theoretically based mechanisms through which we expected relational victimization to lead to relational

aggression among some women who have experienced prior victimization. Further exploration of the relational victimization-to-aggression pathway should improve our understanding of these constructs and inform prevention efforts for those who have been victimized, as well as the development of intervention strategies for those engaging in relational aggression. Moreover, using an adult sample that is broader in age than emerging adulthood allowed us to expand the research on relational aggression to consider experiences that occur at other points in the lifespan and facilitate comparisons across different developmental periods. This is beneficial because relatively little is known about relational aggression and victimization among adults, reflecting an important gap in our understanding of the course and impact of this form of aggression across the lifespan. We focused on women in this study as there is evidence that relational aggression appears to be a normative aspect of female development (Archer & Coyne, 2005; Miller-Ott & Kelley, 2013) and speculation that the functions of relational aggression may be somewhat different for women than they are for men (Bailey & Ostrov, 2008; Tavris, 1989).

<div align="center">Relational Aggression in Women</div>

Relational aggression was first thought to be specific to girls (Crick, 1996; Crick & Grotpeter, 1995; Galen & Underwood, 1997), as it was found to be more common among girls while overt forms of aggression were more common among boys. Subsequent research with emerging adults, mostly utilizing college student samples, and the few studies conducted with adults produced mixed findings (Czar et al., 2011; Goldstein, 2011; Linder et al., 2002; Murray-Close et al., 2009). Most studies have found little evidence of gender differences in the frequency of relational aggression, and a few

have found that it is somewhat more common among men. Despite these findings,

relational aggression has long been perceived as a stereotypical female behavior (Coyne

et al., 2012). Even if it is no more frequent among women, there is reason to suspect that

it may function differently and have greater salience for women, supporting the value of

additional research focused on women (Coyne et al., 2012; Werner & Nixon, 2005).

First, relational aggression may be more important for women's social/psychological

well-being (Bailey & Ostrov, 2008; Werner & Crick, 1999). It operates through social

connections, which play an important role in girls' development (Archer & Coyne, 2005),

and women may use relational aggression to share frustrations and strengthen

relationships (Miller-Ott & Kelly, 2013, Ostrov et al., 2011). Second, women experience

different social pressures around anger and aggression (Tavris, 1989). Overt aggression is

perceived as being less acceptable, leading to other ways of expressing competition or

resolving conflict (Campbell, 2004; Geary, 1999). Because relational aggression is

perceived as more acceptable and more common (Coyne & Archer, 2005), women may

minimize its harmful effects (Miller-Ott & Kelly, 2013). Third, understanding women's

experiences with relational victimization may inform why they engage in relational

aggression even when recognizing it as harmful (Galen & Underwood, 1997; Goldstein

& Tisak, 2004). Relational aggression may serve as a means of attempting to regulate

peer relationships such that experiences with victimization affect the need for regulation

and the approach one may use. Finally, relational aggression may lead to more serious

consequences for women. Higher rates of substance use, eating disorders, adjustment

difficulties, and psychopathology have been reported in relationally aggressive and

victimized women (Ostrov et al., 2011; Storch et al., 2003; Werner & Crick, 1999).

Relational Aggression and Victimization

Adverse mental health correlates of relational aggression identified in emerging adult samples include depression, anxiety, hostility, low self-esteem, high impulsivity, anger, and substance use (Bagner et al., 2007; Dahlen et al., 2013; Goldstein et al., 2008; Robertson et al., 2020; Thomas, 2019). Correlates of relational aggression important to the quality of one's social relationships include peer exclusivity, decrease in marriage quality, jealousy, clinginess, and distrustfulness (Coyne et al., 2017; Goldstein, 2011; Linder et al., 2002). Among emerging adult women, relational aggression has also been linked to general social maladjustment, callous-unemotional traits, bulimia, and physical aggression (Crick, 1996; Rivera-Maestre, 2015; Werner & Crick, 1999; White et al., 2015). Relational victimization appears to have many of the same correlates as relational aggression, including anger, depression, anxiety, alcohol misuse, and low self-worth (Dahlen et al., 2013; Dibello et al., 2017; Goldstein et al., 2008; Kawataba et al., 2020). Victims of relational aggression are likely to be less trusting and more jealous of others (Linder et al., 2002), higher in interpersonal sensitivity (Lento, 2006), and more exclusive in their peer relationships (Ostrov et al., 2011).

Far less is known about the prevalence and correlates of relational aggression and victimization following emerging adulthood, though relational aggression is thought to continue throughout the lifespan in most group settings, as adults continue to shift away from overt aggression (Smith & Brain, 2000; Walker & Richardson, 1998). The limited research available following emerging adulthood has primarily focused on workplace settings and assisted living facilities. Relational victimization in the workplace has been linked with career burnout, high stress, anxiety, poor concentration, social withdrawal,

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and decreased self-esteem (Crothers et al., 2009; Culver, 2007; Lewis, 2006; MacIntosh, 2005; MacIntosh et al. 2010). A large body of research examines "workplace bullying" (i.e., systematic targeting of an individual in the workplace; Anjum et al., 2019) among nurses. Workplace bullying, particularly that perpetrated by coworkers (i.e., lateral bullying), includes behaviors that overlap with relational aggression. In the workplace literature, researchers have reported many examples of rumor spreading, gossip, ignoring others, exclusion, and diminishment in status (Crothers et al., 2009; Culver, 2007; Dellasega, 2009; Waschgler et al., 2013). MacIntosh and colleagues (2010) found that aggressors were predominately women in a variety of workplace settings, which was consistent with observations by Dellasega (2009) and Culver (2007).

Research into the social dynamics of assisted living facilities and nursing homes has also documented relational aggression among older adults (Funk et al., 2019; Goodridge et al, 2017; Kemp et al., 2012; Trompetter et al., 2011). Like much of the work with emerging adults, this research has identified adverse correlates of relational victimization as including depression, anxiety, loneliness, lower life satisfaction, and social withdrawal (Funk et al., 2019; Trompetter et al., 2011). In assisted living facilities, gossip, rumors, and exclusion run rampant (Funk et al., 2019; Kemp et al., 2012; Trompetter et al., 2011). Reciprocal aggression (e.g., experiencing both relational aggression and victimization) has been documented as a way to gain control over territories, cliques, and activities (Funk et al., 2019). These findings bolster the case that relational aggression and victimization are relevant across the lifespan.

Existing research highlights a positive relationship between relational victimization and relational aggression such that victimization is commonly considered

an important risk factor for aggression (Marsh et al., 2016; Poor et al., 2020; Wang et al., 2015; Yeung & Leadbeater, 2007). This relationship holds true even when the relational aggression is threatened versus carried out (Benenson et al., 2011; Loudin et al., 2003). Like the broader research on relational aggression, much of the evidence for this relationship comes from studies with children and early adolescents (Nakamura & Kawataba, 2019; Ostrov & Perry, 2019). For example, Kawataba and colleagues (2014) found that relational victimization predicted an increase in relational aggression among children, suggesting that victims may develop hostility or vengeful feelings and turn to aggression to express them. They explained this using social learning theory, where the children learned that relational aggression was an acceptable form of retaliation. This interpretation seems consistent with social information processing theory in that experiences of relational victimization may alter one's interpretation of social cues, impacting one's responses.

<div align="center">Social Information Processing Theory</div>

Social information processing (SIP; Crick & Dodge, 1994) theory was developed to model children's social behavior and adjustment, including aggressive behavior (Dodge, 1986). Early SIP models focused on the cognitive precursors (i.e., how one interprets and processes social interactions) of social behavior; subsequent models included emotional processes (Crick & Dodge, 1994; Lemerise et al., 2005). Crick and Dodge (1994) presented a reformulated model of SIP that moved away from the early model's four-step sequential structure to a cyclical model that considers noncognitive factors as secondary mechanisms of aggression. The reformulated model included six steps: 1) selective attention to and encoding of cues, 2) cue interpretation, 3) identifying

and clarifying goals or outcomes in the interaction, 4) response access or construction, 5) response decision, and 6) behavioral enactment (Arsenault & Foster, 2012; Crick & Dodge, 1994). A deficit in any of these steps may lead to aggressive behavior, particularly errors in schemas (i.e., patterns of thought or behavior; Crick & Dodge, 1994). Common SIP variables include hostile attribution biases (steps 1 and 2), social goals (step 3), normative beliefs (steps 1, 2, 4, and 5), and outcome expectancies (step 5). Between steps 1 and 2, Crick and Dodge (1994) proposed a feedback loop where the process of determining the meaning of a situation prompts one to test interpretations against original cues (Runions et al., 2013). This feedback loop creates the potential for rumination that may lead to aggression-based schemas in later steps (Anestis et al., 2009; Runions et al., 2013).

Most of the research investigating SIP theory has focused on its application to overt physical aggression and children's social adjustment (Crick & Dodge, 1996; Marks et al., 2012). Less is known about its utility in explaining relational aggression among adults, though there is some evidence that it applies to relational aggression (Long & Li, 2020). Moreover, normative beliefs about relational aggression among middle school students appear to operate as schemas that increase the likelihood of encoding threatening cues and engaging in relational aggression (Werner & Hill, 2010). Perhaps the clearest support for SIP theory as applied to relational aggression involves evidence of a positive relationship between hostile attribution bias and relational aggression in children and young adults (Linder et al., 2010; Werner, 2012; Yeung & Leadbeater, 2007). Given mixed findings on the question of SIP's utility in explaining relational and other forms of aggression (e.g., Crain et al., 2005) and limited applications to adult samples (Tuente et

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al., 2019), the present study sought to determine whether cognitive factors (i.e., anger rumination, hostile attribution biases, and normative beliefs about aggression) may help to explain the relationship between relational victimization and aggression.

<center>Anger Rumination</center>

Anger rumination refers to "unintentional and recurrent cognitive processes that emerge during and continue after an episode of anger experience" (Sukhodolsky et al., 2001, p. 690). A pattern of ruminating on anger-related events may activate schemas that impact the interpretation of future events. Anger rumination has been found to predict both overt and relational aggression (Anestis et al., 2009; Poor et al., 2020; Turner & White, 2015), likely by allowing one to have more time to contemplate aggressive thoughts and preventing resolution (Wang et al., 2018). In general, the anger rumination literature has found few if any gender differences among adults (Maxwell, 2004; Rusting & Nolen-Hoeksema, 1998; Sukhodolsky et al., 2001).

Less work has been done examining anger rumination as a direct predictor of relational aggression or as an indirect mechanism through which other predictors may exert their effect. Relational victimization may be an anger-inducing event for some, leading one to contemplate the event and potential outcomes of retaliation, thereby deciding on relational aggression as an outcome. This is consistent with SIP theory, as anger rumination likely occurs in the feedback loop between steps 1 and 2 (i.e., cue encoding and interpretation), leading to relationally aggressive behaviors. Dibello and colleagues (2017) suggested that people may be more likely to ruminate on experiences of relational aggression because much of it involves interpersonal manipulation and aggressors often deny malicious intent. Based on mixed findings and a lack of data from

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adult samples, additional research is needed to examine the role of anger rumination in relational aggression.

<center>Hostile Attribution Bias</center>

Hostile attribution bias (i.e., a tendency to interpret others' motives as hostile in ambiguous situations) is an important contributor to the development and maintenance of aggression across the lifespan (Van Bockstaele et al., 2020). Research has demonstrated a link between hostile attribution bias and reactive relational aggression (i.e., aggression that is retaliatory in nature), suggesting that a hostile interpretation of events may increase the likelihood of relational aggression (Bailey & Ostrov, 2008; Chen et al., 2012; Murray-Close et al., 2009; Van Bockstaele et al., 2020). Much of the research demonstrating a positive relationship between hostile attribution bias and relational aggression has involved children and early adolescents (Crick et al., 2002; Kokkinos et al., 2017; Werner, 2012; Yeung & Leadbeater, 2007), with one study finding this relationship was stronger for girls than boys (Gentile et al., 2011).

Although it has received far less attention than relational aggression, there is some evidence that hostile attribution bias is relevant in understanding relational victimization. For example, Kawataba and colleagues (2014) found that relational victimization was associated with greater levels of hostile attribution bias among Japanese children, leading them to posit that children who have experienced victimization may have vengeful thoughts toward the perpetrator and may be more likely to recall unpleasant memories. There may be a bidirectional relationship between hostile attribution bias and relational victimization in children (Kokkinos & Voulgaridou, 2018); however, the ability of this bias to predict relational victimization has not been examined extensively. Hostile

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attribution bias has also been found to mediate the relationship between relational victimization and aggression among emerging adult women and children (Ostrov et al., 2011; Yeung & Leadbeater, 2007). Researchers posited that relationally victimized individuals may interpret aggressors' actions as intentional and respond aggressively. This provides further support for the possibility that hostile attribution biases may be more related to relational provocations or retaliation.

SIP theory suggests that cognitive factors related to aggression may affect one another (Gagnon & Rochat, 2017). In a sample of adolescent girls with ADHD, Mikami and colleagues (2008) found that hostile attribution bias did not demonstrate as strong of a relationship with aggression as other SIP components, suggesting that there may be other factors to consider (e.g., anger rumination, normative beliefs). The combined impact of anger and hostile attribution bias has been examined in the context of aggression. Li and Xia (2020) discovered that hostile attribution biases and anger rumination mediated the relationship between trait anger and social aggression, a construct similar to relational aggression, in young adults. This study also provided evidence of a bidirectional relationship between hostile attribution bias and anger rumination, creating an aggression-related schema. A tendency towards anger rumination may cause people to have a low level of self-control, which may lead to aggression. Ruminating about irritation may cause people to become more negative when mildly provoked. Further studies have also supported this bidirectional relationship in undergraduates (Quan et al., 2019; Wang et al., 2019). Quan et al. (2019) also found that anger rumination mediated the relationship between hostile attribution biases and overall aggression.

Normative Beliefs About Aggression

Normative beliefs about aggression (i.e., the degree to which respondents perceive aggression as common and/or acceptable) are considered an important piece of social knowledge that increases the efficiency with which one processes social information in SIP (Crick & Dodge, 1994). Not surprisingly, the degree to which one regards relational aggression as acceptable is positively related to one's likelihood of engaging in relational aggression (Bailey & Ostrov, 2008; Goldstein, 2011; Goldstein et al., 2008; Linder et al., 2010; Werner & Hill, 2010; Werner & Nixon, 2005). It appears that normative beliefs are impacted by exposure to relational aggression over time (Linder & Werner, 2012; You & Bellmore, 2014). Those who have witnessed relational aggression may become used to it and view it as less negative (Coyne et al, 2012). Consistent with SIP theory, the perceived acceptability of aggression may impact encoding of negative emotion cues, leading people to interpret cues as hostile and consider aggressive retaliation (Coyne et al., 2012; Werner & Nixon, 2005).

Normative beliefs are likely to influence the mechanisms by which one attends to and reacts to cues in their environment, making them a possible moderator for predictors of aggression. Normative beliefs on aggression have been found to moderate the relationship between affective empathy and cyberbullying in a sample of adolescents from Singapore (Ang et al., 2017) so that the relationship between low levels of empathy and cyberbullying was stronger with high rates of the acceptability of aggression. Lower acceptability of aggression emerged as a protective factor in the relationship between peer risk factors and physical aggression in adolescents (Farrell et al., 2011). While we were not able to locate any published studies investigating the possible role of normative

beliefs in relational aggression in samples older than emerging adulthood, we expected that the findings from studies of emerging adults would likely apply to adults (i.e., individuals who perceive relational aggression as being more acceptable will be more likely to behave in relationally aggressive ways).

The Present Study

The present study examined the predicted pathway between relational victimization and relational aggression in a sample of adult women. Relational victimization has been found to predict relational aggression (Poor et al., 2020; Yeung & Leadbeater, 2007); however, the mechanisms behind this relationship are still unclear. SIP theory (Crick & Dodge, 1994) has been used to explain the development and maintenance of relational aggression through a primarily cognitive perspective (Linder et al., 2010; Long & Li, 2019; Werner & Hill, 2010). Hostile attribution bias and anger rumination occur primarily in steps 1 and 2 of the six-step SIP model (Anestis et al., 2009; Yeung & Leadbeater, 2007). Both variables can impact encoding and interpretation of cues that may lead to aggression-based schemas (Runions et al., 2013). Anger rumination and hostile attribution bias have been used as mediators in studies examining various forms of aggression (Li & Xia, 2020; Poor et al, 2020; Yeung & Leadbeater, 2007, Zhu et al., 2020). We predicted that both would partially mediate the relationship between relational victimization and aggression, operating as parallel mediators.

Normative beliefs about relational aggression have also been found to predict relational aggression (Bailey & Ostrov, 2008; Werner & Nixon, 2005) and may operate through the encoding of threatening cues (step 1, Werner & Hill, 2010) and deciding that relational aggression is a useful and/or acceptable behavior (steps 4 and 5, Bailey &

Ostrov, 2008; Miller-Ott & Kelly, 2013). Thus, we expected that normative beliefs about

relational aggression would moderate the relationships of hostile attribution bias and

anger rumination to relational aggression and the relationship between relational

victimization and aggression so that these relationships would be stronger for people with

higher levels of acceptability. The moderated mediation model we tested is presented in

Figure 1.
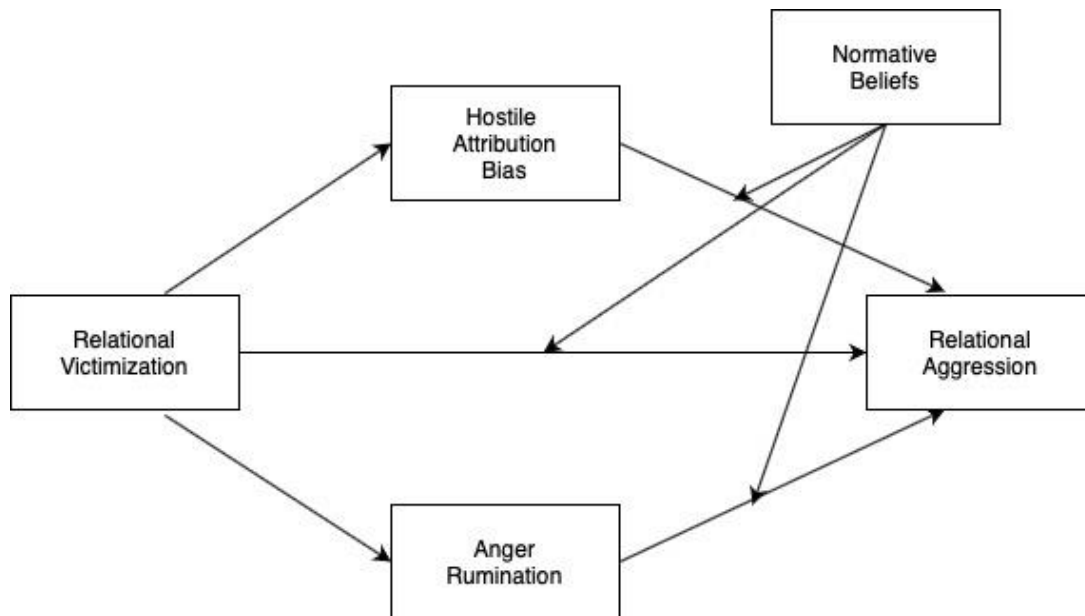
Figure 1. Hypothesized Moderated Mediation Model of Social Information Processing

Variables in the Path Between Relational Victimization and Relational Aggression

In addition to testing the model shown in Figure 1, we used invariance testing to

compare how the hypothesized model functioned across three developmental groups

suggested by Mehta and colleagues (2020): emerging adulthood (18-29), established

adulthood (30-45), and middle adulthood (45-65). We did not include participants over

65 because we expected it would be difficult to obtain sufficient numbers of participants

in this age range through our recruitment strategy using MTurk (Hitlin, 2016). We had no

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a priori basis for expecting the model to function differently across developmental groups or for predicting differences in the prevalence of relational aggression and victimization by age.

CHAPTER II – METHODS

Participants and Procedure

The following study procedures were approved by the University's Institutional Review Board (Appendix A). Potential participants were recruited from Amazon's Mturk.com, a human work task platform. Using this platform allows for the recruitment of more diverse samples that are more representative of the United States than most samples obtained through university subject pools and social media platforms (Berinsky et al., 2012; Casler et al., 2013). Workers who were interested read a brief description of the study, compensation ($2), and its qualifications (i.e., identify as a woman, be between the ages of 18 and 65, and reside in the United States). Potential participants were informed that age quotas would be utilized to ensure a diverse sample and that the study would close when quotas were met. Those who signed up for the study were directed to a Qualtrics link with the electronic consent form (Appendix B), followed by a brief screener to determine eligibility for the study. A total of 1,305 eligible participants were entered into the study. Study questionnaires were presented in random order to prevent order effects. To promote data integrity, two quality assurance checks consistent with Meade and Craig (2012) were used. First, two directed response items (e.g., "Please answer '3' to this question") were embedded into two of the study questionnaires. Second, participants' reported age was compared against their reported date of birth. Those who failed at least one directed response item ($n = 91$) or whose reported age did not match their date of birth ($n = 228$) were removed without compensation, resulting in an initial data set of 986 participants.

Following data collection, 64 additional participants were removed due to excessive missing data (i.e., missing all data on at least one questionnaire), 543 for invalid responses to open-ended questions used to collect contextual information about relational aggression and employment setting, 18 for reporting inconsistent information about their gender identity throughout the study, two for IP addresses located outside of the U.S., ten with a reported age above 65, four for using the same response option on all items, and two removed for outliers determined by Mahalanobis' distance. The final sample used for all analyses included 343 women between the ages of 18 and 65 ($M=$ 37.04, $SD=$ 11.26). The sample was predominately White (85.4%), with a small percentage of Black (8.2%), Asian (2.6%), American Indian/Alaskan Native (1.2%), and other/unknown participants (2.7%) making up the rest. 118 participants comprised the emerging adulthood group, 123 comprised the established adulthood group, and 102 comprised the middle adulthood group. For additional information on the demographic characteristics of the sample, see Appendix D.

<div align="center">Instruments</div>

Demographic Questionnaire

A short demographic questionnaire was included to assess participants' demographic characteristics for the purpose of describing the sample (i.e., race, level of education, employment status), apart from those used to check their eligibility for inclusion in the study.

Self-Report of Aggression and Social Behavior Measure (SRASBM)

The SRASBM (Linder et al., 2002; Morales et al., 2002) is a 56-item self-report measure assessing overt and relational aggression and victimization in peer and romantic

relationships, peer exclusivity, and prosocial behaviors. This study administered the 7-item General/Peer Relational Aggression scale (with an additional 4 items to facilitate some exploratory analyses) and the 4-item General/Peer Relational Victimization Scale. Respondents rate the scale items using a 7-point scale, ranging from 1 ("not at all true") to 7 ("very true"). Higher scores on these scales indicate more relational aggression and victimization. Previous studies have demonstrated that the SRASBM subscales have adequate reliability (αs = .69 to .88) when used with emerging adult samples (Dahlen et al., 2013; Knight et al., 2018; Little & Seay, 2014; Nakamura & Kawataba, 2019). Murray-Close et al. (2009) provided evidence of the reliabilty of the SRASBM in a sample of adults aged 25-45 (αs = .66 to .83). Evidence of construct validity was demonstrated by comparing scores on these scales with measures of relational aggression and related constructs (i.e., social aggression, indirect aggression; Linder et al., 2002). Following this measure, respondents were given the option to report in what settings relationally aggressive behavior occurred.

Anger Rumination Scale (ARS)

The ARS (Sukhodolsky et al., 2001) is a 19-item self-report measure of anger rumination. The measure is comprised of four subscales: Angry Afterthought, Thoughts of Revenge, Angry Memories, and Understanding of Causes. Consistent with previous studies (e.g., Anestis et al., 2009; Sukhodolsky et al., 2001; Takebe et al., 2016; Wang et al., 2018), we used the total score to capture overall anger rumination. Respondents rate each item on a 4-point scale, from 1 ("almost never") to 4 ("almost always), and higher scores indicate greater levels of anger rumination. The ARS demonstrates adequate reliability in emerging adult samples (αs= .91-.94; Anestis et al., 2009; Guerra & White,

2017; Poor et al., 2018). Sukhodolsky and colleagues (2001) provided support for convergent validity through comparisons of the ARS with measures of similar anger-related constructs (e.g., trait anger).

Normative Beliefs about Relational Aggression

The Normative Beliefs about Relational Aggression measure was developed by You and Bellmore (2014) based on previous measures of normative beliefs about overt aggression to assess respondents' perceptions of the degree to which relationally aggressive behaviors are acceptable. This measure consists of 12 items, and respondents are asked to indicate the acceptability of each behavior using a 4-point scale ranging from 1 ("definitely wrong") to 4 ("definitely okay"). The measure yields only a total score, which is calculated as the mean of the 12 items so that higher scores reflect the perception that relational aggression is more acceptable. You and Bellmore (2014) reported adequate internal consistency in a college student sample ($\alpha = .78$) and offered initial support for the validity of their measure through comparisons with measures of witnessing relational aggression and susceptibility to peer influence.

Social Information Processing-Attribution and Emotional Response Questionnaire (SIP-AEQ)

The SIP-AEQ (Coccaro et al., 2009) is a 48-item self-report measure that assesses attributional and emotional responses to socially ambiguous situations through eight vignettes. Respondents rate the perceived likelihood of hostile intent, benign intent, and emotions related to the incident on a 4-point scale ranging from 0 ("not at all likely") to 3 ("very likely"). For the purposes of this study, only the Hostile Attribution Bias subscale of the SIP-AEQ was used. Specifically, the sum of the 16 hostile interpretation item

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scores was summed to create a hostile attribution bias score (Li et al., 2020; Wang et al.,

2019). The reliability of the subscale has been deemed adequate in adult samples (αs

=.88-.89; Li et al., 2020; Murray-Close et al., 2011; Wang et al., 2019). Evidence of

convergent and discriminant validity were supported through comparisons with measures

of aggression and extraversion (Coccaro et al., 2009

CHAPTER III – RESULTS

Preliminary Analyses

Descriptive statistics, tests for mean differences by developmental group, and invariance testing (reported in the Primary Analyses section) used non-transformed latent variables. Descriptive statistics for each variable by developmental group are included in Table 1 along with the results of a one-way (developmental group) Analysis of Variance (ANOVA). Small but statistically significant between-groups age differences were observed on anger rumination and relational aggression. Due to violations of homogeneity of variance, Welch's test was used to determine mean differences, and a Games-Howell post hoc test was used to identify which groups differed (Field, 2013). Participants in the middle adulthood group reported less anger rumination (-5.55, p = .001) and relational aggression than those in the emerging adulthood group (-4.73, p = .02).

Relational victimization and anger rumination were both negatively skewed. Normative beliefs, relational aggression, relational victimization, and hostile attribution bias displayed negative kurtosis, suggesting a wide range of responses. Cronbach's alphas and bivariate correlations among study variables are reported in Table 2. All alpha coefficients were greater than .90, reflecting good internal consistencies. In examining the bivariate relationships, relational victimization, hostile attribution bias, anger rumination, and normative beliefs of relational aggression were all positively related to relational aggression. Normative beliefs and relational aggression were highly correlated (.83), which may potentially impact the statistical power of the model. Relational victimization was positively related to hostile attribution bias and anger rumination.

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Hostile attribution bias and anger rumination were both positively related to the moderator, normative beliefs of relational aggression.

Table 1 *Means, Standard Deviations, and One-Way Analyses of Variance for Differences by Developmental Group*

Variable	Emerging Adulthood		Established Adulthood		Middle Adulthood		F	p	η^2
	M	SD	M	SD	M	SD			
NBRA[a]	2.37	0.74	2.19	0.74	2.16	0.79	2.7	0.07	0.02
AR[b]	50.75	11.32	48.38	13.47	45.2	15.08	4.7	0.01	0.03
RA[c]	26.85	12.07	23.5	12.77	22.12	12.81	4.33	0.01	0.02
RV[d]	16.77	6.21	16.18	7.02	14.99	7.43	1.83	0.16	0.01
HAB[e]	40.97	9.41	39.26	11.16	39.17	11.03	1.19	0.31	0.01

Note. NBRA = Normative beliefs of relational aggression; AR = anger rumination; RA = relational aggression; RV = relational victimization; HAB = hostile attribution bias.

[a]*df* = 2, 222. [b]*df* = 2, 217. [c]*df* = 2; 223. [d]*df* = 2, 220. [e]*df* = 2, 221.

Table 2 *Alpha Coefficients and Intercorrelations Among Measures*

Variable		Correlation				
	α	1	2	3	4	5
1. NBRA	0.93	--				
2. AR	0.95	.55*	--			
3. RA	0.95	.83*	.68*	--		
4. RV	0.90	.62*	.63*	.78*	--	
5. HAB	0.92	.56*	.57*	.65*	.55*	--

Note. NBRA = Normative beliefs of relational aggression; AR = anger rumination; RA = relational aggression; RV = relational victimization; HAB = hostile attribution bias.

*p < .001.

Primary Analyses

Due to violations of normality (i.e., skewness and kurtosis), bootstrapping was used to create 95% bootstrap confidence intervals based on 10,000 bootstrapped samples in the moderated mediation model (Field, 2013). Per recommendations by Ng and Chan (2020), factor scores were created for each variable to further address bias of latent variables in moderation analyses using the bias avoiding method (SL). The factor scores were used in place of latent variables in the structural model. The study hypotheses were tested through structural equation modeling using the "lavaan" package for R (v0.6-11; Rosseel, 2012).

Invariance Testing

To explore potential differences in the measurement model across developmental groups, invariance testing was conducted on the measurement model using multi-group confirmatory factor analysis. Exploration of the hypothesized structural model could not be completed due to poor model fit. Following recommendations from Vandenberg and Lance (2000), different model constraints were tested to assess invariance. The use of CFI and SRMR as fit measures are supported in models with lower degrees of freedom (Kenny et al., 2015). Model fit recommendations from Putnick and Bornstein (2016) suggesting criteria of .01 change in CFI and .015 change in SRMR were used to assess invariance in the models. Configural invariance of the measurement model resulted in c^2 = 6548.704 (df = 5379, p <.001), CFI = 0.996 and SRMR = 0.086. Loadings were then constrained to test for metric invariance, resulting in a good fit. Changes in CFI and SRMR were indicative of invariance (ΔCFI = .004, ΔSRMR = -0.07). Because fit measures suggested invariance, this would indicate no differences in factor loadings

across groups. Next, loadings and intercepts were constrained to test for scalar

invariance, resulting in good fit. Changes in CFI and SRMR were indicative of invariance

(ΔCFI = -0.004, ΔSRMR = 0.07). Because fit measures suggested invariance, this would

indicate scalar invariance. These findings suggest no differences in the measurement

model across developmental groups, meaning that the model appears to be measuring the

same constructs across groups.

Mediation Analyses

We first predicted that both anger rumination and hostile attribution bias would

partially mediate the relationship between relational victimization and relational

aggression. Coefficients for the two *a* (relational victimization predicting both anger

rumination and hostile attribution bias), two *b* (anger rumination and hostile attribution

bias predicting relational aggression)*,* and the *c'* paths are shown in Table 3 and Figure 2.

Relational victimization was positively associated with both hostile attribution bias (β =

0.67, *p* <.001, 95% CI [0.136-.170]) and anger rumination (β = .72, *p* < .001, 95% CI

[0.314-0.391]). Both hostile attribution bias (β = 0.27, *p* < .001, 95% CI [0.888-1.700])

and anger rumination (β = 0.14, *p* < .001, 95% CI [0.098-0.522]) were positively

associated with relational aggression. Additionally, the *c* pathway between relational

victimization and relational aggression, without the mediators, was significant (β = .58, *p*

< .001, 95% CI [0.506-0.745]). Finally, the *c'* path was significant (β = .86, *p* < .001,

95% CI [0.880-0.938]), meaning that relational victimization was associated with

relational aggression while controlling for hostile attribution bias and anger rumination.

The indirect effect of relational victimization on relational aggression through hostile

attribution bias was .18 (95% CI [0.132-0.263]), and the indirect effect of relational

victimization on relational aggression through anger rumination was .12 (95% CI [0.080-0.201]). Because the confidence intervals did not include zero and the *c'* path was significant, the hypothesis that both hostile attribution bias and anger rumination would partially mediate the relationship between relational victimization and relational aggression was supported.

Table 3 *Model Examining Hostile Attribution Bias and Anger Rumination as Mediators of the Relationship Between Relational Victimization and Relational Aggression*

Path	β	SE	p	
a1	0.67	0.01	<.001	
a2	0.72	0.02	<.001	
b1	0.27	0.16	<.001	
b2	0.14	0.08	<.001	
c'	0.86	0.03	<.001	
c	0.58	0.05	<.001	
Indirect Effects	Effect	BootSE	BootLLCI	BootULCI
HAB	0.18	0.030	0.132	0.263
AR	0.10	0.036	0.187	0.201

Note. Bootstrap CI's do not cross zero which implies a difference between c and c'. AR = anger rumination; RA = relational aggression.
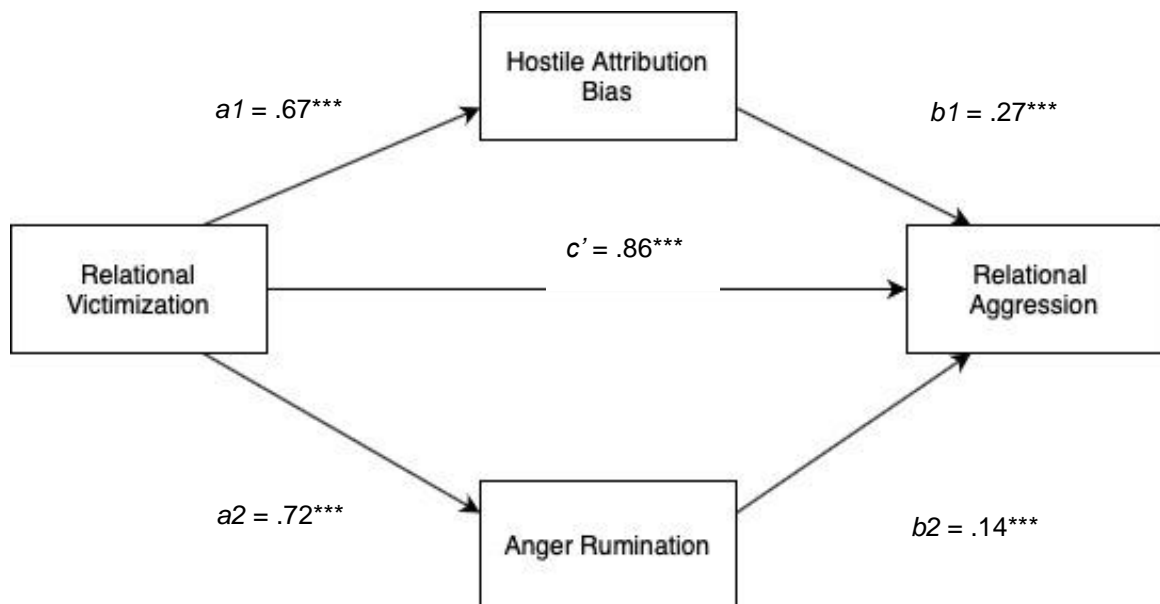
Figure 2. Observed Parallel Mediation Model

Moderated Mediation Analyses

The mediation model was then examined by including normative beliefs about

relational aggression as a moderator of the paths between relational victimization and

relational aggression, hostile attribution bias and relational aggression, and anger

rumination and relational aggression (see Table 4). The interaction between normative

beliefs and relational victimization was positively associated with relational aggression (β

= .12, p < .001, 95% CI [0.095-0.430]), indicating that normative beliefs moderated the

relationship between relational victimization and aggression. This moderation was

significant at low, average, and high levels of normative beliefs. Simple slopes tests

indicated that the strength of the relationship between relational victimization and

relational aggression is greater when normative beliefs are higher (see Table 5 and Figure

3). This finding was consistent with the hypothesis that increased perceptions of

acceptability of relational aggression would strengthen the relationship between relational

victimization and relational aggression.

The interaction between normative beliefs and hostile attribution bias was

negatively associated with relational aggression (β = -.10, p = <.001, 95% CI [-1.155- -

0.255]). The 95% confidence interval for the index of moderated mediation did not

contain zero (β = -0.07, p <.001, 95% CI [-0.178- 0.041], suggesting that there were

differences between the indirect effects at different levels of the moderator. This

moderation was only significant at low levels of normative beliefs (see Table 5 and

Figure 4). Simple slopes tests indicated that the indirect effect of relational victimization

on relational aggression through hostile attribution bias was only significant at low levels

of normative beliefs. This finding was partially consistent with our hypothesis, as we expected normative beliefs to strengthen the relationship between hostile attribution bias and relational aggression in general.

Because the 95% confidence interval for the relationship between relational aggression and the interaction between normative beliefs and anger rumination contained zero, there was not a significant moderating effect ($\beta = .04$, $p = .155$, 95% CI [-0.427-0.126]. Further, the index of moderated mediation was not significant, suggesting there were no differences between the indirect effects at different levels of the moderator ($\beta = .02$, $p = .156$, 95% CI [-0.152-0.044]. This finding was not consistent with the hypothesis that normative beliefs would strengthen the relationship between anger rumination and relational aggression.

Table 4 *Model Examining Moderated Mediation Analyses*

Predictor	Outcome	β	SE	p	LLCI	ULCI
RV	HAB	0.67	0.01	<.001	0.137	0.17
RV	ARS	0.72	0.02	<.001	0.313	0.392
RV	RA	0.54	0.03	<.001	0.346	0.585
HAB	RA	0.08	0.11	0.01	-0.035	0.595
AR	RA	0.07	0.06	0.03	-0.085	0.296
NBRA	RA	0.65	0.05	<.001	1.098	1.599
NBRA*RV	RA	0.15	0.05	<.001	0.088	0.394
NBRA*HAB	RA	-0.10	0.20	<.001	-1.155	-0.255
NBRA*AR	RA	-0.04	0.10	0.15	-0.420	0.127

Indirect Effect	Effect	BootSE	BootLLCI	BootULCI
HAB	0.05	0.02	-0.005	0.093
AR	0.05	0.02	-0.029	0.107
Index of Moderated Mediation	Effect	BootSE	BootLLCI	BootULCI
HAB	-0.07	0.03	-0.178	-0.041
AR	-0.03	0.03	-0.148	0.046

Note. 1) Hostile attribution bias mediating relational victimization and aggression. 2) Anger rumination mediating relational victimization and aggression. NBRA = Normative beliefs of relational aggression; AR = anger rumination; RA = relational aggression; RV = relational victimization; HAB = hostile attribution bias.

Table 5 *Conditional Effects of Predictors on Relational Aggression*

NBRA	RV to RA				
	β	SE	p	LLCI	ULCI
-1 *SD*	0.45	0.04	<.001	0.246	0.428
M	0.54	0.03	<.001	0.346	0.585
+1 *SD*	0.63	0.04	<.001	0.419	0.802
NBRA	RV to HAB to RA				
	β	SE	p	LLCI	ULCI
-1 *SD*	0.07	0.02	<.001	0.023	0.14
M	0.05	0.02	0.01	-0.005	0.093
+1 *SD*	0.03	0.02	0.58	-0.043	0.057

Note. NBRA = Normative beliefs of relational aggression; RV = relational victimization; RA = relational aggression; HAB = hostile attribution bias.
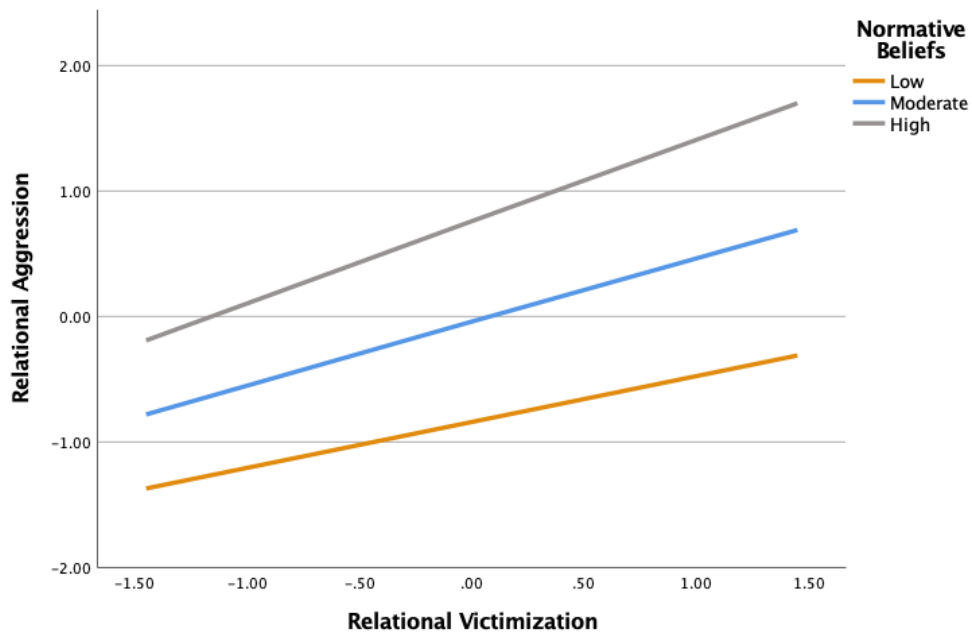
Figure 3. Interaction of Relational Victimization and Normative Beliefs of Relational

Aggression Interaction on Relational Aggression
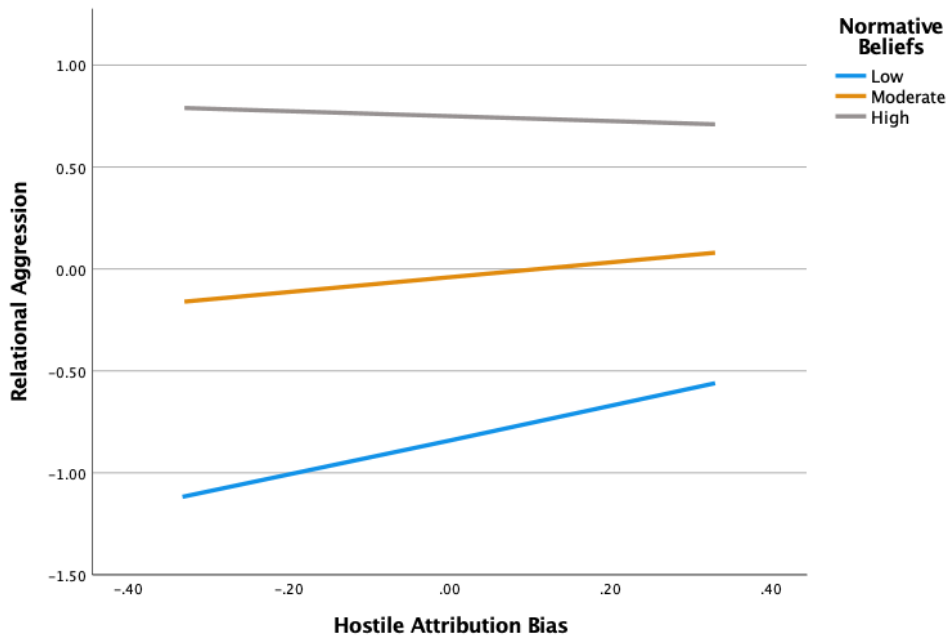
Figure 4. Conditional Indirect Effect of Normative Beliefs the Relationship of Relational

Victimization on Relational Aggression through Hostile Attribution Bias

CHAPTER IV – DISCUSSION

The present study extended the literature on relational aggression in two primary ways. First, our use of a sample of adult women (i.e., between the ages of 18 and 65) provided a broader developmental perspective on the nature of relational aggression. Most of the research on relational aggression has focused on children and early adolescents, with emerging adults (i.e., 18-29) receiving greater attention due, in part, to evidence of its adverse correlates among college students (e.g., Dahlen et al., 2013; Storch et al., 2003). The limited work with persons older than 29 has tended to be setting-specific, focusing on specific occupations (e.g., nursing) or assisted living facilities. While there is evidence that relational aggression causes problems in workplaces, nursing homes, and assisted living facilities (e.g., Funk et al., 2019; Goodridge et al., 2017; MacIntosh et al., 2010), information is limited apart from these contexts. We sampled adult women between the ages of 18 and 65 and made comparisons among emerging adults (18-29), established adults (30-45), and middle adults (45-65). Second, we tested a moderated mediation model based on Social Information Processing (SIP) theory (Crick & Dodge, 1994) by examining two parallel mediators of the relationship between relational victimization and relational aggression: hostile attribution bias and anger rumination. We included normative beliefs about relational aggression as a moderator of the relationships of relational victimization, hostile attribution bias, and anger rumination to relational aggression to better understand its role. We also tested the invariance of the hypothesized model across the three developmental periods to determine if there were differences in how it performed.

Given the limited data available on the prevalence of relational aggression and victimization across the lifespan, we refrained from making predictions about differences by developmental group and approached our analyses in an exploratory manner. We found no between-group age differences for normative beliefs about relational aggression, relational victimization, or hostile attribution bias among emerging adults, established adults, and middle adults. While the cross-sectional design was an important limitation that prevents drawing conclusions about how relational victimization may change over the lifespan, these findings suggest that women continue to experience relational victimization throughout established and middle adulthood at similar rates reported during emerging adulthood. Similarly, there were no differences in the perceived acceptability of relational aggression or hostile attribution bias across developmental groups. Age differences were observed for relational aggression and anger rumination. Specifically, emerging adults scored higher on measures of relational aggression and anger rumination than did middle adults. The distribution of relational aggression scores showed this behavior continues to occur across adulthood but appears to be somewhat less frequent among middle adults. These findings provide additional evidence that relational aggression and victimization remain relevant across adulthood. While consistent with previous research on workplace bullying and assisted living communities (e.g., Dumont et al., 2012; Funk et al., 2019; Kemp et al., 2012; Workplace Bullying Institute, 2011), the present findings were obtained in a broader sample that was not context-limited and included a wide age range. Overall, these results support the relevance of relational aggression and victimization to women past the emerging adult age range on which much of the research has focused.

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Consistent with the hypothesized model based on SIP, relational victimization, hostile attribution bias, and anger rumination were positive predictors of relational aggression. These findings were consistent with results found in college student samples (Ostrov et al., 2011; Poor et al., 2020) suggesting that these variables remain relevant to relational aggression throughout at least middle adulthood. Research has demonstrated that victimization is an important risk factor to consider for aggression (Marsh et al., 2016; Wang et al., 2015); however, these studies have focused on samples of children and adolescents. The present findings provide further support for the relationship between relational victimization and relational aggression in adults. Both are associated with several adverse correlates (e.g., psychological distress, substance use; Dahlen et al., 2013), suggesting that it is important to examine the mechanisms underlying their relationship. As expected, both hostile attribution bias and anger rumination partially mediated the relationship between relational victimization and relational aggression, which is consistent with SIP theory (Crick & Dodge, 1994). Hostile attribution and anger rumination primarily occur in steps 1 and 2 (i.e., encoding of cues, cue interpretation) of the six-step model of aggression development and maintenance. While the present research design does not permit causal interpretations, these findings are consistent with the possibility that the cognitive processes involved in hostile attribution and anger rumination contribute to the development of aggression-based schemas (Runions et al., 2013), which in turn increase the likelihood of relational aggression. That is, one reason for the positive association between relational victimization and relational aggression may be that relational victimization leads women to ruminate about their anger and interpret social situations as overly hostile, increasing the chances that they will aggress.

Normative beliefs moderated the relationship between relational victimization and relational aggression. Specifically, the strength of this relationship was greater when relational aggression was perceived as more acceptable. This finding suggests that the relationship between relational victimization and relational aggression is stronger for women who view relational aggression as more acceptable and is consistent with research examining the role of normative beliefs in other forms of aggression (e.g., cyberaggression; Ang et al., 2017). Contrary to our hypotheses, normative beliefs did not moderate the relationship between anger rumination and relational aggression. Thus, the role anger rumination plays in the relationship between relational victimization and aggression was independent of the degree to which one perceives relational aggression as acceptable. Women who experience high levels of anger rumination may be more relationally aggressive, regardless of how acceptable they perceive relational aggression to be. Further, normative beliefs only moderated the relationship between hostile attribution bias and relational aggression at low levels. That is, the relationship between hostile attribution bias and aggression was stronger when relational aggression was perceived as less acceptable.

Measurement invariance testing also confirmed no differences in the measurement model between developmental groups. This provides further support to the utility of the relational aggression measures used in this study, as participants from each developmental group appeared to interpret the measure conceptually in the same way. As scalar invariance was confirmed, we can confidently assert that the significant differences in the means of relational aggression and anger rumination are likely due to factors other than age.

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Clinical Implications

The current findings could prove useful for prevention and intervention strategies aimed at reducing the frequency and impact of relational aggression on adult women. The positive association between relational victimization and relational aggression suggests that women experiencing this form of victimization are more likely to aggress against others. This finding was consistent with previous research showing a similar relationship (Ostrov et al., 2011; Yeung & Leadbeater, 2007). Hostile attribution bias and anger rumination partially mediated this relationship, suggesting that both may be helpful in understanding why some women who have been victimized are more aggressive. While the present research design does not support interpretations involving causal relationships, these findings are consistent with the possibility that relational victimization leads women to ruminate on their anger and form increasingly hostile attributions, which may fuel relationally aggressive behavior. This suggests that anger management interventions, especially those including cognitive restructuring aimed at helping clients reduce anger rumination and reappraise social situations in more adaptive ways, may be beneficial for women who have experienced relational victimization. There are few available treatments targeting relational aggression for adults; however, there are numerous evidence-based interventions shown to improve clinically dysfunctional anger (DiGiuseppe & Tafrate, 2003; Howie & Malouff, 2014) that could be adapted. In addition, at least one treatment protocol specifically addressing hostile attribution bias in adults appears promising in addressing other forms of aggression (Osgood et al., 2021).

The degree to which women perceived relational aggression as acceptable (i.e., their normative beliefs about relational aggression) strengthened the relationship between

relational victimization and aggression. Thus, it may be helpful for clinicians to directly assess clients' perceptions about the acceptability of relational aggression when they become aware that relational victimization and/or aggression are relevant to treatment. Psychoeducation addressing the acceptability of relational aggression could help clients re-evaluate their beliefs about its acceptability and better recognize the harm it can cause.

From the perspective of prevention, experiences of relational victimization, hostile attribution bias, anger rumination, and the perceived acceptability of relational aggression appear to be potential risk factors for relational aggression among adult women. Assessing these factors may aid in identifying women most at risk for engaging in relational aggression, which could lead to the development of targeted prevention efforts (e.g., psychoeducation on healthy relationship strategies, empathy enhancement). Many of the women in the present study reported experiencing relational aggression in their workplace. Employers would benefit from creating explicit policies addressing relational aggression, informing workers how it can be disruptive in the workplace, and conducting awareness and healthy communication trainings (Caponecchia et al., 2020).

One of the most important implications of the present findings concerns age. While emerging adult women (age 18-29) reported more relational aggression than middle adult women (age 45-65), the findings of this study demonstrated that women continue to engage in relational aggression during middle adulthood. Specifically, women between the ages of 45-65 most commonly rated relationally aggressive statements describing relationally aggressive behaviors as "sometimes true" of them. Moreover, the three developmental groups did not differ in their experiences of relational victimization. Also of note, the results of invariance testing revealed no difference in the conceptual

understanding of relational aggression, suggesting that differences in scores may be due to factors other than age (e.g., relationship quality). Thus, relational aggression and victimization appear to remain relevant to women throughout middle adulthood. Clinicians are encouraged not to make the mistake of assuming that women outgrow relational aggression. It appears that many women would benefit from addressing their experiences of relational victimization and aggression in treatment, regardless of their age. Women who participated in the present study described many settings in which they experienced relational aggression, and the most common descriptions involved aggression between coworkers, friends, and family (see Appendix D). Much of the treatment for relational aggression focuses on children and adolescents (Dellasega, 2005; Leff et al., 2010). As we now have evidence that relational aggression is occurring far into adulthood, it would be prudent to develop and evaluate developmentally appropriate treatments for adult women.

<div align="center">Limitations and Future Directions</div>

There are several limitations of the current study to be considered when interpreting the results. First, the current study only focused on relational aggression in adult women. Relational aggression and victimization are relevant for men, and future research may consider conducting a similar study with men. Second, the reliance on self-report measures raises concerns about response bias, including social desirability and inaccurate recall of aggressive behavior. Including measures of social desirability would have helped to assess its potential impact; however, the addition of other-report measures or direct observations would have strengthened the methodology even more so. Third, the cross-sectional design of the study means that causal relationships cannot be inferred.

While results were consistent with the premise that relational victimization predicts relational aggression, and this relationship is mediated by hostile attribution bias and anger rumination, future research should consider more rigorous designs to directly evaluate this possibility. For example, researchers could utilize diary studies in which participants record when they experience relational victimization. Using baseline scores of hostile attribution bias and anger rumination, researchers could assess any changes in scores following relational victimization. Fourth, many of the study variables were nonnormally distributed. Due to a lack of previous research, it is unclear whether this was a product of the sample or reflects the nature of the constructs assessed. Future research replicating this study should explore the cause of the variables' skewness and kurtosis. Finally, participants could be asked to report how they responded to the instances of relational victimization to track whether they engaged in relational aggression afterward. It could also be that normative beliefs increased as a result of engaging in relational aggression, not just relational victimization. Thus, we do not know the ways in which women may normalize this behavior which may affect the relationships found in this study.

Lastly, the use of MTurk to recruit participants resulted in a sample that does not reflect the U.S. population in many important ways, limiting the generalizability of the findings. For example, the sample was predominately White, employed full-time, and well-educated (i.e., most participants had at least a bachelor's degree). This was not consistent with the U.S. Census (2020) data, which shows that the U.S. is 76.3% White, 32.9% with a bachelor's degree, or the Bureau of Labor Statistics (2020), which reports 63.1% of Americans working full-time. The validity of the data provided by participants

recruited through MTurk is another limitation worth noting. It was necessary to add an additional validity measure during data collection due to the amount of invalid data initially provided. Despite implementing multiple methods to promote data integrity, this was concerning. Future researchers may benefit from considering alternative means of recruiting participants or utilizing even more validity checks (see Bauer et al., 2020, for a comprehensive review of suggestions for researchers using MTurk).

In addition to addressing the study's limitations as described above, future research should examine other possible variables that may help to explain the association between relational victimization and relational aggression. These could include additional independent variables, mediators, and/or moderators. Hostile attribution bias and anger rumination only partially mediated the relationship between relational victimization and relational aggression. The explanatory power of the model might have been enhanced through the inclusion of other independent variables. For example, Poor et al., (2020) found that trait anger predicted relational aggression, and anger rumination mediated this relationship. It would be interesting to examine if this relationship would hold true with hostile attribution bias as a mediator. Several other possible mediators or moderators could be worth examining to improve our understanding of the relationship between victimization and aggression. Individual differences in emotion regulation, trait empathy, moral disengagement, vengeance, or trait forgiveness all seem relevant. Although more difficult to assess, another relevant variable to consider might involve participants' interpretation of their own victimization experiences. For example, a participant who dismisses their victimization as "no big deal" may be less likely to view aggression as an acceptable response than one who experienced it as life changing. A major contribution

of this study was the inclusion of adult women between the ages of 18 and 65 in the analyses and the comparisons across three age groups corresponding to emerging adulthood, established adulthood, and middle adulthood. The findings from this study suggest that research in relational aggression should include adult women in its samples. While the difference in levels of relational aggression and anger rumination could not be explained by age, research could explore what other differences may be contributing to this difference (i.e., changes in social groups or relationships). Finally, this study only included measures of peer relational aggression and victimization, so it may be beneficial to determine if the current findings can be replicated with romantic relational aggression and victimization.

Conclusion

The present study contributed to the growing literature on relational aggression by taking a broader developmental approach to examine relevant predictors based on social information processing theory. This study was one of the first to explore relational aggression in a sample of adult women (18 to 65) that was not limited to a specific workplace or residential setting. Findings provided further support for the role of relational victimization as a predictor of relational aggression and evidence that hostile attribution bias and anger rumination partially mediate this relationship. Additionally, further support was found for normative beliefs of relational aggression strengthening the relationship between relational victimization and relational aggression. The adverse correlates of relational aggression and victimization among adults (Dahlen et al., 2013; Goldstein et al., 2011; White et al., 2015) suggest a need to develop evidence-based prevention and intervention strategies aimed at reducing their frequency and decreasing

their impact. The present findings indicate that adult women should not be omitted from these efforts.

ONLINE INFORMED CONSENT

PROJECT INFORMATION

Project Title: Female Social Norms and Behaviors
Principal Investigator: Alison Poor   Email: alison.poor@usm.edu
College: Education and Human Sciences   School: Psychology

RESEARCH DESCRIPTION

Purpose:
We are conducting this study to learn more about the role of social norms and beliefs in the social behaviors of adult women. Our hope is that improved understanding in this area may ultimately lead to the development of effective approaches for minimizing the frequency and impact of adverse social behaviors.

Description of Study:
If you provide consent to participate in this study, you will be asked 3 questions to confirm your eligibility. This study utilizes quotas to ensure a diverse sample and will close to workers in particular groups once a quota is met. Assuming you are eligible, you will be asked to provide some non-identifying demographic information about yourself and asked to complete online questionnaires about various aspects of your beliefs, perceptions of various social situations, how you typically deal with angry feelings, and social behavior. The study will take no more than 20 minutes to complete. You may skip content you are uncomfortable answering; however, it is necessary to reach the end of the survey in order to receive compensation. Please be aware that quality assurance checks are used to make sure that you are reading each question carefully and answering thoughtfully. Workers who do not pass these checks will NOT receive compensation for completing the study.

Benefits:
Workers who complete the study and pass all quality assurance checks will receive $2 to their MTurk account; those who do not complete the study or do not pass all quality assurance checks will not receive compensation. There are no other anticipated personal benefits of participating in this study; however, we anticipate that the results of the study will help us better understand the social behavior of adult women and some of the factors that affect it.

Risks:
There are no foreseeable risks of participating in this study beyond those associated with everyday life. If you feel that reading any of the survey questions has resulted in distress, please stop and notify the researcher (Alison Poor; **alison.poor@usm.edu**). If you should

continue to be troubled by participation in this study, you may also contact the research supervisor, Dr. Eric Dahlen (Eric.Dahlen@usm.edu).

Confidentiality:
The online questionnaires are intended to be anonymous, and the information you provide will be kept strictly confidential. Any potentially identifying information will not be retained with your responses.

Alternative Procedures:
If you decide not to participate in this study, you may return to MTurk to sign up for a different study.

Participants' Assurance:
This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS 39406-0001, 601-266-5997.

Any questions about this research project should be directed to the Principal Investigator using the contact information provided above.

CONSENT TO PARTICIPATE IN RESEARCH

I understand that participation in this project is completely voluntary, and I may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described above, all personal information will be kept strictly confidential, including name and other identifying information. All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. Any new information that develops during the project will be provided to me if that information may affect my willingness to continue participation in the project.

CONSENT TO PARTICIPATE IN RESEARCH

By clicking the box below, I give my consent to participate in this research project.

☐ Check this box if you consent to this study and then click "Continue." (Clicking "Continue" will not allow you to advance to the study unless you have checked the box indicating your consent.)

If you do not wish to consent to this study, please close your browser window at this time.

APPENDIX B – INSTRUCTIONS, SCREENER, AND DEMOGRAPHIC

QUESTIONNAIRE

Screening Questions

For this study, we are collecting responses from a wide variety of MTurk workers to obtain a representative sample. This requires us to limit the number of workers in certain groups (e.g., age, gender, occupation), closing the study once we have met our target numbers of workers in various categories. Please answer the following questions about yourself so we can determine your eligibility to participate in this study.

If you are not eligible, you will be redirected to the MTurk website to participate in other studies.

1. What is your age? (in years): _____

2. Do you currently live in the United States?
   a. Yes
   b. No

3. What sex were you assigned at birth, on your original birth certificate?
   a. Female
   b. Male
   c. Other

Study Instructions

Thank you for agreeing to participate in this study. The success of this research depends on the quality of the data you provide. Please be aware that quality assurance checks are used in this study to make sure that workers are reading each question carefully and providing meaningful responses. Workers who do not pass these checks will NOT receive compensation for completing the study.

To make sure you receive compensation for this survey, please read each question before answering it.

Demographic Questionnaire

1. What is your current gender identity?
   a. Male
   b. Female
   c. Transgender

d. I prefer to self-identify as: _____

2. Are you of Hispanic, Latino, or Spanish origin?
    a. No, not of Hispanic, Latino, or Spanish origin
    b. Yes, Mexican, Mexican American, Chicano
    c. Yes, Puerto Rican
    d. Yes, Cuban
    e. Yes, another Hispanic, Latino, or Spanish origin
    f. Unknown or prefer not to answer

3. Which category best describes your race?
    a. American Indian/Alaska Native
    b. Asian
    c. Black or African American
    d. Native Hawaiian/Other Pacific Islander
    e. White or European American
    f. Middle Eastern/North African
    g. Some other race (specify _____)
    h. Unknown or prefer not to answer

4. What is the highest level of education you have completed?
    a. Less than a high school degree
    b. A high school degree or equivalent
    c. Some college, but not a college degree
    d. A 2-year or vocational degree
    e. A 4-year college degree
    f. A graduate degree

5. Which of the following best describes your current employment status?
    a. Employed, working 40 or more hours per week
    b. Employed, working 1-39 hours per week
    c. Not employed, looking for work
    d. Not employed, NOT looking for work
    e. Retired
    f. Disabled, not able to work

6. Which of the following best describes your current occupation?
    a. Management Occupations
    b. Business and Financial Operations Occupations
    c. Computer and Mathematical Occupations
    d. Architecture and Engineering Occupations
    e. Life, Physical, and Social Science Occupations
    f. Community and Social Service Occupations
    g. Legal Occupations
    h. Educational Instruction and Library Occupations

i.   Arts, Design, Entertainment, Sports, and Media Occupations
j.   Healthcare Practitioners and Technical Occupations
k.   Healthcare Support Occupations
l.   Protective Service Occupations
m.   Food Preparation and Serving Related Occupations
n.   Building and Grounds Cleaning and Maintenance Occupations
o.   Personal Care and Service Occupations
p.   Sales and Related Occupations
q.   Office and Administrative Support Occupations
r.   Farming, Fishing, and Forestry Occupations
s.   Construction and Extraction Occupations
t.   Installation, Maintenance, and Repair Occupations
u.   Production Occupations
v.   Transportation and Material Moving Occupations
w.   Military Specific Occupations
x.   Caregiver
y.   Other: _____

7. Please describe your job title (if applicable): _____

8. Are you currently working from home?
    a.   Yes
    b.   No

9. What was your total household income before taxes during the past 12 months?
    a.   Less than $25,000
    b. $25,000 to $34,999
    c. $35,000 to $49,999
    d. $50,000 to $74,999
    e. $75,000 to $99,999
    f. $100,000 to $149,999
    g. $150,000 or more

10. Are you currently enrolled in college?
    a.   Yes
    b.   No

11. What region of the U.S. are you currently residing in?
    a.   Northeast – New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)
    b.   Northeast – Mid Atlantic (New York, Pennsylvania, New Jersey)
    c.   Southwest (Oklahoma, Texas, Arkansas, Louisiana)
    d.   Southeast (Kentucky, Tennessee, Mississippi, Alabama)

e. South Atlantic (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida)
f. Midwest – East North Central (Wisconsin, Michigan, Illinois, Indiana, Ohio)
g. Midwest – West North Central (Missouri, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa)
h. West – Mountain (Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico)
i. West – Pacific (Alaska, Washington, Oregon, California, Hawaii)

12. What is your current marital status?
    a. Single
    b. Married
    c. Cohabitating (living with significant other, but not married)
    d. Divorced
    e. Separated
    f. Widowed

13. Do you have children?
    a. Yes
    b. No

14. Please rate your use of each of the following social media platforms (0 = I do not use this platform, 1 = Don't know, 2 = Less often, 3 = Every few weeks, 4 = 1-2 days a week, 5 = 3-5 days a week, 6 = About once a day, 7 = Several times a day):
    a. Facebook
    b. Twitter
    c. YouTube
    d. Reddit
    e. Snapchat
    f. TikTok
    g. LinkedIn
    h. Pinterest
    i. Tumblr
    j. Instagram

15. Estimate the total time you spend on social media during an average day for personal use (i.e., please do not count any time spent on social media for work): _____

16. Have you ever received mental health treatment for any of the following?
    a. Anxiety/Obsessive-Compulsive Disorder (OCD)
    b. Depression/Bipolar disorder
    c. Trauma
    d. Relationship difficulties

e. Attention-Deficit/Hyperactivity Disorder (ADHD)
f. Autism
g. Personality disorders
h. Other: _____

APPENDIX C – IRB APPROVAL AND MODIFICATION

Office _of_ Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI.

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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: 21-117
PROJECT TITLE: Female Social Norms and Behaviors
SCHOOL/PROGRAM School of Psychology
RESEARCHERS: PI: Alison Poor
                     Investigators: Poor, Alison~Dahlen, Eric R~
IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited Category
PERIOD OF APPROVAL: 17-Nov-2021 to 16-Nov-2022

Donald Sacco Jr.

Donald Sacco, Ph.D.
Institutional Review Board Chairperson")

Office *of*
Research Integrity

THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI.

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Modification Institutional Review Board Approval

The University of Southern Mississippi's Office of Research Integrity has received the notice of your modification for your submission *Female Social Norms and Behaviors* (IRB #:21-117).

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

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Donald Sacco Jr.

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

Table A1. *Demographic characteristics*

Demographic	N	%
Ethnic Identity		
No, not of Hispanic, Latino, or Spanish origin	307	89.5
Yes, Mexican, Mexican American, Chicano	17	5
Yes, Puerto Rico	1	0.3
Yes, Cuban	1	0.3
Yes, another Hispanic, Latino, or Spanish origin	14	4.1
Unknown or prefer not to answer	3	0.9
Region of U.S.		
Northeast- New England	18	5.2
Northeast- Mid Atlantic	32	9.3
Southwest	61	17.8
Southeast	35	10.2
South Atlantic	64	18.7
Midwest- East North Central	57	16.6
Midwest- West North Central	16	4.7
West- Mountain	11	3.2
West- Pacific	49	14.3
Education Level		
Less than a high school degree	0	0
High school degree or equivalent	19	5.5
Some college	28	8.2
2-year or vocational degree	22	6.4
4-year college degree	225	65.6
Graduate degree	49	14.3
Employment status		
Employed, working >40 hours	259	75.5
Employed, working 1-30 hours	61	17.8
Not employed, looking for work	8	2.3
Not employed, not looking for work	11	3.2
Retired	2	0.6
Disabled, not able to work	2	0.6
Household income		
<$25,000	27	7.9
$25,000-$34,999	45	13.1
$35,000-$49,999	69	20.1

Table A1 *Demographic characteristics* (continued).

$50,000-$74,999	96	28
$75,000-$99,999	65	19
$100,000-$149,999	33	9.6
>$150,000	8	2.3
Marital Status		
Single	60	17.5
Married	243	70.8
Cohabitating	25	7.3
Divorced	10	2.9
Separated	3	0.9
Widowed	2	0.6
Parent		
Yes	234	68.2
No	109	31.8
Mental Health Treatment (able to select more than one)		
Anxiety/OCD	69	20.1
Depression/Bipolar Disorder	98	28.6
Trauma	26	7.6
Relationship Difficulties	35	10.2
ADHD	18	5.2
Autism	10	2.9
Personality Disorders	14	4.1
Other	4	1.2
None	194	56.6
Occupation		
Management	46	13.4
Business and Financial Operations	38	11.1
Computer and Mathematics	44	12.8
Architecture and Engineering	9	2.6
Life, Physical, and Social Science	8	2.3
Community and Social Service	6	1.7
Legal	2	0.6
Educational Instruction and Library	25	7.3
Arts, Design, Entertainment, Sports, and Media	13	3.8
Healthcare Practitioners and Technical	22	6.4
Protective Service	1	0.3
Food Preparation and Serving Related	6	1.7

Table A1 *Demographic characteristics* (continued).

Building, Grounds Cleaning, Maintenance	1	0.3
Personal Care and Service	3	0.9
Sales and Related	33	9.6
Office and Administrative Support	29	8.5
Farming, Fishing, and Forestry	2	0.6
Construction and Extraction	2	0.6
Installation, Maintenance, and Repair	2	0.6
Production	2	0.6
Transportation and Material Moving	4	1.2
Military Specific	0	0
Caregiver	7	2
Healthcare Support	15	5
Other	21	6.1

Table A2. *Relational Aggression Settings*

Please describe the setting(s) in which the behavior(s) occurred:
"A good friend of mine disinvited me to stay at her house when I was in her state, and it was so upsetting I intentionally didn't speak with her for many days."
"A work colleague who was also a friend has had ideological differences with me at times and has used professional and personal contacts to vent about me. Never serious and typically short lived."
"During a grocery purchase some of my friends ridiculed me and talked behind me because I had [worn] mask for safety purposes."
"I feel that my close friend has shared personal information about my mental health with someone she knows, based on a comment that person made to me. I was staying with my close friend and her husband overnight at this person's place when she made the comment."
"I have a friend who will go silent for long periods if I do not respond to text messages in a timely manner."
"If somebody is out there trying to talk smack about me behind my back, I will make sure to have the last laugh by harming their reputation. This last happened at a party where somebody was spreading false rumors of my relationship."
"Most of these behaviors occurred when I was still in school. Although I have experienced a few as an adult, both in the workplace and in social groups."
"Mostly work situations where people tend to be more catty. We are all friends and coworkers but attitudes sometimes get in the way."
"The settings for these behaviors are between friends at social settings: PTO meetings, volunteer groups, at home and outside get-togethers."

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