

The Mediating Effect of Anger Proneness on the Relationship Between
Masculine Gender Role Stress and Aggression

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Abstract

The purpose of the current study was to examine the mediating role of anger proneness in explaining the relationship between masculine gender role stress (MGRS) and aggression. Additionally, the moderating effect of anger proneness was also examined. Both physical and verbal forms of aggression were examined in the current model. Participants were 163 male undergraduate students. The criteria proposed by Baron and Kenny (1986) and Holmbeck (1997, 2002) were followed to test for mediational and moderational effects. Hierarchical regression analyses were conducted. Results indicate that anger proneness does mediate the relationship between MGRS and aggression, particularly physical aggression. Tests for moderated effects were not supported. The clinical and theoretical implications of these findings are discussed.

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Introduction

The notion of aggression as a unitary phenomenon has been shown to be too broad and far too vague to be of significant merit for empirical investigations (Caprara, Barbaranelli, & Comrey, 1992). As argued by these authors, the notion of aggression as a unitary phenomenon has led researchers to emphasize the similarities of the outcomes and to overlook the different processes and individual differences which serve to sustain and govern the various behaviors considered aggressive. Consequently, some researchers have sought to investigate various forms of aggression, such as verbal and physical aggression (Buss & Perry, 1992), in an attempt to extend our current understanding of aggression, as well as investigate contributory differences in forms of aggression. Thus, there exists great importance in elucidating individual differences that emotionally and cognitively mediate aggression, in both empirical research and theoretical networks. Examination of the types of individual differences that influence the etiology and maintenance of aggression has begun receiving increasing attention over the past decade. One such attempt has been the exploration of gender role stress as it relates to anger and aggression, particularly in males.

In regard to the socialization of masculine ideology, studies have demonstrated that school-aged boys are aware of what is expected of them and restrict their interests and activities to what is suitably “masculine” as early as kindergarten; moreover, demands that young males conform to social notions of what is “manly” come early and are enforced and reinforced with much more vehemence than similar attitudes with respect to girls (Hartley, 1974). It has also been demonstrated that masculine ideology tends to remain relatively stable over time in school-aged boys (Dickerscheid, Schwarz, Noir, & El-Taliawy, 1988), across the transition from adolescence to adulthood (Fan & Marini, 2000; Holmlund, 1992) and in adulthood (Berg, 1985).

Identification of the Research Problem

Several studies have suggested that men who are more strongly committed to the traditional male gender role are more likely to exhibit aggressive partner-directed behavior (Copenhaver, Lash, & Eisler, 2000; Franchina, Eisler, & Moore, 2001). Moreover, it has long been argued that as a result of masculine gender role socialization, some men tend to hold the belief that enacting their gender role requires that they behave decisively and competitively, to develop strategies to exert power and control over others, and to suppress the expression of emotionality, except for anger (Levant et al., 1992). It has been suggested that this phenomenon is in large part due to the stress that these men experience as a result of encountering situations that are appraised or perceived to be discordant or threatening to such traditional male gender roles (Eisler & Skidmore, 1987).

In an attempt to more fully understand this phenomenon, Eisler & Skidmore (1987) developed the Masculine Gender Role Stress (MGRS) scale as a measure to aid in the empirical investigation of the stress that is experienced by men during such appraisals. In their work, the concept of masculine gender role stress refers to the cognitive appraisal of specific situations as stressful for men. These situations include the individual's cognitions and behaviors, as well as environmental events. On the basis of traditional masculine gender roles, this implies that men may experience stress when they encounter situations that they view as threatening to their masculine ideology. These authors characterized the most prominent gender role stress-producing situations for men as those in which they perceive themselves as (1) physically inadequate, (2) emotionally expressive, (3) subordinate to women, (4) intellectually inferior, or (5) performing inadequately.

MGRS and Aggression

Previous investigations have shown that MGRS may play an important role in partner-directed abusive behavior (Copenhaver et al., 2000). Research has also suggested that men who experience higher levels of MGRS are more likely to report negative attributions and negative affect

toward threatening partner behavior and more likely to endorse the use of aggressive behavior than are their low MGRS counterparts (Franchina et al., 2001). One gap in the current research on MGRS is the lack of understanding of the relationship between MGRS and aggressive behavior in men, outside of partner-directed violence. Indeed there have been multiple published reports of the link between males, masculinity, and aggression. Gold, Fultz, Burke, Prisco, and Willett (1992) reported that “macho” males tend to respond to distressing stimuli by inhibiting “feminine” emotions (e.g., empathy) and by amplifying “masculine” emotions (e.g., anger), thereby increasing the risk of aggressive behavior. However, the research literature is lacking in findings that have sought to examine the link between cognitive appraisals of stress to relevant masculine ideology and aggressive behavior.

Indeed, if it is hypothesized that those who tend to appraise situations as threatening to their masculine ideology tend to report more aggressive behavior directed towards their partner, it would seem a logical extension of this literature to investigate if this relationship is also characteristic of their likelihood to engage in other forms of aggression that is not necessarily partner-directed. The finding that men high in MGRS are also “very likely” to report higher experiences of anger (Eisler & Skidmore, 1987) tends to suggest that such a relationship is likely. Empirical evidence supportive of the relationship between MGRS and various forms of aggression that is not necessarily partner-directed would help to increase the ecological validity of the MGRS scale’s utility to investigations of individual differences in aggression beyond dating situations and partner-directed aggression.

The Influence of Cognitions on Affect

According to Lazarus and Folkman (1984), “cognitive appraisal is an evaluative process that determines why and to what extent a particular transaction or series of transactions between the

person and the environment is stressful” (p. 19). The role of cognitive appraisals in aggressive behavior has received increased attention in recent years. Several researchers (Berkowitz, 1990; Crick & Dodge, 1994; Dodge, 1980, 1993; Huesmann, 1988) have focused increasing attention on the role of perceptions and attributions in aggression, reporting that aggressive individuals tend to appraise ambiguous information and cues as hostile. In these theories, cognitive appraisals have a direct influence on an individual’s affect, which in turn influences behavior. In the current model the individual who tends to have a higher propensity to cognitively appraise situations as conflicting with his ideological gender role would thus experience higher levels of stress. Subsequently, due to the saliency of such schema, the individual has an increased likelihood of experiencing greater and more frequent affective anger (Vass & Gold, 1995). While it may seem reasonable that MGRS is closely related to the experiences of anger, which in turn is related to aggressive behavior, to date research investigating the link between MGRS and aggression has not sought to more closely examine this interrelationship between the cognitive component of MGRS, the affective component of anger, and the different behavioral components of aggression.

The Anger – Aggression Link

Theorists have long recognized the link between high levels of anger or anger proneness and increased risk for aggressive behavior (Dodge, 1991; Novaco, 1994; and Spielberger, 1988). It has been reported that the heightened affective component of anger that is often experienced during stressful stimulation fosters heightened adrenocortical activity, which mainly through the release of glucocorticoids and their hyperglycemic effect, generates an undercurrent of acute emotions that lasts for extended periods of time (Zillman, 1994). The effect of such an undercurrent is that it places the individual in a state of increased action readiness. It creates among other things, superior conditions for anger and aggressive responsiveness, and does so tonically (i.e., for extended periods

of time). Consequently, the activity may last for hours and days after the termination of the stressful stimulation. Thus, individuals suffering from such stress carry adrenocortical activity along into subsequent conflicts, a circumstance that increases their vulnerability to anger escalation and their propensity to react aggressively. Such a propensity, or anger proneness, is similar to the concept of “rumination” described by Konecni (1975) and extended by Caprara, Perguni, and Barbaranelli (1994), which refers to an increase in the probability of aggression as a result of experiencing prolonged feelings of anger after a stressor has occurred. In addition to the biological and emotional components of aggression, it has been reported that the role of anger in facilitating aggression may be greatly influenced by social learning factors (Cornell, Peterson, & Richards, 1999). Indeed, the socialization of gender role behaviors and expectations are largely shaped by social learning factors.

Aims of the Current Study

Consequently, the present study aims to help elucidate the relationship among MGRS, angry affect, and aggressive behaviors. Specifically, it is based on the theory that individuals who tend to experience higher levels of MGRS tend to view the world through a cognitive lens which in turn guides their appraisals as gender-role incongruent and stressful (Eisler & Skidmore, 1987). The result of such a habitual tendency to appraise situations in this fashion is more frequent experiences of anger, and subsequently, a greater tendency to behave aggressively. Lending further support to this model are findings from previous research that have demonstrated that MGRS is predictive of the experience of anger (Eisler & Skidmore, 1987; Eisler, Skidmore, & Ward, 1988; McCreary et al., 1996; and Wiener, 1993). As a result of increases in the affective component of anger, men high in MGRS tend to compensate for such a threat to their masculine ideology by responding aggressively in order to regain power and control (Levant et al., 1992).

It is proposed that the increased tendency to experience MGRS is a causal agent in increased feelings of anger, which in turn serve as a causal agent in the increased propensity to behave aggressively. Such a model proposes that anger *mediates* the proposed relationship between MGRS and aggression.

Implications of the Current Model

If the hypothesized model is substantiated, then these findings may have considerable implications for research examining the male-aggression link. Additionally, findings may provide implications for the treatment of men who exhibit maladaptive aggression, as well as other forms of psychological distress. For example, on the basis of their finding that MGRS was positively related to psychological distress, Good, Sherrod, and Dillon (2000) suggested that clinicians should be mindful of gender-related issues (e.g., social expectancies that men should be emotionally restrictive) when arriving at diagnoses and treatment planning for these men.

Hypothesis of the Current Model

Hypothesis 1. A positive relationship is hypothesized between the experience of MGRS and aggressive behavior in the current sample (college males). Such a finding would extend previous findings of this relationship beyond partner-directed aggression.

Hypothesis 2. Anger proneness is hypothesized to explain the relationship between experiencing MGRS and aggression as a mediator of that relationship. As such, it is predicted that:

- (a) MGRS will be predictive of aggression.
- (b) MGRS will be predictive of anger proneness.
- (c) Anger proneness will be predictive of aggression.

- (d) MGRS will no longer significantly predict aggression once anger proneness is taken into account.

In addition, several post-hoc analyses will be carried out. Hierarchical regression analyses will be conducted to examine if Anger Proneness also moderates the relationship between MGRS and aggression, following Holmbeck's (1997) guidelines for testing moderated effects. However, there are no predictions regarding moderated effects. Rather, tests for moderation will be done from an exploratory framework. Post-hoc hierarchical regression analyses will also be conducted to more closely examine the mediational/moderational effect of Anger Proneness between MGRS and both forms of aggression (i.e., physical and verbal) independently. Lastly, in order to more closely examine the mediational/moderational relationship of anger proneness, exploratory hierarchical regression analyses will be carried out utilizing the subscales of the MGRS as the independent variables.

Method

Participants

The participants in the study were male undergraduate students enrolled in Introductory Psychology at Virginia Polytechnic Institute and State University. The participants were part of a larger sample of male and female students who participated in a study on the effects of community violence exposure. Participants in the original study were recruited through the psychology subject pool and received course credit for participation that was in accordance with guidelines of the Department of Psychology. The current sample was comprised of 163 males (74% Caucasian, 6% African American, 12% Asian, 3% Hispanic, 5% "Other"). Age of male participants were as follows: 29% were 18, 23% were 19, 21% were 20, 14% were 21, and 13% were 22 or older. Demographic information was obtained using a demographic questionnaire (see Appendix A).

According to a power analysis conducted using *GPower* power analysis software (Faul & Erdfelder, 1992), the current sample meets the required sample size estimate of 107 in order to obtain a medium effect size ($f^2 = .15$) with a power of .95.

Measures

The measures used for the current analyses were included amongst a larger battery of measures in the original study.

Masculine Gender Roles Stress (See Appendix C). The Masculine Gender Role Stress scale (MGRS; Eisler & Skidmore, 1987) is a self-report questionnaire that was designed to assess men's perceptions of gender-role stress associated with cognitive, behavioral, and environmental events. The MGRS consists of 40 items and is rated according to "how stressful would you find each of the following situations." Participants respond on a 6-point Likert-type scale of 0 (*not at all stressful*) to 5 (*extremely stressful*), such that higher scores indicate greater gender role stress. Responses to items were summed for a total possible score of 200. Item-total correlations and exploratory factor analyses of this scale using college men were used to reduce the scale from 66 items to the current 40-item version. Using principal component analysis, five interpretable factors were yielded to form subscales: (1) *Physically Inadequacy*, (2) *Emotionally Inexpressiveness*, (3) *Subordinate to Women*, (4) *Intellectually Inferiority*, and (5) *Performance Failure*. Internal consistency estimates for the subscales have ranged from $\alpha = .77$ to $\alpha = .90$ (Fischer & Good, 1997). The test-retest reliability of the MGRS scale for a 2-week interval yielded sufficient reliability ($r = .90$). Support for the construct validity of MGRS has been cited as adequate in previous research (Eisler, 1995), which indicated significant positive correlations between MGRS and men's reports of anger, anxiety, and engaging in risky health behavior.

Anger Proneness (See Appendix D). The Trait Anger Scale (TAS; Spielberger, 1991) is a 10-item self-report measure that assesses how often angry feelings are experienced over time. The TAS is designed to assess more habitual response tendencies. Responses range on a scale from 1 (*almost never*) to 4 (*almost always*). A total score was obtained by summing all items, with higher scores reflective greater anger proneness. Spielberger (1988) reported an acceptable alpha coefficient for the internal consistency of the TAS in undergraduate samples ($\alpha = .84$). Spielberger (1991) provides evidence for the criterion validity of the TAS for college males by reporting significant correlations ($r = .59$ to $.71$) between scores on the TAS and scores on the Buss-Durkee Hostility Scales (Buss & Durkee, 1957) and the Cook-Medley Hostility Scale (Cook & Medley, 1954, cited in Spielberger, 1991). In addition, Greene, Coles, and Johnson (1994) provided evidence for the construct validity of the TAS by showing that spouse abusers had significantly higher scores compared with average adult males.

Aggression (See Appendix B). The Aggression Questionnaire (AQ; Buss & Perry, 1992) is a 29-item self-report measure of aggression. Replicated factor analysis yielded 4 subscales: (1) *Physical Aggression*, (2) *Verbal Aggression*, (3) *Anger*, and (4) *Hostility*. Response for each item ranges from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). Adequate internal consistency of the four factors and the total score has been established (ranging from $\alpha = .72$ to $\alpha = .89$). Test-retest reliability over a 9-week period has also been reported (ranging from $r = .72$ to $r = .80$). Evidence for construct validity of the AQ has been reported by showing significant positive correlations between self-reported aggression and peer-nominations of aggressiveness. Because the present study is primarily concerned with the behavioral components of aggression, analyses will be conducted without the Anger and Hostility subscales of the AQ. The Anger and Hostility subscales were designed to measure the affective and cognitive components of aggression.

Thus, these subscales were excluded in an effort to provide a more specific measure of the behavioral component of aggression as well as to remove the potential confound of duplicating the same construct as measured by the TAS (i.e., item overlap). Scores for each subscale were obtained by summing the relevant items and combining them into one index of aggression (i.e., Aggression) that included both physical and verbal, in the direction of higher scores reflecting greater aggression.

Procedures

Data were collected in the original study by having participants come to a pre-assigned room in groups of approximately 30 students. After providing written consent and receiving instructions, the participant completed a battery of measures that took approximately 2 hours to complete. All participants were provided an individual code number and all questionnaire data were kept anonymous.

Results

Preliminary Analyses

Means and standard deviations for the current sample are presented in Table 1. Internal consistency estimates of reliability were computed for each of the measures included in the current study. Internal consistency was calculated as Cronbach alpha = .94 for the MGRS scale; Cronbach alpha = .75 for the Trait Anger scale; and Cronbach alpha = .84 for the combined aggression index, indicating satisfactory reliability for all three measures.

Pearson r correlations were computed to examine the relationships between age and all measures used in this study. A non-significant, negative relationship was found between age and MGRS, $r(147) = -.16, p = .06$, indicating moderately decreased levels of MGRS with age. A non-significant, negative relationship was found between age and Anger Proneness, $r(155) = -.16, p =$

.06, indicating moderately decreased levels of Anger Proneness with age. Pearson r correlation coefficient indicated a negligible relationship between age and the combined Aggression index, $r(155) = -.05, p = .53$, Physical Aggression, $r(155) = -.06, p = .49$, and Verbal Aggression, $r(155) = -.01, p = .86$. In sum, no significant relationships were found. Since age was not found to be significantly related to MGRS, Anger Proneness, and Aggression, it was not considered further in the analyses.

Pearson r correlations were also conducted to determine the relationships between MGRS, Anger Proneness, and Aggression (see Table 2 for details). A significant positive relationship was found between MGRS and Anger Proneness, $r(155) = .40, p = .00$, Physical Aggression, $r(155) = .16, p = .04$, and the combined Aggression index, $r(155) = .17, p = .03$. A trend towards a positive relationship was found between MGRS and Verbal Aggression, $r(155) = .14, p = .09$. These findings indicate increased levels of anger proneness and aggression as MGRS increases, thus supporting the first hypothesis (i.e., a positive relationship was hypothesized between the experience of MGRS and aggressive behavior in the current sample). Regarding anger proneness, significant positive relationships were found between Anger Proneness and both forms of aggression: Physical Aggression, $r(163) = .48, p = .00$, and Verbal Aggression, $r(163) = .35, p = .00$, as well as with the combined Aggression index, $r(163) = .50, p = .00$, indicating increased levels of aggression as anger proneness increases.

Mediational Analyses

Anger proneness was hypothesized to explain the relationship between experiencing MGRS and aggression as a mediator of that relationship. Prior to testing the potential mediating effect for anger proneness, the predictor variables (MGRS and Anger Proneness) were centered, as suggested by Aiken and West (1991) and Holmbeck (2002). This procedure reduces multicollinearity between the two predictors and the interaction term between them.

To examine the potential mediating role of anger proneness a hierarchical regression analyses was conducted. The four criteria proposed by Baron and Kenny (1986) and Holmbeck (1997) were used to test the mediating role of anger proneness in explaining the relationship between masculine gender role stress and aggression.

Criterion 1 states that the independent variable (MGRS) must significantly predict the dependent variable (Aggression). A bivariate regression analysis was conducted in which Aggression was regressed on MGRS in order to examine such a relationship (see Table 3). The standardized beta coefficient was significant, $t(155) = 2.17, p = .03$, indicating that MGRS significantly predicted aggression, thereby fulfilling criterion 1.

Criterion 2 states that the independent variable (MGRS) must predict the mediator (Anger Proneness). Once again, a bivariate regression analysis was conducted in which Anger Proneness was regressed on MGRS in order to examine such a relationship (see Table 3). The standardized beta coefficient was significant, $t(155) = 5.45, p = .00$, indicating that MGRS significantly predicted anger proneness, thereby fulfilling criterion 2.

Criterion 3 states that the mediator (Anger Proneness) must predict the dependent variable (Aggression). The bivariate regression conducted in which Aggression was regressed on Anger Proneness indicates such a relationship (see Table 3). The standardized beta coefficient was significant, $t(155) = 7.23, p = .00$, thereby fulfilling criterion 3.

Criterion 4 states the effect of the independent variable (MGRS) must become nonsignificant or substantially reduced in magnitude once the mediator (Anger Proneness) is taken into account. Such a relationship was examined using hierarchical regression analyses with Aggression as the dependent variable, MGRS entered in the first block, and Anger Proneness entered in the second block (see Table 4). As previously reported, when MGRS was entered in the first step of the hierarchical regression equation, the standardized beta coefficient was significant,

$t(155) = 2.17, p = .03$. When Anger Proneness was entered in the second step of this equation, the standardized beta coefficient for MGRS was no longer significant, $t(155) = -.531, p = .60$.

However, the standardized beta coefficient for Anger Proneness in Step 2 was significant, $t(155) = 6.96, p = .000$, indicating that the relation between MGRS and Aggression was partially mediated by Anger Proneness.

Results indicate that MGRS was both substantially reduced in magnitude and no longer significantly predicted aggression when Anger Proneness was included in the model. In sum, these findings indicate that Anger Proneness did mediate the relationship between experiencing MGRS and aggression. Thus, hypothesis 2 was substantiated. Nevertheless, as outlined by Holmbeck (2002), post-hoc probes of mediational effects were carried out in order to determine the significance of the reduction in β and the significance of the indirect effect (i.e., the drop in the total predictor \rightarrow outcome effect when the mediator is included in the model) using Sobel's (1988) test for computing the standard error of the indirect effect. Sobel's (1988) z test was significant, $z = 4.28, p = .000$, indicating that significant mediation was found.

Post-Hoc Analyses

In addition to the test of mediational effects, analyses were also conducted to examine if anger proneness moderated the relationship between MGRS and aggression (see Table 4 for results). A hierarchical regression analysis was conducted following Holmbeck's (1997) guidelines for testing moderated effects. Specifically, the predictor (MGRS) and the moderator (Anger Proneness) main effects were entered into the regression equation first at steps 1 and 2, respectively (as in the previous mediation analyses), followed by the interaction of the predictor and the moderator (MGRS x Anger Proneness) at step 3, in a hierarchical fashion. The R^2 regressing aggression on MGRS was .03 ($p = .03$). As previously described, including Anger Proneness increased the R^2 to .26, which was a significant increase ($p = .00$). However, the MGRS x Anger

Proneness interaction did not account for a statistically significant amount of added variance ($R^2 = .25, p = .73$). Thus, while the main effects were found, results indicated that no significant interaction emerged. Thus, the test for moderator effects was not supported.

Consistent with the previous mediational analyses, post-hoc hierarchical regression analyses were also conducted to more closely examine the mediational/moderational effect of Anger Proneness between MGRS and both forms of aggression (i.e., physical and verbal) independently.

Physical Aggression. As outlined in Table 5, results indicate that Anger Proneness mediated the relationship between MGRS and Physical Aggression. When entered in Step 1, the standardized beta coefficient for MGRS was significant, $t(155) = 1.99, p = .04$. When Anger Proneness was entered in Step 2, the standardized beta coefficient for MGRS was no longer significant, $t(155) = -.71, p = .48$; however, the standardized beta coefficient for Anger Proneness in Step 2 was significant, $t(155) = 6.93, p = .00$, indicating that the relation between MGRS and Physical Aggression was mediated by Anger Proneness. Sobel's (1998) z test for significance of the mediated effect was also significant, $z = 4.24, p = .00$, thus providing further support for mediational effects. Consistent with previous findings, Anger Proneness did not serve as a moderator, R^2 Change = .01, F Change = 1.70, $p = .19$.

Verbal Aggression. As provided in Table 6, results indicate that the bivariate relationship between MGRS and verbal aggression was non-significant, $t(155) = 1.73, p = .08$). As outlined by Criterion 1 from Baron and Kenny (1986) and Holmbeck (1997) the independent variable (MGRS) *must* significantly predict the dependent variable (Verbal Aggression) in order to test for mediation. Thus, it is arguable that mediational/moderational effects should not be examined further. However, in order to provide qualitative information regarding the relationships between MGRS, anger proneness, and verbal aggression results from the hierarchical regression analysis are provided in Table 6 and should be interpreted with caution. Collectively, results suggest a non-

significant mediational effect for Anger Proneness on the relation between MGRS and Verbal Aggression.

MGRS Subscales.

In order to more closely examine the relationships between MGRS, Anger Proneness, and Aggression, a series of post-hoc analyses was conducted in which the subscales of the MGRS scale, Anger Proneness, and Aggression were more closely examined for potential mediating/moderating effects. Pearson r correlations were conducted to determine the relationships between each of the MGRS subscales with Anger Proneness and Aggression (see Table 7 for results). Only those subscales of the MGRS for which there was a significant correlation with aggressive behavior were examined further. Thus, only the *Emotional Inexpressiveness*, *Subordination to Women*, and *Intellectual Inferiority* subscales were considered.

To more closely examine the mediating/moderating role of Anger Proneness a series of independent hierarchical regression analyses were conducted with these three MGRS subscales as the independent variables. Consistent with previous analyses, Anger Proneness served as the mediating/moderating variable and Aggression served as the dependent variable. The criteria proposed by Baron and Kenny (1986) and Holmbeck (1997) and outlined previously were used to test the mediating/moderating role of Anger Proneness in explaining the relationship between the MGRS subscales and Aggression (see Table 7, 8, and 9 for results).

Emotional Inexpressiveness. As indicated in Table 7, findings for associations between the Emotional Inexpressiveness subscale of the MGRS and aggression revealed a significant mediating effect of Anger Proneness. When Emotional Inexpressiveness was entered in the first step of the hierarchical regression equation, the standardized beta coefficient was significant, $t(155) = 2.56, p = .01$. When Anger Proneness was entered in the second step of this equation, the standardized beta coefficient for Emotional Inexpressiveness was no longer significant, $t(155) = .22, p = .83$.

However, the standardized beta coefficient for Anger Proneness in Step 2 was significant, $t(155) = 6.77, p = .000$), indicating that the relation between Emotional Inexpressiveness and Aggression was mediated by Anger Proneness. Sobel's (1988) z test for significance of the mediated effect was also significant, $z = 2.40, p = .05$, further indicating that significant mediation was found. In addition, given that the b for the total effect was .200, $b_{\text{indirect effect}} / b_{\text{total effect}} = .100 / .200$ or .500 (MacKinnon & Dwyer, 1993). Thus, roughly 50% of the Emotional Inexpressiveness→Aggression path was accounted for by the mediator (Anger Proneness). In this case, anger proneness partially mediated the association between emotional inexpressiveness and aggression. Additionally, the Emotional Inexpressiveness x Anger Proneness interaction did not account for a statistically significant amount of added variance, $R^2 \text{ Change} = .01, F \text{ Change} = 1.70, p = .19$, indicating that a moderating effect for Anger Proneness was not supported.

Subordination to Women. Findings for associations between the Subordination to Women subscale of the MGRS and aggression also revealed a significant mediating effect of Anger Proneness (see Table 8). When Subordination to Women was entered in the first step of the hierarchical regression equation, the standardized beta coefficient was significant, $t(155) = 2.06, p = .04$. When Anger Proneness was entered in the second step of this equation, the standardized beta coefficient for Subordination to Women was no longer significant, $t(155) = .44, p = .66$. However, the standardized beta coefficient for Anger Proneness in Step 2 was significant, $t(155) = 6.99, p = .00$), indicating that the relation between Subordination to Women and aggression was mediated by Anger Proneness. Sobel's (1988) z test for significance of the mediated effect was also significant, $z = 1.97, p = .05$), further indicating that significant mediation was found. In addition, given that the b for the total effect was .160, $b_{\text{indirect effect}} / b_{\text{total effect}} = .080 / .160$ or .500 (MacKinnon & Dwyer, 1993). Thus, roughly 50% of the Subordination to Women→Aggression path was accounted for by the mediator (Anger Proneness). In this case, anger proneness partially mediated the association

between subordination to women and aggression. Additionally, the Subordination to Women x Anger Proneness interaction did not account for a statistically significant amount of added variance, R^2 Change = .00, F Change = .00, $p = .98$, indicating that a moderating effect for Anger Proneness was not supported.

Intellectual Inferiority. Findings for associations between the Intellectual Inferiority subscale of the MGRS and aggression also revealed a significant mediating effect of Anger Proneness (see Table 9). When Intellectual Inferiority was entered in the first step of the hierarchical regression equation, the standardized beta coefficient was significant, $t(155) = 2.00$, $p = .04$. When Anger Proneness was entered in the second step of this equation, the standardized beta coefficient for Intellectual Inferiority was no longer significant, $t(155) = -.29$, $p = .78$. However, the standardized beta coefficient for trait anger in Step 2 was significant, $t(155) = 7.01$, $p < .00$, indicating that the relation between Intellectual Inferiority and aggression was mediated by Anger Proneness. Sobel's (1988) z test for significance of the mediated effect was also significant, $z = 1.96$, $p = .05$, further indicating that significant mediation was found. In addition, given that the b for the total effect was .158, $b_{\text{indirect effect}} / b_{\text{total effect}} = .082 / .158$ or .518 (MacKinnon & Dwyer, 1993). Thus, roughly 52% of the Intellectual Inferiority→Aggression path was accounted for by the mediator (Anger Proneness). In this case, anger proneness partially mediated the association between intellectual inferiority and aggression. Additionally, the Intellectual Inferiority x Anger Proneness interaction did not account for a statistically significant amount of added variance (R^2 Change = .001, F Change = .303, $p < .58$), indicating that a moderating effect for Anger Proneness was not supported.

Discussion

The chief objectives of the current study were: 1) to determine the relationship between MGRS and aggressive behavior that is not necessarily “partner-directed,” and 2) to test the mediating role of anger proneness in predicting aggression from masculine gender role stress, according to the four criteria described by Baron and Kenny (1986) and Holmbeck (1997). Findings provide empirical support for the first objective. Specifically, a positive association was found between MGRS and aggression, both physical and verbal. This finding extends previous research supporting a relationship in which the aggression is “partner-directed” by providing further evidence of increased aggressive behavior in males experiencing elevated levels of masculine gender role stress.

The second objective, that anger proneness mediates the aforementioned association was also examined in the current study. Results from hierarchical regression support such a hypothesis. Specifically, the effects of MGRS on aggression became non-significant after controlling for Anger Proneness, thus providing preliminary support and initial evidence for mediational effects. Post hoc probing of the significance of the mediational effect of anger proneness revealed that Anger Proneness significantly and fully mediated the observed relationship between MGRS and Physical Aggression, as well as a trend for such mediation between MGRS and Verbal Aggression. Although no specific predictions were made, it is not clear why significant mediation was found for physical aggression but not verbal aggression. Perhaps when in situations that are perceived as threatening to traditional masculine ideology physical aggression is a more likely response. Such a finding would be consistent with previous studies reporting greater frequencies of physical aggression, as compared to verbal aggression, in males (Buss & Perry, 1992). Nevertheless, findings from this study provide implications for future studies to continue the current line of

research in order to better assess the role of anger proneness and MGRS in the expression of different forms of aggression.

In addition to tests of mediational effects of anger proneness, tests of moderational effects were also carried out. Results indicate that there was no significant MGRS x Anger Proneness interaction. Thus, anger proneness was not found to moderate the relationship between MGRS and aggression.

Findings for the Mediational Model

The finding that males who tend to experience higher levels of MGRS also tend to experience elevated levels of anger proneness and aggression replicates and extends earlier findings by Eisler et al. (1988) and is consistent with a growing body of literature on the experience of masculine gender roles stress and aggression. Indeed, growing evidence in this literature suggests that men tend to experience stress associated with gender-role identification. Situations that pose a threat to male competence will likely be seen as stressful. Men who experience difficulties meeting the demands of the male role (e.g., not being in control, not attaining work success), will experience MGRS (Eisler et al., 1988). Men may feel stressed because the required skills may not be in their repertoire and/or male norms may prohibit them from engaging in such “unmanly” behaviors.

As with stress in general, the experience of MGRS is not without harmful effects. We would expect, and empirical findings support, that MGRS tends to result in increased levels of anger and anxiety (Eisler et al., 1988), greater health problems, e.g., cardiovascular reactivity and heart disease (Lash et al., 1990), substance use (Isenhardt, 1993; Lash et al., 1998), and interpersonal relationship difficulties (Copenhaver & Eisler, 1996), as well as hypothesized links to other health-risk behavior, including cigarette smoking, greater alcohol usage, unsafe driving habits, and

inconsistency in diet and exercise (Eisler, 1988). Previous findings also link MGRS to partner-directed abusive behavior (Copenhaver et al., 2000) and negative attributions and negative affect toward threatening partner behavior (Franchina et al., 2001). One goal of the current study was to explore the relationship between MGRS and aggression that is not necessarily partner-directed. The current study extends previous findings by demonstrating that men who tend to experience MGRS also tend to report greater levels of aggressive behavior, particularly when gender role stress is experienced in situations characteristic of threats to Emotional Inexpressiveness, Subordination to Women, and Intellectual Inferiority. Thus, results support the notion that as men experience increased levels of MGRS they tend to experience heightened levels of anger, and subsequently higher levels of aggression, perhaps as a means of achieving equilibrium within their self-perceived masculine gender role. That is, one means of reducing perceived threat to one's traditional male gender role is to amplify "manly" emotions (e.g., anger) and behaviors (e.g., aggression, dominance).

Implications of the Current Study

Copenhaver et al., (2000) demonstrated that those males who tend to appraise situations as threatening to their masculine ideology tend to report more aggressive behavior directed towards their partner. One aim of the current study was the extension of this literature by investigating if this relationship is also characteristic of their likelihood to engage in aggression that is not necessarily partner-directed. Empirical evidence reported herein is supportive of the relationship between MGRS and aggression that is not necessarily partner-directed and thus helps to increase the ecological validity of the MGRS scale's utility to investigations of individual differences in aggression beyond dating situations and partner-directed aggression.

Current findings have considerable implications for research examining the male-aggression link. Theorists have long recognized the link between heightened levels of affective anger and increased risks for aggressive behavior. However, the role of cognitive appraisals in aggressive behavior has started receiving attention only in recent years. In these theories, cognitive appraisals have a direct influence on individual's affect, which in turn influences behavior. The incorporation of MGRS as one type of cognitive appraisal would seem to be of chief interest to those both conducting research and/or providing clinical intervention for anger and aggression.

In the current model, the individual who tends to have a higher propensity to cognitively appraise situations as conflicting with his ideological gender role would thus experience higher levels of stress. Subsequently, due to the saliency of such schema, the individual would have an increased likelihood of experiencing greater and more frequent anger proneness, and consequently, increased levels of aggression, particularly physical aggression. According to these findings, the experience of MGRS and the cognitive appraisals leading to the experience of such stress and anger proneness would appear to be valuable constructs within the nomological network regarding the male-aggression link. While it is noted that the affective component, anger proneness, mediated the relationship between MGRS and aggression, there are theoretical implications for incorporating the construct of MGRS in research on male aggression and anger. Indeed, MGRS has been implicated as a phenomenon leading to heightened levels of anger and anger proneness. Although it is this affective component of anger that may account for more variance in the expression of aggressive behavior, it seems logical that MGRS plays a primary role in such behavioral expression as it is this type of stress that significantly predicts the experience of anger and anger proneness. However, this does not underscore the direct influence of anger proneness on aggressive behavior. Rather, it argues for the inclusion of MGRS related influences as a precursor to anger proneness.

Moreover, according to these findings, intervention and prevention programs may enhance their effectiveness by taking into account such cognitive appraisals and their resulting gender role stress. Working directly with the individual to address excessive commitment to masculine gender role values may reduce gender role stress and lead to the development of more flexible and adaptive coping patterns, thereby reducing the experience of anger and aggressive behavior. One avenue that may prove effective is to promote the incorporation of feminine concepts into the self-concepts of persons prone to anger and aggressiveness and, at the same time, to link their existing masculine concepts (e.g., dominance) to negative outcomes (Kinney, Smith, & Donzella, 2001). An example of the foregoing approach would be teaching aggressive males high in MGRS to value empathy and to devalue control in their relations with others in addition to more traditional anger management techniques (e.g., relaxation training).

Limitations of the Current Study

There are some limitations to the findings of the current investigation that should be recognized. Subjects were drawn from a very specific population, that is, young college men who were predominately White, Anglo-Saxon. Therefore, the findings presented herein may not generalize to males of differing ethnicities, those who reside in other geographic settings, or those of differing age and/or educational level. Thus, the influence of ethnic, cultural, religious, socioeconomic, and geographic factors in the assessment of MGRS is one area that has yet to be incorporated and is encouraged for future research.

One significant limitation of this study is the correlational nature of the research design, which prevented clear cause-effect conclusions from being drawn regarding the mediating role of anger proneness. Although causation is inferred by such mediational findings, longitudinal studies are necessary to establish true causal connections among masculine gender role stress, anger

proneness, and aggression. Furthermore, because this is the first known research study to test the mediating and moderating roles of anger proneness in the relations between MGRS and aggression, replication with independent samples is necessary to establish the strength of these findings. Of particular interests would be the replication of such findings in samples identified as having more severe forms of aggression, such as in clinical or forensic settings. While it is predicted that such a relationship would exist, we are left awaiting empirical evidence of such mediational/moderational effects in such samples.

Additionally, the current findings do not provide qualitative information on the intricate process that may be interacting between MGRS and anger proneness during actual aggressive situations. Thus, future research is encouraged that attempts to more thoroughly isolate such processes. Future research is also encouraged to examine the presence of the forms of aggression. While the current study addressed physical and verbal forms of aggression, future research is encouraged to assess the influence of MGRS and anger proneness in other typological forms of aggression, such as instrumental aggression (or proactive aggression) and hostile aggression (reactive aggression). Given that *Reactive Aggression* is defined as a defensive response to perceived threat or provocation within the context of associated anger, fear, or frustration (Dodge, 1991) it would seem pertinent to empirically evaluate the role of MGRS, as well as anger proneness, in the reactive subtype of aggression.

It is pertinent to elaborate upon the relatively modest amount of variance accounted for by MGRS in the present study. Although statistically significant, MGRS appears less influential in the expression of aggressive behavior than is anger proneness. While it may seem intuitive that the affective component of anger would share a stronger relationship with aggression than would a cognitive appraisal set, it is valuable to elucidate alternative possibilities regarding such a finding.

Perhaps there exists some construct overlap regarding measuring MGRS, anger, and aggression. Although results indicate that multicollinearity was not a threat to the current investigation, perhaps the measured constructs do not match well regarding situational specificity. That is, the measure of aggressive behaviors used in the current study did not take into account gender role related aggressive situations. Rather, it assessed physical and verbal aggression in general. Perhaps if aggressive behavior is examined within the context of gender role discrepant or threatening situations (particularly those situations other than dating/partner-directed violence) direct aggressive behavior would share a stronger relationship with MGRS. Current findings argue for such an investigation as well as for closer examination of potential construct overlap.

Nevertheless, it may be advantageous to conceptualize the influence of MGRS on aggressive behavior indirectly, just as the results from mediational analyses suggest. That is, the experience of gender role stress tends to lead to increased levels of anger and subsequently, creates an affective state that may last for hours and even days after the cognitive appraisal (Zillman, 1994), thereby increasing one's likelihood of aggressing. However, it should also be noted that the modest relationship found between MGRS and aggression may also partially be a product of the current sample (i.e., relatively low-risk for aggression as compared to spouse-batterers, inpatient samples, and forensic samples). Thus, current findings argue for the replication of such findings in high-risk populations as well, wherein it is predicted that the relationship between MGRS and aggressive behavior may strengthen substantially.

It is also pertinent to note that findings from the current study relied upon data collected through self-report measures and is thus susceptible to method variance. Lastly, future research is encouraged that also attempts to examine the current model in respect to females. While it is noted that aggression is largely conceived as a more masculine behavior, the examination of the potential

role of female gender role stress in the experience of anger/anger proneness and aggressive behavior would seem to be a logical extension of the current model.

Summary

The current study provides support for the positive relationship between MGRS and aggressive behavior that is not “partner-directed.” Thus, as males tend to experience MGRS they tend to become more prone to anger, and subsequently, display increased aggressive behavior, particularly physical aggression. Such findings provide additional support for the inclusion of MGRS in the investigation of anger and aggression in males as well as provide implications for the treatment of men who exhibit difficulties related to the experience of anger and aggression. For example, on the basis of their finding that MGRS was positively related to psychological distress, Good et al. (2000) suggested that clinicians should be mindful of gender-related issues (e.g., social expectancies that men should be dominant and emotionally restrictive) when arriving at diagnoses and treatment planning for these men. Additionally, research provides support for the consideration of MGRS in the research and treatment of men’s related health problems and health-risk behaviors. Future research must acknowledge the complex relationship that MGRS related variables hold for the experience of anger, aggression, and health risks. These findings support that notion and provide evidence that MGRS plays a role in the experience and expression of anger and aggression and suggests that adopting such an approach to understanding anger and aggressiveness in males is valuable in that unique influences can be revealed. This information can then be used to enhance the effectiveness of empirical investigations and ultimately enhance the effectiveness of intervention and prevention programs for aggression, violence, and health-risks.

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Table 1

Sample Means and Standard Deviations for Measures

Measure	Mean (SD)
MGRS (n = 155)	157.00 (36.61)
<i>Physical Inadequacy</i>	39.59 (11.03)
<i>Emotional Inexpressiveness</i>	22.59 (8.22)
<i>Subordination to Women</i>	25.85 (11.25)
<i>Intellectual Inferiority</i>	22.58 (7.98)
<i>Performance Failure</i>	46.38 (9.80)
Anger Proneness (n = 163)	21.04 (3.61)
Aggression (n = 163)	33.84 (9.28)

Table 2

Pearson r Correlation Coefficients for MGRS, Anger Proneness, and Aggression (N = 155)

	MGRS	Anger Proneness	Aggression	Physical Aggression
Anger Proneness	.40**			
Aggression ¹	.17*	.50**		
Physical Aggression	.16*	.48**	.82**	
Verbal Aggression	.14 ²	.35**	.70**	.50**

¹Represents the combined aggression index; ² ($p=.08$); * $p<.05$ ** $p<.000$

Table 3

Bivariate Regression Results for Masculine Gender Role Stress, Anger Proneness, and Aggression (N=155)

Criterion	Path	β	R	ΔR^2	F
1	MGRS → Aggression	.17	.17	.02	4.73*
2	MGRS → Anger Proneness	.40	.40	.16	29.73**
3	Anger Proneness → Aggression	.50	.50	.24	52.28**

Note: MGRS = Masculine Gender Role Stress. * $p < .05$ ** $p < .000$

Table 4

Summary of Hierarchical Regression Analysis for Variables Predicting Aggression (N = 155)

Variable	B	SE B	β
Step 1	.17	.08	.17*
MGRS			
Step 2			
MGRS	-.04	.08	-.04
Anger Proneness	.53	.08	.53**
Step 3			
MGRS	-.04	.08	-.05
Anger Proneness	.53	.08	.54**
MGRS x Anger Proneness	-.03	.07	-.03

Note: MGRS = Masculine Gender Role Stress. $R^2=.03$ for Step 1 ($p<.03$); $\Delta R^2=.26$ for Step 2 ($p<.00$); $\Delta R^2=.25$ for Step 3 (*ns*). * $p<.05$ ** $p<.000$

Table 5

*Summary of Hierarchical Regression Analyses for Variables Predicting
Physical Aggression (n=155)*

Variable	B	SE B	β
Step 1			
MGRS	.16	.08	.16*
Step 2			
MGRS	-.05	.08	-.05
Anger Proneness	.53	.08	.53**
Step 3			
MGRS	-.06	.08	-.06
Anger Proneness	.54	.08	.54**
MGRS x Anger Proneness	-.28	.07	-.03

* $p < .05$ ** $p < .000$; $R^2 = .03$ for Step 1 ($p < .01$); $\Delta R^2 = .25$ for Step 2 ($p < .000$); $\Delta R^2 = .25$ for Step 3
(*ns*)

Table 6

*Summary of Hierarchical Regression Analyses for Variables Predicting**Verbal Aggression (N = 155)*

Variable	B	SE B	β
Step 1			
MGRS	.14	.08	.14
Step 2			
MGRS	-.08	.08	-.00
Anger Proneness	.34	.08	.35**
Step 3			
MGRS	-.03	.08	-.00
Anger Proneness	.34	.09	.35**
MGRS x Anger Proneness	-.01	.08	-.01

* $p < .05$ ** $p < .000$; $R^2 = .02$ for Step 1 ($p > .05$); $\Delta R^2 = .11$ for Step 2 ($p < .000$); $\Delta R^2 = .10$ for Step 3

(*ns*)

Table 7

Correlations Among MGRS Subscales, Anger Proneness, and Aggression (N = 155)

	MGRS-PI	MGRS-EI	MGRS-SW	MGRS-II	MGRS-PF	Anger Proneness
MGRS-EI	.46***					
MGRS-SW	.49***	.60***				
MGRS-II	.55***	.61***	.59***			
MGRS-PF	.52***	.32***	.19*	.39***		
Anger Proneness	.39***	.37***	.26***	.35***	.17*	
Aggression	.14	.20*	.16*	.16*	.00	.50***

Note: MGRS-PI = Physical Inadequacy, MGRS-EI = Emotional Inexpressiveness, MGRS-SW = Subordination to Women, MGRS-II = Intellectual Inferiority, MGRS-PF = Performance Failure;

* $p < .05$ ** $p < .01$ *** $p < .000$

Table 8

Summary of Hierarchical Regression Analyses for Emotional Inexpressiveness and Anger Proneness Predicting Aggression (n=155)

Variable	B	SE B	β
Step 1			
MGRS-EI	.20	.08	.20*
Step 2			
MGRS-EI	.02	.07	.02
Anger Proneness	.50	.07	.51**
Step 3			
MGRS-EI	-.01	.08	-.01
Anger Proneness	.53	.08	.54**
MGRS-EI x Anger Proneness	-.08	.06	-.10

Note: MGRS-EI = Emotional Inexpressiveness; * $p < .05$ ** $p < .000$; $R^2 = .04$ for Step 1 ($p < .01$); $\Delta R^2 = .25$ for Step 2 ($p < .000$); $\Delta R^2 = .26$ for Step 3 (*ns*)

Table 9

Summary of Hierarchical Regression Analyses for Subordination to Women and Anger Proneness Predicting Aggression (n=155)

Variable	B	SE B	β
Step 1			
MGRS-SW	.16	.08	.16*
Step 2			
MGRS-SW	.03	.07	.03
Anger Proneness	.50	.07	.51**
Step 3			
MGRS-SW	.03	.07	.03
Anger Proneness	.50	.07	.51**
MGRS-SW x Anger Proneness	.00	.07	.00

Note: MGRS-SW = Subordination to Women; * $p < .05$ ** $p < .000$; $R^2 = .03$ for Step 1 ($p < .05$); $\Delta R^2 = .25$ for Step 2 ($p < .000$); $\Delta R^2 = .250$ for Step 3 (*ns*)

Table 10

*Summary of Hierarchical Regression Analyses for Intellectual Inferiority and Anger Proneness
Predicting Aggression (n=155)*

Variable	B	SE B	β
Step 1			
MGRS-II	.16	.08	.16*
Step 2			
MGRS-II	-.02	.07	-.02
Anger Proneness	.52	.07	.52**
Step 3			
MGRS-II	-.02	.07	-.02
Anger Proneness	.51	.08	.51**
MGRS-II x Anger Proneness	.03	.05	.04

Note: MGRS-II = Intellectual Inferiority; * $p < .05$ ** $p < .000$; $R^2 = .03$ for Step 1 ($p < .05$); $\Delta R^2 = .25$ for Step 2 ($p < .000$); $\Delta R^2 = .25$ for Step 3 (*ns*)

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EDUCATION

2001 – Present Virginia Polytechnic Institute & State University (Virginia Tech), Blacksburg, Virginia
 Doctoral Candidate in Clinical Psychology (APA Accredited Program)

1998 – 2000 University of Southern Mississippi – Gulf Park, Long Beach, Mississippi.
 B.S. (Highest Honors) in Psychology, May, 2000. 4.0 GPA

1995 – 1998 Mississippi Gulf Coast Community College, Gulfport, Mississippi.
 Associates of Science (Honors) in Psychology, May 1998, 3.67 GPA

RESEARCH EXPERIENCE

Masters Thesis

“Mediating Role of Trait Anger in the Relationship Between Masculine Gender Role Stress and Aggression”
 Virginia Tech, (Successfully Defended on 04-01-03)

Supervisor: Angela Scarpa, Ph.D.

✳️ *Abstract:* The purpose of the current study was to examine the mediating role of anger proneness in explaining the relationship between masculine gender role stress (MGRS) and aggression. Additionally, the moderating effect of anger proneness was also examined. Both physical and verbal forms of aggression were examined in the current model. Participants were 163 male undergraduate students. The criteria proposed by Baron and Kenny (1986) and Holmbeck (1997, 2002) were followed to test for mediational and moderational effects. Hierarchical regression analyses were conducted. Results indicate that anger proneness does mediate the relationship between MGRS and aggression, particularly physical aggression. Tests for moderated effects were not supported. The clinical and theoretical implications of these findings are discussed.

Project Coordinator

(June 2000 – present)

“Community Violence Victimization in University Students”
 Virginia Tech.

Principal Investigator: Angela Scarpa, Ph.D.

✳️ Duties include training and supervision of graduate and undergraduate assistants, database development/supervision, and participant recruitment. Also serve as an experimenter, which includes administering a structured clinical interview and other assessment measures as well as obtaining various physiological measures (i.e., EKG, GSR, salivary cortisol, blood pressure, and respiration). Responsible for programming computer software and hardware for acquisition of psychophysiological measures using National Instruments *LabView* computer software and Coulbourn Instruments *LabLincV* hardware.

Project Co-Coordinator**(June 2000 – present)**

“Child & Adolescent Phobia Project” (Supported by NIMH – 5 R01 MH-59308)

Child Study Center, Virginia Tech.

Principal Investigator: Thomas H. Ollendick, Ph.D.

- ✳ Duties include training and supervision of graduate and undergraduate assistants, database management/supervision, overseeing collection and management of psychophysiological data, maintenance of supplies, distributing and maintaining record of monetary payments. Also serve as an assessor and therapist, which includes providing comprehensive pre- and post-treatment diagnostic assessments as well as supervised therapeutic intervention. Assessment instruments include ADIS-C, ADIS-P, ADIS-IV, and various additional self-report measures as well as physiological measures (i.e., EKG, GSR, and salivary cortisol).

Research Assistant**(March 1999 – June 2000)**

“Efficacy of Bupropion in Smoking Cessation”

Department of Veterans Affairs, Medical Center, Gulfport, Mississippi, March 1999 – June 2000.

Principal Investigators: Avery R. Buras, Ph.D. and Shirley Butts, PsyD.

- ✳ Assisted in the planning of the research project and in the writing of the research grant proposal. Assisted in organizing, coding, and entry of data using SPSS.

Research Assistant**(January 2000 – May 2000)**

“Mediating Role of Cardiovascular Reactivity between Socioeconomic Status and Cardiovascular Pathology”

(Supported by MacArthur Foundation). University of Southern Mississippi

Principal Investigator: Michael T. Allen, Ph.D.

- ✳ Duties included reviewing current literature using PsycLit, collection of articles, and summarizing findings as part of a meta-analysis.

Research Assistant**(February 1999 – June 1999)**

“Marine Mammal Behavior and Cognition”

University of Southern Mississippi

Principal Investigator: Stan Kuczaj, Ph.D.

- ✳ Conducted systematic observations of dolphin behavior for data analysis and typed daily summaries of dolphin activities for research design studying the cognitive and communicative abilities of marine mammals in a captive environment.

CLINICAL AND COMMUNITY EXPERIENCE

Psychological Services Center, Virginia Tech, VA

(Aug. 2001 – present)

Supervisors: Russell T. Jones (present); George Clum, Ph.D. (2001-2002); Lee D. Cooper, Ph.D. (summer 2002);

- ✳ Graduate Student Clinician. Conduct initial intake and assessments of clients (children, adults, families); prepare and administer weekly therapy sessions; create progress notes; participate in practicum team client conferences.

Child Study Center, Virginia Tech, VA

(Aug. 2001 – Aug. 2002)

Supervisor: Thomas H. Ollendick, Ph.D.

- ✳ Graduate Student Assessment Clinician. Conduct assessments of children and adolescents; prepare and administer intelligence, behavioral, and psychological tests; score measures and prepare reports; participate in assessment team client conferences; meet with teachers, principals, counselors, and other school personnel to assist in the coordination and facilitation of services within local school settings; train and supervise graduate clinicians.

Center for Rehabilitative Medicine, Carilion Hospital, VA**(Nov. 2000 – Aug. 2001)**Supervisor: Dr. William Willbourn, Ph.D.

- ✱ Psychometrician. Responsible for the administration and scoring of various psychological, neuropsychological, and intelligence assessment batteries under the direct supervision of a licensed Clinical Psychologist.

Memorial Behavioral Health, MS**(June 1997 – July 2000)**Supervisor: Linda Lyon, DON, MSN.

- ✱ Senior Psychiatric Technician. Worked with residential and acute child, adolescent, and adult inpatient populations (100 bed facility). Responsible for the direct care and supervision of unit specific milieu. Assist in patient treatment planning, behavior modification, unit orientation, crisis intervention, client education, and reports and record keeping. As a Senior Psychiatric Technician, I was responsible for heading crisis interventions, training and supervision of Psychiatric Technicians, assigning daily duties, and ensuring ethical standards were maintained at all times.

Department of Veterans Affairs, Medical Center, MS**(Oct. 1999 – Apr. 2000)**Supervisor: Gustave F. Sison, Ph.D.

- ✱ Clinician Assistant. Volunteer work with adult mental health and dual diagnosis veteran population in a day treatment setting with an average census of 70. Participated and assisted with individual and group therapy, recreational therapy, program orientation, and socialization skills. Participated in intake interviews, treatment planning, nursing meetings, continuing education classes, and psychologist meetings.

Resource Consultants Inc., Gulfport Job Corps, MS**(May 1999 – Oct. 1999)**Supervisor: Daniel Vujnovich, Ph.D.

- ✱ Assistant Counselor. Completed 144 practicum hours in counseling department of a school for high-risk juveniles. Assisted in individual and group orientation, individual and group counseling sessions, anger management groups, weekly mental health meetings, and treatment planning.

Sand Hill Behavioral Healthcare, Chemical and Alcohol Dependency Program, MS**(Dec. 1998 - May 1999)**Supervisor: Chip Peaks, BS, CADC.

- ✱ Assistant Counselor. Completed 144 practicum hours in substance abuse treatment program. Assisted in group therapy and patient education groups with adolescent and adult inpatient and partial program patients with substance abuse issues and patients with dual diagnosis disorders. Participated in initial assessment, weekly treatment planning, and implementation techniques.

South Mississippi AIDS Task Force, MS**(Mar. 1997-Apr. 1997)**

- ✱ Committee Member. Volunteer committee member of group organizing annual fundraisers. Served as a liaison between Task Force and local colleges and volunteer groups.

Memorial Hospital's Hospice Program, Rainy Days and Rainbows, MS**(Sept. 1996)**

- ✱ Counselor. Volunteer for a hospice program aimed at helping children cope with the loss of a parent or loved one. Conducted daylong one-on-one counseling and recreational activities.

PROFESSIONAL PUBLICATIONS

Scarpa, A., Van Voorhees, E., Hurley, J., Francisco, J., Hirai, M., & Ollendick, T. H., (Submitted). Emotional, behavioral, and psychophysiological correlates of reactive and proactive aggression in children. *Journal of the American Academy of Child & Adolescent Psychiatry*.

Scarpa, A., Fikretoglu, D., Bowser, F., Hurley, J. D., Pappert, C., Romero, N., Van Voorhees, E. (2002). Community violence exposure in university students: A replication and extension. *Journal of Interpersonal Violence*, 17(3), 253-272.

PROFESSIONAL PRESENTATIONS

Hurley, J. D., Davis, T. E., Friedman, B. H., Scarpa, A., Ollendick, T. H., & Öst, L., (Submitted/2003). Psychophysiologic assessment in One-Session treatment of specific phobias in children [Poster presentation]. 111th Annual Convention of the American Psychological Association. Toronto, Ontario, Canada.

Hurley, J. D., Van Voorhees, E., Franciso, J., Scarpa, A. & Ollendick, T. H., (Submitted/2003). Childhood reactive and proactive aggression: Emotional, behavioral, and psychophysiological correlates [Poster presentation]. 111th Annual Convention of the American Psychological Association. Toronto, Ontario, Canada.

Davis, T. E., Hurley, J. D., Ollendick, T. H., & Ost, L. G. (2002, November). A single case study of one-session treatment of specific phobias: Fear of being alone [Poster presentation]. 36th Annual Meeting of the Association for Advancement of Behavior Therapy: Reno, Nevada, U.S.A.

Hurley, J. D., Friedman, B. H., Scarpa, A., & Ollendick, T. H. (2002, October). Utility of psychophysiologic assessment in one-session treatment of specific phobias in children [Slide presentation]. In B. H. Friedman (Chair), The Psychophysiology of Anxiety: Basic Findings and Clinical Applications. 42nd Annual Meeting of the Society for Psychophysiological Research. Washington, D.C., U.S.A.

Scarpa, A., & Hurley, J. D. (2002, July). Emotional and behavioral correlates of reactive and proactive aggression in children [Poster presentation]. 15th World Meeting of the International Society for Research on Aggression. Montreal, Canada.

Hurley, J. D., Davis, T. E., Sander, J., Shortt, A., & Ollendick, T. H. (2002, June). Efficacy of one-session treatment of animal and situational specific phobia in children [Poster presentation]. Third International Conference on Child & Adolescent Mental Health: Brisbane, Australia.

Davis, T. E., Hurley, J. D., Shortt, A., Sander, J., & Ollendick, T. H. (2002, June). The generalization of one-session phobia treatment in children [Poster presentation]. Third International Conference on Child & Adolescent Mental Health: Brisbane, Australia.

Hurley, J. D., & Scarpa, A. (2001, December). Psychological adjustment to childhood sexual abuse in a sample of college males. [Poster presentation]. 17th Annual Meeting for the International Society for Traumatic Stress Studies, New Orleans, Louisiana.

Fikretoglu, D., Hurley, J. D., Van Voorhees, E., & Scarpa, A. (2001, December). Community violence exposure: Psychological and physiological outcomes. [Poster presentation]. 17th Annual Meeting for the International Society for Traumatic Stress Studies, New Orleans, Louisiana.

Hurley, J. D., Romero, N., & Scarpa, A. (2001, June). Psychological adjustment to community violence exposure. [Poster presentation]. 13th annual convention for the American Psychological Society, Montreal, Canada.

Hurley, J. D., Romero, N., & Scarpa, A. (2001, April). Psychological adjustment to community violence exposure. [Poster presentation]. Virginia Psychological Association Spring Convention, Roanoke, Virginia.

HONORS AND ACTIVITIES

Recipient of the following academic honors

- ✻ President's List (7 occasions)
- ✻ Dean's List (3 occasions)
- ✻ National Dean's List (2 occasions)

Recipient of academic achievement awards in:

- ✻ Sociology (3 separate occasions)
- ✻ Mechanical Engineering
- ✻ Honors Society
- ✻ Psychology Department award for highest undergraduate GPA
- ✻ Psychology Department award for Outstanding Community Service

Recipient of the following scholarships:

- ✻ Mississippi Gulf Coast Foundation Scholarship, 1999
- ✻ Achievement Award Scholarship, 1998 & 1999
- ✻ Community College Honors Scholarship, 1996 & 1997
- ✻ William Collins Memorial Scholarship, 1996

Member of the following organizations:

- ✻ American Psychological Association (APA)
- ✻ American Psychological Society (APS)
- ✻ International Society for Physiological Research (SPR)
- ✻ International Society for Traumatic Stress Studies (ISTSS)
- ✻ Mississippi Psychological Association (MPA)
- ✻ Virginia Psychological Association (VPA)
- ✻ Virginia Academy of Clinical Psychologist (VACP)
- ✻ Psi Chi (National Honors Society in Psychology)

REFERENCES

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