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### Emotional Skillfulness as a Key Mediator of Aggression

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## AGGRESSION AND VIOLENCE RESEARCH

# Emotional Skillfulness as a Key Mediator of Aggression

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*Psychological research has documented several predictors of aggression, including adherence to hegemonic masculinity, trauma symptoms, and insecure attachment. However, at present, little is known about why these variables predict aggression. This study used acceptance theory to introduce the concept of emotional skillfulness as a counterpoint to emotion dysregulation. In an effort to better understand the pathways through which these variables predict aggression, this study used a clinical sample to test three mediational models which hold that emotional skillfulness functions as a common link between the aforementioned predictors and aggression in both men and women. Results indicated that emotional skillfulness is a mediator of aggression for both men and women, but that the predictors of aggression differed by gender.*

**KEYWORDS** *aggression, trauma, emotional skills, emotion dysregulation, masculinity*

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Interpersonal aggression is a menacing public health problem. According to the World Health Organization (Krug, Dhalberg, Mercy, Zwi, & Lozano, 2002), 1.6 million people die from violence around the world every year, and millions more are injured and suffer from physical, sexual, reproductive, and mental health problems as a result. Interpersonal violence is among the leading causes of death for people age 15 to 44 (Krug et al.). Given the prevalence of interpersonal violence, this study is concerned with using acceptance theory to better understand three predictors of interpersonal aggression: adherence to hegemonic masculine norms, trauma symptoms, and insecure attachment. Specifically, this study tests the idea that emotional skillfulness, as understood through the lens of acceptance theory, is a common path through which these variables affect aggression.

### WHAT IS ACCEPTANCE THEORY?

A recent trend in clinical research and theory has concerned itself with the role of acceptance in managing emotions (Hayes, Strosahl, & Wilson, 1999; Linehan, 1993a); these lines of research will be referred to here as acceptance theory. Acceptance theory is concerned with helping people learn to identify, experience, and integrate challenging emotions into one's life. It emphasizes learning to recognize an emotion or experience as it is unfolding, and allowing the experience or emotion to unfold rather than fighting it or trying to get rid of it (Hayes et al., 1999; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Acceptance theory is concerned with factors that build skills that help to remediate the effects of emotion dysregulation, and has made its way into several approaches to therapy, including Dialectical Behavior Therapy (DBT; Linehan, 1993a, 1993b), Skills Training in Affect and Interpersonal Regulation (Cloitre, Koenen, Cohen, & Han, 2002), Integrative Behavioral Couples Therapy (Jacobson & Christensen, 1998), and Acceptance and Commitment Therapy (Hayes et al., 1999). All of these treatments emphasize the importance of being able to accept one's emotions and experiences.

Since the 1990s, there has been growing interest in using acceptance theory to understand the connection between emotion dysregulation and psychopathology (e.g., Gratz & Roemer, 2004; Hayes et al., 1999; Linehan, 1993a). Emotion dysregulation occurs when emotional experiences become overwhelming, cause excessive stress, and result in various problem behaviors. Marsha Linehan (1993a), one of the pioneering researchers on emotion dysregulation, argued that emotion dysregulation drives many problematic impulsive behaviors, including self-injury. Several subsequent lines of research and theory support the idea that emotion dysregulation plays a central role in many disorders and problematic behaviors, including interpersonal aggression and violence (Gross & Munoz, 1995; Hayes et al., 1999; Jakupcak,

2005; Jakupcak, Lisak, & Roemer, 2002; Mennin, Heimberg, Turk, & Fresco, 2005).

The opposite of acceptance is experiential avoidance, which refers to the tendency to avoid emotions or experiences by denying them, constricting them, pushing them away, or attempting to distract from them (Hayes et al., 1999). We conceptualize experiential avoidance as one component of emotion dysregulation. Research has suggested that people who use experiential avoidance to cope with difficult experiences or emotions tend to manifest more psychopathology (Stewart, Zvolensky, & Eifert, 2002). Specifically, experiential avoidance has been linked to substance abuse (Gratz, Bornovalova, Delany-Brumsey, Nick, & Lejuez, 2007), posttraumatic stress disorder (PTSD; Boesch, Koss, Figueredo, & Coan, 2001; Tull, Gratz, Salters, & Roemer, 2004; Tull & Roemer, 2003), generalized anxiety disorder (Buhr, 2008), aggression (Tull, Jakupcak, Paulson, & Gratz, 2007), and borderline personality disorder (Gratz, Tull, & Gunderson, 2008).

### What is Emotional Skillfulness?

In response to Linehan's (1993a, 1993b) work on emotion dysregulation, researchers are increasingly becoming concerned with the importance of emotion regulation as the opposite of emotion dysregulation (e.g., Gratz & Roemer, 2004). Although this juxtaposition is conceptually useful, it is also problematic because there is little agreement in the field about what the term emotion regulation refers to. For example, some researchers understand emotion regulation as encompassing many processes, including emotional experiencing, an individual's expression of the emotion, responses to the emotion by the individual and people in his or her environment, and how the individual's responses and those of people in his or her environment interact (Campos, Frankel, & Camras, 2004). Other researchers (Denham, 1998; Saarni, 1979) seem to regard emotion regulation as a dampening of negative affect and a corresponding amplification of positive affect, while still others regard emotion regulation as any attempt to manage a dysregulated state, whether adaptive or maladaptive (Jakupcak, Tull, & Roemer, 2005; Tull et al., 2004; Tull, Jakupcak, McFadden, & Roemer, 2007). In light of these inconsistencies as to what emotion regulation refers to, we believe that there is a need for a clearly defined, acceptance-based, conceptual counterpoint to emotion dysregulation. To this end, we suggest the use of the construct of emotional skillfulness, which according to Cordova, Gee, and Warren (2005) is the ability to recognize and respond to emotions in ways that enhance one's life and one's relationships. This conceptualization of emotional skillfulness has at its core an emphasis on acceptance. It concerns not only a person's ability to recognize and talk about emotions in oneself and others, but also the capacity to respond to emotions in ways that are helpful to oneself and to one's

relationships. Put simply, emotional skillfulness is the opposite of emotion dysregulation, and experiential avoidance is the opposite of acceptance.

### How is Emotional Skillfulness Different from Emotional Intelligence?

Emotional intelligence, as defined by researchers of the construct, is an aptitude (Mayer, Caruso, & Salovey, 2000). According to Mayer et al.'s definition, emotional intelligence consists of individual differences in the accuracy of emotional perception and understanding. It is comprised of the ability to accurately identify emotions in other people, in artwork, and in language; to name emotions; to capitalize on certain emotions to execute various sorts of tasks (e.g., choosing to do repetitive, detail-oriented work when feeling sad or down); and to "stay open to emotions" (Mayer et al., 2000). These researchers have created a scale of emotional intelligence that is quite similar to an IQ test. Emotional intelligence is thought to be a heritable attribute that is stable over time, much like intelligence. Emotional skillfulness, by contrast, is a construct born out of acceptance theory. It may be partly heritable, but its environmental pliability distinguishes it from emotional intelligence. Unlike emotional intelligence, emotional skillfulness is thought to develop as a result of interactions between a person and his or her environment (Cordova et al., 2005). Thus, from a theoretical perspective, repertoires of emotional skillfulness can be learned, unlearned, or relearned.

At the time data for this study were collected, there was no published measure of emotional skillfulness. However, the first measure of emotional intelligence, the Trait Meta Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) operationalizes emotional intelligence in a way that is consonant with the conceptualization of emotional skillfulness presented earlier (see the Method section for a detailed description of this measure). This self-report measure asks about the degree to which an individual can recognize and name emotions, and respond to them in ways that are helpful. In the sections that follow, we explain why we hypothesize that emotional skillfulness and each of our predictor variables will be related to aggression.

### How Might Emotional Skillfulness be Related to Aggression?

Since emotional skillfulness is such a new construct, research has not documented a link between it and aggression. Thus we turned to the literature on emotional intelligence and emotion dysregulation and their connections to aggression. Research on the connection between emotional intelligence and aggression is sparse; however, one study found that emotional intelligence and aggression were linked (Moriarty, Stough, Tidmarsh, Eger, & Dennison, 2001). In a related vein, several studies have found that emotion dysregulation predicts aggression (Jakupcak, 2003; Jakupcak, Salters, Gratz, & Roemer, 2003; Jakupcak et al., 2005). In light of these findings, it seems likely

that emotional skillfulness should be inversely related to aggression. In this study, we hypothesized that emotion dysregulation plays a key role in aggression and that therefore emotional skillfulness, which is the opposite of emotion dysregulation, should mediate the relationship between aggression and three predictor variables: trauma symptoms, insecure attachment, and adherence to hegemonic masculine norms.

### How are Trauma Symptoms Related to Aggression?

Recent research on trauma has found that PTSD is associated with anger and interpersonal aggression. Combat-related PTSD has been found to be strongly associated with anger and aggression (Castillo, Fallon, C'De Baca, Conforti, & Qualls, 2002; Chemtob, Hamada, Roitblat, & Muraoka, 1994; Jakupcak et al., 2007; Jakupcak & Tull, 2005). In a related vein, it appears that PTSD places Vietnam veterans at increased risk for perpetrating domestic violence (Byrne & Riggs, 1996). With regard to abuse-related PTSD, anger predicts diagnosis of PTSD among victims of violent crime (Riggs, Dancu, Gershuny, & Greenberg, 1992), and among those who have been exposed to a potentially traumatic event (Jakupcak & Tull). Anger also predicts PTSD among women who have been assaulted (Feeny, Zoellner, & Foa, 2000). Furthermore, people with PTSD who struggle with anger and aggression tend to experience a more intense and complicated form of PTSD than those who do not (Franklin, Posternak, & Zimmerman, 2002).

Trauma symptoms and their connection to aggression is an important area of study because many perpetrators of violence and abuse are themselves survivors of abuse (Seghorn, Prentky, & Boucher, 1987) and because trauma symptoms that result from violence are common (Kessler, Sonnega, Bromet, & Hughes, 1995). Both male and female perpetrators of spousal abuse report high rates of PTSD symptoms and of having witnessed violence between their parents, and among men and women receiving anger management treatment there is a high correlation between PTSD symptoms and perpetrating physical aggression (Dowd, Leisring, & Rosenbaum, 2005; Leisring, Dowd, & Rosenbaum, 2003; Rosenbaum, Gearan, & Ondovic, 2002). The link between abuse, aggression, and trauma symptoms is especially salient considering that more than one-third of people who are abused as children go on to become perpetrators of abuse in their own relationships as partners or parents (Egeland, 1993).

It is anticipated that this study will replicate previous findings that high levels of trauma symptoms are associated with high levels of aggression in both men and women. Furthermore, it is expected that emotional skillfulness will mediate the relationship between trauma symptoms and aggression in both men and women. This is expected because trauma symptoms may make people more susceptible to difficult emotions, hindering their ability to respond to such emotions.

## How is Insecure Attachment Style Related to Aggression?

John Bowlby introduced the concept of psychological attachment with his publications of *Attachment and Loss* (Bowlby, 1969, 1973, 1980). Originally, three main attachment styles were identified: secure, avoidant, and anxious-ambivalent (Ainsworth, Blehar, Waters, & Wall, 1978). According to Ainsworth et al, secure attachment results from sensitive, contingent interactions between children and caregivers. Avoidant attachment results from interactions in which a child's bids for attachment are either ignored or punished the majority of the time. Anxious ambivalent attachment results from inconsistently nurturing, ignoring, or punishing responses to bids for attachment. Disorganized attachment was not one of the originally recognized styles, but is now widely accepted. It is thought to result from fearful or abusive interactions between children and caregivers (Main, Solomon, Brazelton, & Yogman, 1986).

Measures of adult attachment come in two forms: interviews and self-report measures. Interviews (e.g., Main, Kaplan, & Cassidy, 1985) measure adults' likely attachment styles in relationships with their children, whereas adult self-report measures of attachment style measure attachment style in romantic relationships.

A recent and growing body of empirical research suggests that attachment style and aggression are related. Insecure attachment has been linked to relationship aggression (Bookwala, 2002; Kesner & McKenry, 1998; Wheeler, 2002), and anger and hostility (Meesters & Muris, 2002). One study found that dismissing or avoidant attachment was linked to psychological aggression, while anxious or preoccupied attachment was related to physical assault (Wheeler). Similarly, research has found that various forms of insecure attachment are related to perpetration of sexual coercion and physical aggression in adults (Shore, 2002). More research is needed to parse out which types of insecure attachment are related to aggression, but a common theme is beginning to emerge from these lines of research: Insecure attachment is related to aggression and violence.

Several lines of research and theory suggest that through the primary attachment relationship, children learn whether emotions are valued and accepted, and whether they can trust important people in their lives to share pleasure and to shepherd them through distress (Cozolino, 2006; Goldberg, 2000; Siegal, 1999). In a similar vein, research has suggested that attachment experiences affect emotional experiencing and vulnerability to emotion dysregulation (Cozolino; Critchfield, Levy, Clarkin, & Kernberg, 2008; Siegal). Thus it seems likely that insecure attachment relationships of all types teach children that their emotions are not valued and therefore militate against learning emotional skills that help people to recognize and respond to emotions in nondestructive ways. We therefore hypothesize that insecure attachment impedes development of emotional skillfulness, which in turn makes aggression more likely.

## What is Hegemonic Masculinity?

Research on masculinity from a social learning perspective began in the 1970s when several scholars sympathetic with the second wave of feminism began to theorize and investigate ways in which men's restrictive gender roles adversely affected both men and women. Social learning perspectives on masculinity have emphasized the ways in which the traditional, or hegemonic, masculine gender role has called on men to downplay vulnerability, while exaggerating their emotional independence, stoicism, physical strength, and competitiveness (Brannon & Juni, 1984; Pleck, 1981). Several measures of traditional masculinity have been developed. All share a grounding assumption that adherence to the traditional masculine role has detrimental effects for men, women, and society at large.

For the purposes of this study, hegemonic masculinity refers to a culturally dominant set of ideas and practices about what it means to be a man and how men should behave. In the United States, hegemonic masculinity is based on the values of the dominant culture, that is, White, male, Protestant, and middle class. This cultural group wields the majority of social, economic, and political power in U.S. culture, and by extension, controls the majority of resources in these areas. All members of U.S. culture, and by extension both men and women, are immersed in and, at some level, subject to the norms and values of the dominant group. The term hegemonic masculinity reflects this unavoidable immersion in the values and norms of the dominant group.

Much research on the psychology of men and masculinity has attempted to measure aspects of hegemonic masculinity. For the purpose of this study, adherence to hegemonic masculinity is conceptualized as a set of norms, or societal "shoulds," that stress the importance of avoiding vulnerability and enhancing social power and status. The measure chosen for this study, the Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003), measures adherence to a much wider array of masculine norms than do other measures that came before it.

## How is Hegemonic Masculinity Related to Interpersonal Aggression?

A growing body of empirical data using various constructs of hegemonic masculinity suggests that hegemonic masculinity is related to relationship aggression and violence (Jakupcak et al., 2002; Moore & Stuart, 2004a, 2004b; Parrott & Zeichner, 2003; Thompson, 1991). Similarly, research has implicated adherence to hegemonic masculine norms in delinquent activity and in engaging in coercive sex (Pleck, Sonenstein, Ku, Oskamp, & Costanzo, 1993). There is also evidence that the context in which boys commit crimes is characterized by adherence to hegemonic masculine values (Lopez & Emmer, 2002). Interestingly, some research has found that women who



score high on measures of hegemonic masculinity are more likely to be aggressive (Kogut, Langley, & O'Neal, 1992; Thompson).

Although many studies have linked hegemonic masculinity to aggression, fewer have attempted to explain the link. One program of research found that fear of emotions mediates the relationship between adherence to hegemonic masculinity and aggression (Jakupcak, 2003; Jakupcak et al., 2005). In line with these findings, we expect that high levels of adherence to hegemonic masculine norms will be related to high levels of aggression, and that emotional skillfulness will mediate this relationship.

### Summary of Hypotheses

This study tested three mediational models. In each model, emotional skillfulness was the proposed mediator. First, we hypothesized that experiencing trauma symptoms may inhibit development or use of emotional skills that could render aggression unnecessary. Thus emotional skillfulness should mediate the relationship between trauma symptoms and aggression. Second, we hypothesized that primary attachment relationships are a key venue in which emotional skillfulness is learned, and that insecure attachment relationships impede development of emotional skills that help people to recognize and respond to emotions in nondestructive ways. Thus emotional skillfulness should mediate the relationship between insecure attachment and aggression. Finally, we hypothesized that adherence to hegemonic masculine norms may militate against using or developing emotional skills that could render aggression unnecessary. Thus emotional skillfulness should mediate the relationship between adherence to hegemonic masculine norms and aggression.

## METHOD

### Participants

The sample consisted of 92 adults (49 men and 43 women) who were receiving group treatment for emotion regulation or anger management at an ambulatory psychiatry clinic affiliated with a medical school in New England. The majority of the participants (86%) were recruited from the anger management program affiliated with the clinic. The anger management program runs men's and women's groups for individuals referred either by themselves, a doctor, a therapist, or the courts, to seek help handling their anger. Participants were also recruited from an intensive outpatient self-regulation skills group and from DBT skills groups. The self-regulation skills group and the DBT groups consist of patients who are receiving help learning to tolerate affect. This sample was chosen to better understand predictors of aggression in people who struggle with aggression and emotion regulation.

Of the sample, 64% of participants identified as White, 14% identified as Latino/a, 13% identified as Black, 5% identified as biracial or multiracial, and 3% identified as "other." Fifty-two percent of participants reported that they had no education beyond high school, 34% reported that they had "some college" education, and 13% reported a 4-year college degree or a graduate degree. Thirty-three percent of participants reported a household income of less than \$10,000, 20% reported a household income between \$10,000 and \$24,999, 23% reported a household income between \$25,000 and \$49,999, 7% reported a household income between \$50,000 and \$74,999, and 10% reported a household income greater than \$75,000.

## Procedure

The principal investigator visited the psychotherapy groups described above and explained the purpose of the study, answered questions from prospective participants, and provided informed consent and questionnaire packets for those interested in participating. The questionnaires were arranged in various orders in the packets. Participants completed questionnaires in the group therapy room after the group session ended and were paid \$20 for completing the questionnaire packets.

## Measures

Data were collected from five content areas: psychopathology (trauma symptoms and alcohol abuse), adherence to masculine norms, emotional skillfulness, aggression, and attachment. In order to reduce the number of dimensions for analysis, while remaining sensitive to both type I and type II error, we ran correlations between all scales and subscales and considered whether total scores were as sensitive as subscale scores in detecting relationships between constructs. Results indicated that total scores are as sensitive as subscale scores, and total scores were therefore used throughout the analyses.

## Psychopathology

### TRAUMA SYMPTOM INVENTORY

The Trauma Symptom Inventory (TSI; Briere, 1995) is a 100-item self-report scale of posttraumatic stress symptoms. The measure possesses 10 clinical scales that assess the severity of traumatic symptoms. The scales include Anxious Arousal, Dissociative Behavior, Depression, Sexual Concerns, Anger/Irritability, Dysfunctional Sexual Behavior, Intrusive Experiences, Impaired Self-Reference, Defensive Avoidance, and Tension Reduction. Each item is rated for its frequency of occurrence over the past 6 months, using a 4-point

rating scale ranging from 0 (*never*) to 3 (*often*). The TSI provides cutoff scores that enable researchers and clinicians to measure trauma symptoms severity. Thus those who complete the TSI are scored either within a normal range or within a clinically significant range. For the purposes of this study, a total score that represented the total number of clinical scales on which participants scored above the cutoff was created. Calculating scores in this way allowed for the scores on the TSI to be ordinal, rather than nominal, and therefore increased the power of our analyses. Unlike other measures of trauma symptoms that refer to the last week or the last month, the TSI asks about symptoms over the past 6 months. The TSI has good internal consistency, with clinical score alphas ranging from .74 to .97 (Briere). It has demonstrated convergent, predictive, and incremental validity with other measures of PTSD and with structured diagnostic interviews (Briere, 2004). The TSI was included in analyses because the presence of PTSD symptoms is central to one of the hypotheses of this study.

#### MICHIGAN ALCOHOLISM SCREENING TEST

The Michigan Alcoholism Screening Test (MAST; Selzer, 1971) is a 25-item screening tool for alcohol abuse and problem drinking. Items are phrased as questions to which participants answer either yes or no. Items include “Do friends or relatives think you are a normal drinker?” and “Do you drink before noon fairly often?” It is widely used and is both reliable and valid, with alphas ranging from .70 to .90 (Hedlund & Vieweg, 1984; Selzer). It was included as a control measure because research has documented a link between alcohol abuse and aggression (Hoaken & Stewart, 2003).

#### Masculine Norms

##### THE CONFORMITY TO MASCULINE NORMS INVENTORY

The Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003) is quickly becoming the measure of choice for adherence to hegemonic masculine norms. The CMNI was chosen for this study because it is the most thorough and far-reaching masculine norms scale in existence. In addition, it was used because it encompasses many more areas in which men and women may adhere to masculine norms than do other measures of masculine norms.

The CMNI consists of 94 items and measures the degree of endorsement of 11 hegemonic masculine norms, including Winning, Emotional Control, Risk-Taking, Violence, Power Over Women, Dominance, Playboy, Self-Reliance, Primacy of Work, Disdain for Homosexuals, and Pursuit of Status. “Winning” refers to the idea that it is important and desirable to win in situations in which competition exists. “Emotional control” refers to the idea that one should keep one’s emotions under control, even when one is experiencing

intense emotions. “Risk-taking” refers to the idea that it is beneficial to take risks in many domains. “Violence” is associated with the notion that violence is sometimes necessary and acceptable, while “power over women” reflects the idea that men should be dominant in relationships with women. “Dominance” denotes the idea that one should be in control of situations and of people, and that one should seek dominance when possible. The “playboy” norm dictates that one should have as many sexual partners as possible, while “self-reliance” demands that one be self-sufficient and not need or ask for help from others. “Primacy of work” refers to pressure to prioritize work over other demands. “Disdain for homosexuals” involves a desire to demonstrate one’s heterosexuality while denigrating other sexual orientations. Finally, “pursuit of status” refers to the idea that one should get ahead in a material sense. The measure is internally consistent, with an alpha of .94, and subscale coefficients ranging from .72 to .91 (Mahalik et al., 2003).

The CMNI has demonstrated convergent validity with other measures of masculine gender socialization and gender role conflict (Mahalik et al., 2003). The scale yields a total score and 11 subscale scores. Since subscale scores correlated well with the total score, total scores were used for this study. Higher scores indicate higher levels of adherence to hegemonic masculine norms. In addition, high scores on the CMNI are associated with aggressive behavior (Mahalik et al.). Psychometric data on the CMNI suggest that scores on the CMNI are consistent across age groups (Smiler, 2006).

## Emotional Skillfulness

### THE TRAIT META-MOOD SCALE

The Trait Meta-Mood Scale (TMMS; Salovey et al., 1995) is a 30-item self-report scale that measures the ability to reflect upon and respond to one’s emotions. At the time data were collected, there was no published measure of emotional skillfulness as we conceptualize it. However, the TMMS is consonant with our definition of emotional skillfulness. Participants rate the degree to which they agree with each statement on the measure. The scale is comprised of three subscales. The Attention to Feelings scale measures the degree to which one values and attends to emotions and the information emotions provide (e.g., “Feelings give direction to life”). The Clarity of Feelings scale taps the ability to recognize and name emotions (e.g., “I am often aware of my feelings on a matter”). The Mood Repair scale measures the ability to handle emotions in ways that promote happiness and well-being (e.g., “When I become upset I remind myself of all the pleasures in life”). The scale has demonstrated good internal consistency, with alphas ranging from .82 to .86 (Salovey et al.). In addition, the measure has demonstrated convergent validity with meta-mood measures (Salovey et al.). Higher

scores indicate higher levels of valuing feelings, emotional clarity, and mood repair. Higher scores also indicate higher levels of emotional skillfulness. TMMS scores have been inversely related to alexithymia (Coffey, Berenbaum, & Kerns, 2003), psychopathy (Malterer, Glass, & Newman, 2008), and to depression vulnerability, depression, and anxiety (Fernandez-Berrocal, Alcaide, Extremera, & Pizarro, 2006; Rude & McCarthy, 2003). Similarly, TMMS scores have been related to active coping and lower levels of rumination (Salovey, Stroud, Woolery, & Epel, 2002).

## Anger and Aggression

### THE AGGRESSION QUESTIONNAIRE

The Aggression Questionnaire (AG; Buss & Perry, 1992) is a 29-item measure of aggression based on the Hostility Inventory (Buss & Durkee, 1957). It is comprised of four subscales: Physical Aggression, Verbal Aggression, Anger, and Hostility. The scale demonstrated good test-retest reliability, with correlations ranging from .72 to .80 for the subscales and a correlation coefficient of .80 for the total score (Buss & Perry). The scale has demonstrated concurrent validity with measures of personality (Buss & Perry). Examples of items from the scale include “Once in a while I can’t control the urge to strike another person,” and “When people annoy me, I may tell them what I think of them.” This scale was included because it probes how people act on their anger. In addition, it has been widely used in studies of aggression.

## Attachment

### THE EXPERIENCES IN CLOSE RELATIONSHIPS SCALE

The Experiences in Close Relationships Scale (ECRQ; Brennan, Clark, & Shaver, 1998) is a 32-item scale that measures attachment style in adult romantic relationships and is comprised of two subscales: one that measures avoidant tendencies in relationships and one that measures anxious tendencies in relationships. An example of an item from the avoidant subscale is, “Just when my partner starts to get close to me I find myself pulling away,” while an example of an item from the anxious subscale is, “I need a lot of reassurance that I am loved by my partner.” The authors noted that although the scale is a self-report measure, like interview assessments of adult attachment style, it does not require people to “understand or probe into their own dynamics and defenses” (Brennan et al.). The ECRQ has demonstrated good internal consistency, with subscale alphas of .94 and .91, and convergent validity with other measures of self-report adult attachment style (Brennan et al.). Data on the relationship between ECRQ scores and interview measures of adult attachment are not available because self-report measures of adult attachment are intended to measure adult attachment

style in adult romantic relationships, while interview measures are intended to derive childhood attachment style and predict the attachment style of respondents' children. Thus correlations between the two types of measures are not meaningful. The two subscale scores of the ECRQ can be used with coefficients to produce attachment style labels. Brennan et al. argued persuasively for a dimensional rather than a categorical understanding of attachment, and their avoidant and anxious subscales measure the two key dimensions of attachment. This study therefore used the subscale scores to assess how proclivities toward anxious and avoidant attachment are related to other constructs of interest in this study.

## RESULTS

Descriptive statistics and one-way analysis of variance (ANOVA) testing for gender differences on each variable are listed in Table 1. Table 1 also lists internal consistency statistics for all measures used. None of the distributions were skewed, and none had a restricted range. There were gender differences in scores on three measures: aggression, adherence to hegemonic masculine norms, and trauma symptoms. Table 2 lists correlations between all variables. It was expected that relationships between variables would be similar for both men and women. The correlations in Table 2 suggest that the hypothesis of similar effects for men and women does not hold in correlations between aggression and avoidant attachment. In light of this, all analyses were run separately for men and women. In addition, in men, the correlation between avoidant attachment and adherence to hegemonic masculine norms was quite high ( $r = .69, p < .05$ ), a point that will be addressed in the Discussion section. Alcohol abuse was left out of the regression analyses because it was not correlated with aggression in men and was not correlated with emotional skillfulness in women. Similarly, anxious attachment was left out of the regression analyses because it was not correlated with aggression in men or women.

### Results for Men

Three mediational models were tested for men. Each model used Baron and Kenny's (1986) criteria as an initial test for mediation. This was followed by the asymmetric distribution of the product test, which uses coefficients from the two paths of the mediational model to generate confidence limits (CLs; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). This method was chosen because the criteria set forth in Baron and Kenny are suggestive of an indirect effect, but do not provide the full set of necessary conditions to infer an indirect effect (MacKinnon et al., 2002). In order to test whether the

**TABLE 1** Descriptive Statistics and Internal Consistency Statistics for all Variables: Full Sample, Men Only, and Women Only, with One-Way ANOVAs for Sex Differences

Scale name	Number of items	$\alpha$ , full sample	Sample			$\alpha$ , men only			$\alpha$ , women only			<i>F</i>	<i>df</i>
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>		
TAQ	29	.94	81.58	23.67	88.88	24.73	.94	73.26	19.55	.92	11.31**	91	
TMMS	30	.90	3.29	.63	3.22	.65	.89	3.37	.61	.90	1.32	91	
CMNI	94	.93	134.30	30.45	145.69	31.25	.96	121.33	23.84	.89	14.03**	90	
TSI	10	.92	3.34	3.61	4.06	3.95	.94	2.51	3.00	.88	4.40*	91	
ECRQ Avoidance	18	.89	58.07	22.60	61.05	24.95	.90	55.23	19.99	.87	1.40	83	
ECRQ Anxiety	18	.91	69.58	24.49	70.98	22.38	.87	68.26	26.54	.94	.26	83	
MAST	25	.85	5.26	5.57	5.71	5.52	.86	4.74	5.64	.84	.69	91	

*Note.* TAQ = The Aggression Questionnaire; TMMS = Trait Meta-Mood Scale; CMNI = Conformity to Masculine Norms Inventory; TSI = Trauma Symptom Inventory; ECRQ = Experiences in Close Relationships Questionnaire; MAST = Michigan Alcohol Screening Test.

\* $p < .05$ , \*\* $p < .01$ .

**TABLE 2** Correlations Between all Variables

	Men only						
	TAQ	TMMS	CMNI	TSI	ECRQ Avoidance	ECRQ Anxiety	MAST
TAQ	1	-.49**	.61**	.53**	.54**	.17	.10
TMMS		1	-.66**	-.35*	.60**	.02	-.12
CMNI			1	.40**	.69**	.10	.05
TSI				1	.34*	.49**	.22
ECRQ Avoidance					1	.26	.19
ECRQ Anxiety						1	.09
MAST							1
Women only							
TAQ	1	-.42**	.60**	.38*	.14	.26	.34*
TMMS		1	-.41**	-.45**	-.54**	-.27	-.17
CMNI			1	.25	.43**	.29	.43**
TSI				1	.28	.54**	.08
ECRQ Avoidance					1	.27	.11
ECRQ Anxiety						1	.10
MAST							1
Full sample							
TAQ	1	-.46**	.60**	.46**	.40**	.22*	.22*
TMMS		1	-.54**	-.40**	-.58**	-.15	-.15
CMNI			1	.33**	.50**	.13	.19
TSI				1	.34**	.49**	.17
ECRQ Avoidance					1	.27*	.16
ECRQ Anxiety						1	.10
MAST							1

Note. *N* men only = 49; *N* women only = 43; *N* full sample = 92; TAQ = The Aggression Questionnaire; TMMS = Trait Meta-Mood Scale; CMNI = Conformity to Masculine Norms Inventory; TSI = Trauma Symptom Inventory; ECRQ = Experiences in Close Relationships Questionnaire; MAST = Michigan Alcohol Screening Test.

\* $p < .05$ , \*\* $p < .01$ .

indirect, or mediated effect, was significant, asymmetric confidence intervals for the distribution of the indirect effect were calculated (MacKinnon, Fritz, Williams, & Lockwood, 2007; MacKinnon et al., 2002). Asymmetric CLs for the distribution of the indirect effect have been shown to be robust across a variety of different conditions (MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Fritz, et al., 2007; MacKinnon, Lockwood, & Williams, 2004). The software program PRODCLIN was used to generate asymmetric CLs (MacKinnon, Fritz, et al., 2007). If the CLs generated by PRODCLIN exclude zero, the null hypothesis of no indirect effect can be rejected.

We began by checking to see if our data met Baron and Kenny's (1986) criteria. Baron and Kenny suggested that in order to test for mediation, two conditions must first be met. First, the proposed mediator (emotional skillfulness) must be significantly associated with variation in the independent variable or variables (in this case, adherence to hegemonic masculine norms,



avoidant attachment, and trauma symptoms). Second, variation in the mediator variable (emotional skillfulness) must be significantly associated with variation in the dependent variable (aggression). Bivariate correlations between the mediator, dependent, and independent variables demonstrate the first two criteria were met for all three models (see Table 2). Thus we set about testing our three hypothesized models.

The first model tested postulated that emotional skillfulness mediates the relationship between adherence to hegemonic masculine norms and aggression. Aggression was first regressed on hegemonic masculine norms (see Table 3). Then aggression was regressed on both emotional skillfulness and hegemonic masculine norms. Doing so reduced the effect of hegemonic

**TABLE 3** Mediation Analysis: Aggression on Adherence to Hegemonic Masculine Norms

Predictor variables	Dependent variable, TAQ			Cumulative $R^2$
	$B$	$SE B$	$\beta$	
Men only				
Step 1				
CMNI	.47	.09	.61**	.35
Step 2				
CMNI	.38	.12	.49**	.38
TMMS	-6.39	5.90	-.17	
Women only				
Step 1				
CMNI	.61	.13	.60**	.36
Step 2				
CMNI	.54	.14	.53**	.38
TMMS	-5.32	4.52	-.16	
Men only				
Step 1				
ECRQ Avoidance	.54	.14	.54**	.29
Step 2				
ECRQ Avoidance	.32	.16	.42**	.38
TMMS	-15.02	6.40	-.38*	
Men only				
Step 1				
TSI	3.30	.78	.53**	.28
Step 2				
TSI	2.52	.77	.40**	.39
TMMS	-13.54	4.72	-.35*	
Women only				
Step 1				
TSI	2.45	.95	.38*	.14
Step 2				
TSI	1.52	1.02	.23	.22
TMMS	-10.25	4.99	-.32	

Note.  $N$  men only = 49;  $N$  women only = 43; TAQ = The Aggression Questionnaire; TMMS = Trait Meta-Mood Scale; CMNI = Conformity to Masculine Norms Inventory.

\* $p < .05$ , \*\* $p < .01$ .

masculine norms on aggression, as evidenced by a 12-point change in beta (see Table 3). Next, significance was tested by calculating the coefficients for the two paths that comprise the mediational model. The first path in the model, path a, was derived by regressing the mediator on the independent variable ( $B = -.013$ ,  $SE = .004$ ,  $R^2 = .44$ ). The path value is the regression weight for this model. The second path in the model, path b, was derived by regressing the dependent variable on both the independent variable and the mediator. The regression weight for the mediator in this model constitutes path b (see Table 3 for this regression weight). These coefficients and their standard errors were entered into the PRODCLIN program (MacKinnon, Fritz et al., 2007), which generated CLs for the product of a and b. These CLs suggest that the effect was insignificant, and that the null hypothesis should be retained (product of a and b = .08, 95% CL  $-.07$  to  $.24$ ).

The second model we tested postulated that emotional skillfulness mediates the relationship between avoidant attachment and aggression. We began by regressing aggression on attachment (see Table 3). Aggression was then regressed on both emotional skillfulness and avoidant attachment (see Table 3). Doing so caused the effect of avoidant attachment on aggression to be reduced by 12 points. Next the significance was tested by calculating the coefficients for the two paths that comprise the mediational model. Path a (the effect of avoidant attachment on emotional skillfulness) yielded a regression weight of  $-.015$  ( $SE = .003$ ,  $R^2 = .36$ ), and the value for path b (the effect of emotional skillfulness on aggression, controlling for avoidant attachment) is listed in Table 3. The product was  $.23$ , and the CLs exclude zero (95% CL  $-.04$  to  $.45$ ), which suggests that the model was significant.

The third model we tested postulated that emotional skillfulness mediates the relationship between trauma symptoms and aggression. This was done by regressing aggression on trauma symptoms (see Table 3). We then regressed aggression on both emotional skillfulness and trauma symptoms (see Table 3). Doing so caused the effect of trauma symptoms on aggression to be reduced by 13 points. The next step was to test whether this change was significant. To do so, the coefficients for the two paths that comprise the mediational model were calculated. Path a (the effect of trauma symptoms on emotional skillfulness) yielded a regression weight of  $-.057$  ( $SE = .022$ ,  $R^2 = .12$ ), and the value for path b (the effect of emotional skillfulness on aggression, controlling for trauma symptoms) can be found in Table 3. The product was  $.77$ , and the CLs excluded zero (95% CL  $.13$  to  $1.68$ ), which suggests that the model was significant.

## Results for Women

As we did for men, we set out to test three mediational models for women. Analyses began by assessing whether each of the predictor variables was related to variation in the proposed dependent variable, aggression. Of the

predictor variables, only adherence to hegemonic masculine norms and trauma symptoms were significantly related to aggression (see Table 3). Therefore a decision to test two mediational models for women was made. Following Baron and Kenny's (1986) procedure, we next assessed whether variation in the mediator variable (emotional skills) was associated with variation in the independent variables (trauma symptoms and adherence to hegemonic masculine norms). Bivariate correlations suggest that this assumption was met (see Table 3). Having met the criteria needed to test for mediation, each of the models were subjected to the final step in Baron and Kenny's causal model and then tested for significance using asymmetric CLs for the indirect effect (MacKinnon, Fritz et al., 2007).

The first model tested posited that emotional skillfulness mediates the relationship between trauma symptoms and aggression. Aggression was regressed on trauma symptoms and then on both trauma symptoms and emotional skillfulness. The regression weights for trauma symptoms were compared when it was entered into a model with aggression alone and with its effect when it was entered along with emotional skillfulness. These results are presented in Table 3. The beta weight for trauma symptoms dropped from .38 to .23, a 15-point change. When emotional skillfulness was added to the model, the effect of trauma symptoms on aggression became insignificant, indicating full mediation (Baron & Kenny, 1986). In order to conduct analyses consistently, asymmetric CLs for the distribution of the indirect effect were calculated using the same technique described in the section on results in men. Path a of the model (the effect of trauma symptoms on emotional skillfulness) yielded a regression weight of  $-.091$  ( $SE = .028$ ,  $R^2 = .20$ ), and the value for path b (the effect of emotional skillfulness on aggression, controlling for trauma symptoms) can be found in Table 3. The product was .93, and the CLs excluded zero (95% CL .06 to 2.14), which suggests that the mediational model was significant.

The next model we tested posited that emotional skillfulness mediates the relationship between adherence to hegemonic masculine norms and aggression. In order to test this model, aggression was regressed on adherence to hegemonic masculine norms. Next, aggression was regressed on both emotional skillfulness and adherence to hegemonic masculine norms simultaneously. Then the regression weights for adherence to hegemonic masculine norms were compared when it was entered into the model alone versus when it was entered with emotional skillfulness. The results of this comparison are shown in Table 3. When adherence to hegemonic masculine norms was entered into the model with emotional skillfulness, its beta weight dropped 7 points, from .60 to .53. In order to test whether this change was significant, asymmetric confidence intervals for the distribution of the indirect effect were calculated (MacKinnon, Fritz et al., 2007; MacKinnon et al., 2002). Path a (the effect of adherence to hegemonic masculine norms on emotional skillfulness) yielded a regression weight of  $-.013$  ( $SE = .004$ ,  $R^2 = .17$ ), and

the value for path b (the effect of emotional skillfulness on aggression, controlling for adherence to hegemonic masculine norms) can be found in Table 3. The product was .07, and the CLs included zero (95% CL  $-.04$  to  $.21$ ), which suggests that the model was not significant.

## DISCUSSION

### Commentary on Findings About Men

In men, analyses confirmed two mediational models. Contrary to our hypothesis, emotional skillfulness did not mediate the relationships between aggression and adherence to hegemonic masculine norms. It did, however, mediate the relationship between aggression on the one hand, and avoidant attachment and trauma symptoms on the other. The relatively high correlation between avoidant attachment and adherence to hegemonic masculine norms raises some interesting questions about the ontological status of avoidant attachment style in men as it relates to masculine norms. Insufficient research has been conducted to comment definitively on whether this association is unique to our sample, but two studies suggest that at the very least, masculinity is related to attachment. One study found that high levels of gender role conflict and stress were related to insecure attachment (DeFranc & Mahalik, 2002). Another study found that secure attachment was related to lower levels of gender role conflict (Schwartz, Waldo, & Higgins, 2004). More research is needed to explore the robustness of the overlap between avoidant attachment and adherence to masculine norms. In particular, it is important for such research to distinguish between types of insecure attachment and to focus particularly on avoidant attachment. All of that being said, it appears that avoidant attachment affects aggression through emotional skillfulness. This lends support to theories that postulate that early attachment relationships are key venues in which emotional skillfulness is learned.

The finding that emotional skillfulness mediates the relationship between trauma symptoms and aggression is consistent with recent findings that PTSD, experiential avoidance, and aggression are linked (Tull, Jakupcak, McFadden, et al., 2007; Tull, Jakupcak, Paulson, et al., 2007). Finally, it is worth noting that a lack of emotional skillfulness is a strong predictor of aggression, a point to which we will return in the section on implications for clinical research.

### LIMITATIONS

Although these findings lend support to the hypothesized models connecting aggression with avoidant attachment and trauma symptoms, they should be interpreted cautiously until they have been replicated. As discussed previously, the relatively high correlation between adherence to hegemonic

masculine norms and avoidant attachment requires further study. In addition, a larger sample size would have been ideal, and replication is needed in order to enhance the robustness of the findings. The sample in this study was drawn from a socioeconomically disadvantaged clinical population, and future research should focus on whether the findings hold in other populations. Furthermore, all quantitative analyses relied on self-report measures, which can be problematic because people do not always report accurately on their own behavior. Of the existing measures of emotional intelligence, the TMMS most closely converges with our conceptualization of emotional skillfulness. However, a measure of emotional skillfulness, or of emotion dysregulation, is needed. This measure should be more relationally focused than the TMMS, and should focus on emotional acceptance of negative emotions, which the TMMS does not do. Gratz and Roemer's (2004) measure of emotion dysregulation, which targets acceptance, could be used to replicate this study in the future. In addition, Cordova and his research team are currently developing a measure of emotional skillfulness, which could be used in future research.

#### IMPLICATIONS FOR CLINICAL RESEARCH

Future research should attempt to replicate the findings presented here using a newer measure of emotional skillfulness or emotion dysregulation. Pending results from such research, treatment protocols for anger that focus on trauma symptoms and on building emotional skills should be developed and tested. Such treatments can build on Linehan's Skills Training Manual for Treating Borderline Personality Disorder (1993b), which provides examples of how such skills can be introduced and taught. DBT has been shown to be effective in reducing anger in prison inmates (Evershed et al., 2003) and should be tested in nonincarcerated populations struggling with anger. Similarly, the principles underlying Skills Training in Affect and Interpersonal Regulation (Cloitre et al., 2002), a treatment protocol for severe PTSD, could be adapted for use in anger treatment. As Cloitre et al. suggest, skills for handling difficult emotions should be taught prior to addressing PTSD symptoms more directly.

#### Commentary on Findings About Women

In women, analyses confirmed one mediational model. Results indicated that emotional skillfulness mediates the relationship between aggression and trauma symptoms. Avoidant attachment did not significantly predict aggression in women, and the model postulating that emotional skillfulness mediates the relationship between adherence to masculine norms and aggression was not upheld. As for men, it appears that trauma symptoms, through their effect on emotional skills, are a key predictor of aggression.

Predictors of women's aggression merits further study and is likely to be complicated. Although women are subject to the norms of the dominant group (men), they occupy a different place in the social matrix than do men. By extension, women are subject not only to the norms of the dominant group, but to other norms as well. Furthermore, women's subjection to multiple sets of norms has important implications for aggression and for emotional skillfulness: whereas masculine norms condone or even encourage aggression in response to challenging emotions, feminine norms discourage it. Women's subjection to contradictory sets of norms may mean that aggression is both encouraged and punished in women. If this is so, then sorting out the predictors of aggression in women is likely to be more complicated for women than for men.

#### LIMITATIONS

In order to better understand the forces that affect aggression in women, more research and theory is needed. The findings from this study should be replicated in future studies, and future studies should include a measure of feminine norms. The limitations mentioned in the section about men concerning sample size, self-report measures, need for replication with a new measure of emotional skillfulness or emotion dysregulation, and the population from which the sample was drawn apply to the findings about women as well.

#### IMPLICATIONS FOR CLINICAL RESEARCH

The suggestions for clinical research in the section on men also apply to women. As for men, skills training that builds on existing research (Cloitre et al., 2002; Evershed et al., 2003; Linehan, 1993b) is a promising direction for future treatment research on anger and aggression. These suggestions for clinical research are only a starting point, and more information is needed about predictors of women's aggression.

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