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Rape Myth Acceptance, Hypermasculinity, and SAT Scores as Correlates of Moral Development: Understanding Sexually Aggressive Attitudes in First-Year College Men

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Male perpetrated sexual aggression has long been recognized as a serious problem on college campuses. The purpose of this multiple regression correlation study was to assess the relationship between levels of moral development (measured by the Defining Issues Test) and the degree to which first-year college men (N = 161) ascribed to rape supportive attitudes, as measured by the Illinois Rape Myth Acceptance Scale and the Hypermasculinity Inventory. Respondents completed these instruments and a demographic questionnaire prior to the beginning of the fall semester. Pearson correlations indicated that there was a significant ($p < .01$) relationship between rape myth acceptance and moral development. There was not a significant relationship between hypermasculinity and moral development. Stepwise multiple regression analysis indicated that rape myths and SAT verbal scores accounted for 9% of moral development variance. Additional stepwise analysis suggested that the rape myth subscale, It Wasn't Really Rape, in combination with SAT verbal scores, accounted for approximately 10% of moral development variance. Implications for practitioners and researchers are provided.

Research has shown that rape is a pervasive problem on college campuses throughout the United States. Studies show that between 3 and 5% of college women experience rape and/or attempted rape during every academic year; an additional 21% report a lifetime incidence

of rape or attempted rape prior to coming to college (Fisher, Cullen & Turner, 2000; Mohler-Kuo, Dowdall, Koss, & Wechsler, 2004). The overwhelming majority of rape on college campuses is committed by men women know (Fisher et al.; Mohler-Kuo et al.). One possible and largely unexplored reason that some men rape women relates to one's level of moral development.

Moral development levels are significantly correlated to a number of variables including racial and gender stereotypes (Killen, Margie, & Sinno, 2006) and levels of physical aggression such as hitting and pushing (Tisak, Tisak, & Goldstein, 2005). In addition, convicted rapists' levels of moral development have been found to be significantly lower than those of non-rapist felons (Wilson, Goodwin, & Beck, 2002). Nevertheless, it remains unclear how levels of moral development and sexually aggressive attitudes of college men who are not convicted rapists interrelate.

The purpose of this study was to assess the relationship between levels of moral development and the degree to which first-year college men endorse rape supportive attitudes. For the purposes of this study, rape supportive attitudes included rape myth acceptance and hypermasculinity. In addition to the aforementioned variables, participants were asked to report their SAT scores as a measure of verbal and quantitative aptitude to determine whether these variables had any influence in

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predicting moral development in combination with the other variables measured. Measuring SAT scores was seen as valuable given that numerous studies have previously reported that moral development is also interrelated with intellectual abilities (see Rest, 1993; Sanders, Lubinski, & Benbow, 1995) and general intelligence (Frey & Detterman, 2004). Largely unexplored in the literature, however, is how intellectual abilities and/or general intelligence might be related to sexually aggressive attitudes within a sample of college men.

In rape prone societies such as the United States, traditional gender roles encourage sexual violence (Murnen, Wright, & Kaluzy, 2002). Masculine ideologies and the endorsement of “macho personalities” particularly encourage sexual assault (Murnen et al., p. 361). Such negative masculine ideologies are supported by behaviors and beliefs that facilitate male initiated sexual aggression and violence directed at women (Locke & Mahalik, 2005).

Reis (1986) hypothesized two important characteristics that connect masculinity to sexual assault utilizing the sociocultural model. First, the endorsement of “macho personality” characteristics (e.g., high risk-taking, accepting physical aggression, casual attitudes about sex) and, second, the belief that women were inferior to men, were both linked to sexual violence committed against women. This connection is important because it began to change researchers’ attitudes about how to investigate the constructs that facilitate sexual aggression. From the sociocultural model emerged a theoretical framework that began to remove the idea of societal constructs to one that described traditional gender roles at the individually constructed level. This theory eventually became known as “traditional sexual script.”

Researchers utilizing traditional sexual script speculated that gender development was different for both males and females

and was one of the main sources of sexual assault (Murnen et al., 2002). For example, girls learned at an early age that they were supposed to follow a series of submissive prescribed gender roles (e.g., being friendly to others, showing concern for the man’s needs, and displaying empathy). Conversely, the socialization of boys taught them to become aggressive, insensitive, and not accept “no” for an answer in sexual situations. Traditional sexual script specified males as having power over sexual relations, thus reducing females to unequal sexual participants. Researchers ascribing to traditional sexual script posited that society reinforced certain negative male characteristics (e.g., sexual power, acceptance of physical aggression, and reduced empathy towards others) and these masculinity traits were the standard by which individual men were equated.

An extreme adherence to masculine gender roles has long been labeled hypermasculinity or a macho personality constellation (Mosher & Sirkin, 1984). Research has shown men with high levels of hypermasculinity report more past acts of both physical aggression and higher sexually aggressive attitudinal levels when compared to those men with lower levels of hypermasculinity (Parrott & Zeichner, 2003). Furthermore, a meta-analysis showed that hypermasculinity and sexually aggressive behavior are significantly correlated with a moderate effect size (Murnen et al., 2002).

Rape myth endorsement has been consistently associated with sexually aggressive behaviors in community and college student populations (Lonsway & Fitzgerald, 1994). Lonsway and Fitzgerald defined rape myths as “attitudes and beliefs that are generally false but are widely and persistently held, and that serve to deny and justify male sexual aggression against women” (p. 134). Specific examples of rape myths include “If a woman doesn’t physically fight back, you can’t really say that

it was rape” and “Many women secretly desire to be raped” (Payne, Lonsway, & Fitzgerald, 1999). Rape myth endorsement also helps men rationalize their sexually aggressive behaviors (DeGue & DiLillo, 2004; Gerber & Cherneski, 2006).

Moral Development

Kohlberg (1970) developed a theory of moral development that focused on how individuals develop as their interpretations of society’s rules and expectations change. His theory focused on how individuals come to make moral judgments in reaction to their view of the world by studying how college men describe their reactions to hypothetical moral dilemmas. He used data coding techniques to transcribe the interviews, paying particular attention to the reasoning participants gave for deciding a particular course of action when confronted with a moral dilemma (Colby & Kohlberg, 1987).

Kohlberg (1970) viewed justice as the central component of moral judgment. Kohlberg (1970) posited that as an individual is able to take the perspective of others (put oneself in the position of understanding what someone else is thinking, feeling, etc.) the individual becomes cognitively ready for higher moral development stage progression. Although a necessary component, perspective taking does not guarantee moral development progression, but rather it appears to arbitrate the process (Colby & Kohlberg, 1987; Rest, Narvaez, Thoma, & Bebeau, 2000). Higher stages of moral development are desirable because individuals can comprehend, respond to, and make use of all the previous stages when confronted with moral dilemmas. These stages are most often measured through the Defining Issues Test (hereafter referred to as DIT) which emerged as a reliable alternative to previously used complex interview procedures (Rest, Narvaez, Bebeau, & Thoma, 1999).

A limited number of studies have attempted to connect moral development to issues related to sexual assault. For example research has shown that convicted rapists are significantly more likely to display lower levels of moral development and more rape-supportive attitudes when compared to non-rapist adult men in Australia (Wilson et al., 2002). Researchers have also investigated the correlation between level(s) of moral development and self-reported sexually aggressive *behaviors* of male college students (Leister, 1999); however, no relationship between these two variables was found.

Research Questions

Because there was an absence of literature specifically pertaining to the linkage(s) of moral development and known sexually aggressive attitudes (i.e., rape myth endorsements and hypermasculinity) within a sample of college men, research questions 1 and 2 were analyzed. In addition, because there is some limited evidence to suggest that SAT scores are sufficient proxy measures for intellectual abilities and/or general intelligence, and it was unknown how this might be interrelated with moral development and sexually aggressive attitudes, research questions 3 and 4 were also analyzed.

1. What is the relationship between levels of rape myth endorsements and levels of moral development in first-year college men?
2. What is the relationship between levels of hypermasculinity and levels of moral development in first-year college men?
3. To what extent do assessed levels of rape myth endorsements, levels of hypermasculinity, and quantitative/verbal SAT scores interrelate with levels of moral development in first-year college men?
4. To what extent does each subscale(s) of Illinois Rape Myth Acceptance Scale

(IRMA), levels of hypermasculinity, and quantitative/verbal SAT scores interrelate with levels of moral development in first-year college men?

METHOD

This study used a correlation research design. Multiple regression and correlation (MRC) statistical analysis describes how levels of moral development, rape myth endorsements, hypermasculinity, and SAT scores are interrelated. The rationale for collecting these particular data and then subjecting them to multiple regression statistical analysis was to gain insight into the interrelationships of each variable so that researchers and rape prevention programmers can obtain a better understanding of male perpetrated sexual aggression.

Level of moral development (measured by the DIT) was the dependent variable for this study. There were four main independent variables: (a) rape myth acceptance (measured by the IRMA), (b) hypermasculinity (measured by the Hypermasculinity Inventory), (c) SAT verbal score, and (d) SAT quantitative score. Three one-way ANOVAs were used to test for instrument order effects for each survey version comparing mean scores of the DIT, IRMA, and Hypermasculinity Inventory.

Participants

All first-year college men who were 18 years old or older and who accepted an invitation to attend the higher education institution where the study took place were solicited for participation ($N = 513$). Participants' mean age was 18.5 years ($SD = .29$). The racial breakdown of participants was 75% Caucasian, 12% Asian, 6% Hispanic/Latino, 2% African American/Black, 2% Native American/Alaskan Native, and 4% undisclosed.

Materials

We designed four versions of a Web-based questionnaire by incorporating all items from the DIT-Short Form (DIT-SF; Rest, 1993), the IRMA (Payne et al., 1999), and the Hypermasculinity Inventory (Mosher & Sirkin, 1984). In addition, we solicited demographic information (i.e., participant's age, race, verbal SAT score, and quantitative SAT score).

Defining Issues Test-Short Form

The DIT-SF measures moral judgment as defined by Kohlberg (1976). However, the DIT differs from Kohlberg's theoretical framework in that "instead of scoring free-responses to hypothetical moral dilemmas in an interview (as in the Kohlberg procedure), the DIT presents 12 issues" (Rest & Narvaez, 1998, p. 27) that participants rate and rank in terms of their perceived importance after reading three hypothetical moral dilemmas (i.e., Heinz, newspaper, and prisoner dilemmas). Once the participants completed the DIT, a P score was calculated according to procedures found within the scoring manual (Rest & Narvaez). The P score represents the proportion or percentage of postconventional moral reasoning that participants used when confronted with each hypothetical moral dilemma. According to Rest (1993) and Rest and Narvaez, the technical quality of the DIT is well established including test-retest reliability of .77, Cronbach alpha of .77, validity shown through longitudinal gains over a 10-year period as would be expected through maturation, and 37 studies showing that DIT scores are linked to prosocial behaviors.

Illinois Rape Myth Acceptance Scale

The IRMA (Payne et al., 1999) contains 45 total items on a 7-point Likert-type scale from 1 (*Not at All Agree*) to 7 (*Very Much Agree*).

Forty items are known rape myths; five are filler items. Respondents rate their level of agreement with several of the following types of rape myths: "If the rapist doesn't have a weapon, you really can't call it a rape" (Payne et al., p. 49). Scores on the IRMA range from 40 (Not at all agree with any of the rape myths) to 280 (Very much agree with all the rape myths). The IRMA also includes the following seven subscales: (a) She Asked For It, (b) It Wasn't Really Rape, (c) He Didn't Mean To, (d) She Wanted It, (e) She Lied, (f) Rape Is A Trivial Event, (g) and Rape Is A Deviant Event.

Payne et al. (1999) reported subscale Cronbach alphas ranged from .74 to .84 and averaged .79. Correlates of each subscale with total IRMA scale ranged from .54 to .74. Item-to-subscale correlations ranged from .41 to .72. In addition, item-to-total-scale correlations ranged from .31 to .68 (Payne et al.). Internal consistency was established with a reported Cronbach alpha of .93 (Payne et al.). In addition, test-retest reliability was indicated. Test-retest reliability for the IRMA was assessed by correlating participant's responses to a random subset (20%) of the original items ($r = .90, p < .001$). Construct validity is supported by researchers using numerous instruments and variables that have known theoretical and/or empirical relationships to rape myths (Payne et al.). Specifically, evidence suggested that IRMA correlated significantly ($p < .001$) with the following instruments: Sex-Role Stereotyping scale ($r = .55$); Sexism scale ($r = .63$); Adversarial Sexual Beliefs scale ($r = .74$); Hostility Towards Women scale ($r = .57$); Acceptance of Interpersonal Violence scale ($r = .71$); and the Attitudes Towards Violence scale ($r = .50$).

Hypermasculinity Inventory

Hypermasculinity, otherwise referred to as macho personality constellation, was measured with the Hypermasculinity Inventory (Mosher

& Sirkin, 1984). This instrument contains 30 forced-choice response items. One example of an item from this component of the inventory is, "He who can fight; he who can't runs away" (Mosher & Sirkin, p. 155).

Internal validity of the measure was shown through a principal axis factor analysis that revealed "a single, predominant, latent variable that was relatively homogenous and which was named the macho personality pattern" (Mosher & Sirkin, 1984, p. 154). Reliability was shown through a Cronbach alpha of .91 (Parrott & Zeichner, 2003).

Procedures

Once the Institution Review Board approved this study, a list of all in-coming (academic year 2007-2008) first-year men's e-mail addresses was requested from the College's Dean of Student's Office. An invitation and two reminders to participate in the study were sent via e-mail. In addition to the invitation to participate, the e-mail also provided participants with an embedded Web-link to the site that hosted the survey. Procedures were constructed so that once participants opened the survey, they were provided with a consent form, followed by detailed instructions on how to complete the questionnaire. In order to control for instrument order effects, participants were randomly selected to complete one of four versions of the Web-based questionnaires. Finally, as an incentive to participate, participants' names were entered into a random prize drawing. Incentives for participation included one \$100 gift card, three \$50 gift cards, and five \$25 gift cards.

Though a multicampus study would have been more generalizable, a lack of funding and human resources precluded such an effort. The decision was made to survey first-year students immediately prior to their arrival on the campus where the study took place. This decision was made because all first-year

men on this particular campus take part in a program during first-year student orientation that has been shown to lower men's rape myth acceptance (Foubert & Newberry, 2006). Given that this was one of the variables being measured by our study, we did not want such a change to take place prior to measuring all of our variables. In addition, first-year men are more likely to have more rigid categorical thinking (Baxter-Magolda, 1995), believe more rape myths (Lonsway & Fitzgerald, 1994), and have not yet experienced the liberalizing effects on their values that are commonly experienced with a college education (Pascarella & Terenzini, 2005). Thus, we chose first-year men for our study because we expected that they would not be prone to the floor effects sometimes found with rape myth acceptance and hypermasculinity scales.

Stepwise multiple regressions were carried out using the measure of moral development (as the dependent variable) and the independent variables of (a) rape myth endorsements, (b) hypermasculinity, and (c) SAT verbal and quantitative scores. In addition, once the total IRMA score was found to be significantly interrelated within the initial model (i.e., Question 3), an additional MRC was analyzed that included each subscale of IRMA. All alpha levels for MRC were set *a priori* to .05.

RESULTS

Of the 626 study invitations sent, 513 men were eligible to participate (i.e., 18 years or older) in the study. In addition, of the original 626 study invitations sent, 256 (41%) first-year men logged into the Website and answered at least one question on the survey. Instrument protocols from 37 (15%) men were dropped from the study because they responded to fewer than the recommended 85 percent of total questions (George & Mallory, 2006). Using Rest's (1986) scoring

guidelines and pre-existing DIT subject reliability checks resulted in the subsequent removal of additional instrument protocols: 36 (14%) protocols were removed for failing the DIT Meaningless Score (M score) check; 10 (4%) instrument protocols were removed for failing the DIT Consistency Check. It is typical during DIT reliability checks, however, to remove up to 15% of sample protocols during the M score calculations and also again during the consistency checks (Rest, 1993). Finally, 12 (5%) instrument protocols were removed from any data analysis because the participants indicated they were younger than 18 years old.

The total usable yield of surveys was 161 (63%) of the original 256 respondents. In other words, 31% ($N = 161$) of the *eligible* in-coming first-year college men ($N = 513$) completed enough questions and passed all necessary DIT subject reliability checks to be included in the data analysis. Participants' mean age was 18.5 years ($SD = .29$). The racial breakdown of participants was 75% Caucasian, 12% Asian, 6% Hispanic/Latino, 2% African American/Black, 2% Native American/Alaskan Native, and 4% undisclosed. Relative to the university population, Asian students were slightly overrepresented and African-American/Black students were underrepresented. A one-sample t test indicated that on average respondents for this study had significantly higher SAT verbal scores ($M = 693$; $SD = 62$), $t(160) = 4.201$, $p < .01$ (two-tailed), when compared to the whole population of first-year men ($M = 672$). Respondents' quantitative SAT scores had a mean of 688 ($SD = 61$) and was significantly higher, $t(160) = 2.814$, $p < .01$ (two-tailed), than the whole population ($M = 674$; $SD = 59$).

The dependent variable for this study was measured using the calculated P score from the short version of the DIT (Rest, 1986). The average P score for respondents from

this sample was 40.33 ($SD = 17.30$). Internal consistency for the DIT from this study sample was Cronbach $\alpha = .76$.

Internal consistency for the Hypermasculinity Scale from this sample was Cronbach $\alpha = .83$. Internal consistency for total IRMA scores from this sample was Cronbach $\alpha = .93$. Results from one-way ANOVAs indicated that instrument order effects did not have a significant influence on the results ($p > .05$).

The first research question sought to establish whether there was a significant relationship between levels of rape myth endorsements and moral development. A one-tailed Pearson correlation indicated that there was a significant negative correlation between the two variables ($r = -.231, p < .01$).

The second research question sought to establish whether levels of hypermasculinity and moral development were significantly interrelated. Analysis from this one-tailed Pearson correlation, however, indicated the two variables were not significantly interrelated ($r = -.056, p > .05$).

The third and fourth research questions were both answered using stepwise multiple regression analysis. For research question 3, multiple regression analysis results indicated that SAT verbal scores and total IRMA scores accounted for 8.8% of the variance found within moral development P scores. All other independent variables were excluded from the data model. After finding significance in question 3, question 4 sought to establish which subscale(s) of the IRMA instrument, in combination with SAT verbal scores, would result in the best model. Results from this analysis indicated that the IRMA subscale, It Wasn't Really Rape (IRMANR), and SAT verbal scores accounted for 10% of the shared variance within P scores.

Prior to conducting the multiple regression analysis independent variables were evaluated for collinearity. Data analysis revealed two

pairs of variables that were significantly correlated: IRMA and Hypermasculinity Inventory, $r = .303, p < .01$; and SAT verbal and SAT quantitative, $r = .299, p < .01$. Using the guidelines suggested by George and Mallory (2006) as indicators of excessive interdependency, none of the correlations were greater than $r = .5$.

Table 1 summarizes the individual regression coefficients for the two significant data models. As depicted in Table 2, a linear combination of two, out of the original four, variables resulted in the best model to predict P scores. The best model indicated that there were two significant independent variables: scores from the SAT Verbal and total scores from the IRMA (IRMATtl), $R^2 = .10, F(2, 158) = 8.747, p < .01$. The adjusted R^2 for this model was .088, which indicated the two variables combined to account for 8.8% of the variance in P scores. In addition, SAT verbal ($\beta = .216$) and IRMATtl ($\beta = -.214$) had moderate effect sizes. Independent variables excluded from the model were the Hypermasculinity Inventory (HyperTtl) and SAT quantitative (SAT Quant) scores.

Research question 4 was proposed only if the total IRMA score was significantly interrelated within research question 3. Because the total IRMA scores added significantly to the model this question was analyzed. Prior to conducting stepwise multiple regression analysis, all independent variables were evaluated for collinearity. Each individual IRMA subscale significantly correlated with all other IRMA subscales. This finding is not surprising because each subscale from the IRMA instrument was designed to measure a component of rape myths, and when combined they were designed to measure the overall general nature of rape myths (Payne et al., 1999). Nevertheless, several pairs of subscales were significantly related above $r = .5$. Correlates above $r = .5$ suggest

TABLE 1.
Summary of Stepwise Multiple Regression Analysis
for Variables Predicting *P* Score (*N* = 161)

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	Sig.	VIF
<i>Step 1</i>						
SAT verbal	.064	.021	.233	3.016	.003	1.000
<i>Step 2</i>						
SAT verbal	.060	.021	.216	2.856	.005	1.006
IRMATtl	-.127	.045	-.214	-2.828	.005	1.006

Note. Excluded variables were scores from the Hypermasculinity Inventory (HyperTtl) and SAT quantitative scores (SAT Quant).

an interdependency level that could be problematic (George & Mallory, 2006). Upon completing further analysis these concerns were alleviated. The lowest tolerance level was .990 and the highest reported VIF was 1.002. Tolerance levels lower than .2, and VIFs greater than 5, would have further indicated there was a potential problem with interdependency between independent variables. Although there were *r* values greater than .5, taking into consideration tolerance levels and VIFs, linear dependency between the independent variables was not indicated as problematic for the multiple regression analysis.

Stepwise multiple regression analysis was used to test for the best model for how specific IRMA subscales and SAT verbal scores influenced respondents' *P* scores. The following eight independent variables

were included within the stepwise multiple regression analysis: (a) SAT verbal scores; (b) IRMASA, She Asked For It; (c) IRMANR, It Wasn't Really Rape; (d) IRMAMT, He Didn't Mean To; (e) IRMAWI, She Wanted It; (f) IRMALI, She Lied; (g) IRMATE, Rape Is A Trivial Event; and (h) IRMADE, Rape Is A Deviant Event. Depicted in Table 3 is the linear combination of two independent variables that resulted in the best model to predict *P* scores. In addition, all β s were considered to have a moderate magnitude of effect.

Two of the original eight independent variables resulted in the best model to predict *P* scores (Table 4). The two variables indicated as significant contributors were the IRMA subscale, It Wasn't Really Rape (IRMANR), and SAT verbal scores, $R^2 = .11$, $F(2, 158) = 9.911$, $p < .01$. Both IRMANR ($\beta = -.240$) and SAT

TABLE 2.
Model Summary for Stepwise Multiple Regression Analysis
for Variables Predicting *P* Scores (*N* = 161)

Model	<i>R</i>	R^2	Adj. R^2	$R^2\Delta$	<i>F</i>	Sig.
1 ^a	.233	.054	.048	.054	9.094	.003
2 ^b	.316	.100	.088	.046	8.747	.005

^a Predictors: (Constant) SAT Verbal.

^b Predictors: (Constant) SAT verbal, IRMATtl score.

TABLE 3.
Summary of Stepwise Multiple Regression Analysis
for Variables Predicting *P* Scores (*N* = 161)

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	Sig.	VIF
<i>Step 1</i>						
IRMANR	-1.235	.381	-.249	-3.242	.001	1.000
<i>Step 2</i>						
IRMANR	-1.189	.372	-.240	-3.194	.002	1.002
SAT verbal	0.062	.021	.223	2.966	.003	1.002

Note. Excluded variables were IRMASA, IRMAMT, IRMAWI, IRMALI, IRMATE, and IRMADE.

verbal scores ($\beta = .223$) had moderate effect sizes. The adjusted R^2 for this model was .10, indicating these two independent variables accounted for 10% of the shared variance in *P* scores. This stepwise multiple regression analysis resulted in all other IRMA subscales being excluded from the model.

DISCUSSION

The purpose of this study was to investigate how levels of moral development, rape myth endorsements, hypermasculinity, and SAT scores were interrelated within a sample of first-year college men. We found that as respondents' levels of rape myth endorsement increases, assessed levels of moral development decreases.

Interpretation of the calculated coefficient of determination indicates that approximately 5% of the common variance was shared between the two variables for this study. With such a low reported shared variance one must consider the possibility that additional variable(s) also co-occur with this phenomenon. Findings for the first research question are, however, consistent with similar studies. For example, Wilson et al. (2002) previously established that levels of moral development and rape myth endorsements were likewise significantly and negatively correlated ($r = -.52$) in a sample of Australian men convicted of rape. Thus, evidence from the Wilson et al. study also indicates that as moral development levels increased, the tendency to endorse rape myths decreased.

TABLE 4.
Model Summary for Stepwise Multiple Regression Analysis with IRMA Subscales
and SAT Verbal Scores for Predicting *P* Scores

Model	<i>R</i>	R^2	Adj. R^2	$R^2 \Delta$	<i>F</i>	Sig.
1 ^a	.249	.062	.056	.062	10.508	.001
2 ^b	.334	.111	.100	.049	9.911	.000

^a Predictors: (Constant) IRMANR.

^b Predictors: (Constant) IRMANR, SAT verbal.

The amount of shared variance found within the Wilson et al. (2002) sample, however, was 27%. Thus, the reported amount of shared variance for the Wilson et al. study is approximately 22% greater than the variance found within sample in this study. One explanation for the difference could be that the mean DIT scores for the Wilson et al. sample were much lower than those in the present study. In addition, Wilson et al. posited that results from their study may have been attenuated by floor effects. Taking into consideration the lower DIT scores, the disclosure of possible floor effects, and the fact that men from the sample were convicted rapists could help explain the large differences between the Wilson et al. study and the present research results, which are the first such findings taken from a population of college men. Linking these two constructs in a college sample has important implications for researchers and programmers, providing them a more complete framework for understanding how the phenomenon of rape myth endorsements and moral development are related.

The second research question investigated the relationship between participants' levels of hypermasculinity and their respective levels of moral development. Contrary to the hypothesis, there was no statistically significant relationship present within the sample. There are several possible reasons why hypermasculinity and moral development were not found to significantly correlate within this study. The most obvious reason for nonsignificant correlations could be as simple as the two variables are in fact not related; thus, the results for this particular sample are representative of the true nature of the phenomenon. Another possibility for nonsignificant results, however, could be that men who participated in this study are *less* hypermasculine than college men reported in previous research articles. There is evidence

in the literature to support this notion. For example, college men from Parrott and Zeichner's (2003) study reported higher mean hypermasculinity scores ($M = 9.40$, $SD = 5.7$) when compared to college men for this study ($M = 7.07$, $SD = 4.87$). With evidence such as this, one must consider the possibility that men from the present sample are less hypermasculine on average than other college men.

The third research question assessed how levels of rape myth endorsements, hypermasculinity, and scores from both the quantitative and verbal sections of the SAT were interrelated with moral development within the sample of college men. The results clearly demonstrate that two out of the original four variables, rape myth endorsement total scores and scores from the verbal section of the SAT, combine to significantly predict respondents' moral development scores. In addition, when combined, both rape myth endorsements levels and SAT verbal scores account for nearly 9% of the variance in respondents' moral development levels. The fact that SAT verbal scores were significant predictors in the regression model is not surprising. In fact, numerous studies have previously reported that moral development is also interrelated with intellectual abilities (see Rest, 1993; Sanders et al., 1995). Researchers agree that there is a relationship between SAT scores and general intelligence (see Frey & Detterman, 2004). Unique to this study is the combination of IRMA scores and SAT verbal scores as significant predictors of moral development.

When we added the subscales of the IRMAS into a regression two variables significantly combined to predict respondents' moral development scores: It Wasn't Really Rape (IRMANR), and SAT verbal scores. When combined, these two variables accounted for 10% of the variance found within moral development scores from the sample. All other subscales were nonsignificant contributors and

were thus excluded from any further analysis related to that model.

The findings related to questions 3 and 4 provide additional information to researchers who work with sociocultural theory and its outgrowth, traditional sexual script (Murnen et al., 2002; Reis, 1986). This study provides further support for the validity of the theory of traditional sexual script. Part of a traditional sexual script is a constellation of beliefs identified by many researchers as rape myths (Lonsway & Fitzgerald, 1994). The present study identified a particular cluster of rape myths, *It Wasn't Really Rape (IRMANR)*, as especially vicious. Identifying this contributing variable as part of the traditional sexual script adds precision to the theory and its constructs and helps practitioners identify promising areas for prevention education.

The endorsement of the macho personality or hypermasculine component of the sociocultural model was not supported by this study. This could be because rape myth acceptance is a more salient characteristic toward predicting moral development scores and other variables measured in this study. It could also be that the lower levels of hypermasculinity found in the sample used in this study compared to national norms did not yield the same overall results that otherwise would have emerged with a sample drawn from one consistent with national norms.

Implications for Practice

Results from this study could be used to further refine sexual aggression education efforts by directing more intervention efforts on this specific category of rape myths. In particular, education and intervention efforts should be used to address the category of rape myths contained within the IRMA subscale, *It Wasn't Really Rape*.

Along with sexual assault educators, service learning coordinators and other student

affairs professionals could also benefit from the present findings. For instance, there is research to suggest that moral development education interventions are effective at positively influencing moral development levels (see Killen & Smetana, 2006). Moral development levels are also positively influenced by service learning (Nucci, 2006). Service learning programmers, therefore, could ensure that opportunities for men to participate in programs directly related to sexual aggression are provided on their respective campuses. Students could be advised to seek out service learning opportunities within campus and community sexual aggression crises centers, peer education programs, or other related experiences. The benefits of targeting rape related service learning opportunities are arguably twofold: (a) moral development is likely positively impacted and (b) negative sexually aggressive attitudes reduced.

Another implication for practitioners is the notion of the need for early moral related education interventions. Numerous studies have indicated the positive impact of both nonformal (i.e., noncredit-bearing workshops/classes) and formal (i.e., higher education credit-bearing classes) moral related education interventions on college students' use of postconventional moral reasoning (see King & Mayhew, 2002). It could be logically argued, therefore, that because moral development levels are positively influenced by both formal and nonformal education interventions, and moral development is significantly interrelated with rape myth endorsements within this study sample, education interventions should be scheduled sooner, rather than later, for college men.

Recommendations and Suggestions for Future Research

The results of this study suggest a number of areas deserving of further research efforts.

For example, using a population with greater racial diversity and a more normal distribution of SAT scores and hypermasculinity should be undertaken in order to more confidently generalize these results. Because this study was conducted using men from only one college, it might also prove beneficial for additional studies to be conducted using men from various types/kinds of campuses with different institutional characteristics. Investigations into the impact of institutional characteristics between historically Black colleges or universities, community colleges, land-grant institutions, and private colleges/universities could prove useful when trying to learn whether findings from the present study remains true across different populations of students.

A study using qualitative research techniques might also provide beneficial research findings. For example, a mixed-methods research design could prove useful to researchers by using the DIT and IRMA as instruments to help identify unique cases of men. After collecting the quantitative portion of data (DIT and IRMA), unique men could then be invited to participate in a phenomenological study that investigated underlying reasons for this phenomenon. The intent of conducting a phenomenological study of this kind would be to understand how the “lived experiences” of participants supported or reinforced their moral development and endorsements of certain rape myths (Rossman & Rallis, 2003, p. 93). In addition, men with low levels of rape myth endorsements and high moral development could provide insight into how their lived experiences may have influenced their own positive attitudes. Having men participate in a study of this design would provide examples of contrasting attitudes, and it might provide valuable insight into the underlying reasons why some men do, and some men do not, ascribe to certain sexually aggressive attitudes and beliefs.

Limitations of Study

There are limitations associated with this study. For example, correlation research designs cannot establish cause-and-effect relationships among variables (Gall, Gall, & Borg, 2003). Correlation research designs can establish the degree to which variables are interrelated, but they cannot *prove* whether one variable truly causes the other. The results of this study, therefore, show the degree to which the dependent and independent variables are interrelated. They do not, however, prove a cause-and-effect relationship. In short, rape myth endorsements and moral development were significantly interrelated, however, this does not prove one causes the other.

A second study limitation is the use of research participants from only one institution. This includes the homogeneity of the sample, with participants with high SAT scores and other highly competitive precollege attributes. The results of this study, therefore, have limited value in generalizing to a larger population beyond this one particular college. In fact, students from this institution may exhibit their own unique patterns of moral development and sexually aggressive attitudes. For example, as previously discussed above (see research question 2), Parrott and Zeichner's (2003) recent study indicated that their sample of college men reported higher levels of hypermasculinity than did those reported within this sample.

A third limitation is the reliance on participants' self-reporting of data. This is viewed as a limitation for several reasons. Specifically, participants could have confounded the study by providing misleading or false information (Gall et al., 2003). Conducting research on rape supportive attitudes, however, could not be conducted without relying on self-reported measures. Using self-reported measures facilitated the ability to learn the participants'

attitudes and beliefs, all the while conducting the research in an ethical manner.

A fourth limitation was the overall useable response rate. The overall response rate was greatly influenced by the number of research protocols removed from data analysis. Using the scoring guidelines established by Rest (1986), 36 protocols were removed because they failed the *M* score checks and 10 were removed because they failed the DIT consistency check. In addition, 12 protocols were removed because analysis of participants' demographic data indicated some respondents were in fact minors (i.e., younger than the required 18 years of age). Removing protocols from any data analysis obviously reduces the statistical power to detect differences. As with all reduction in statistical power, this could be viewed as a limitation of the study. Conducting the research in an ethical manner, however, could not have been accomplished otherwise—especially when one considers the necessity to remove and destroy all protocols submitted by minors.

Finally, a fifth limitation of this study was a restriction of range with three particular variables. Specifically, verbal/quantitative SAT scores and *P* scores from the DIT were restricted in the range of scores within this sample. For example, the mean SAT verbal scores from the present sample were 692.69 ($SD = 62.48$) and the quantitative SAT scores were 688.18 ($SD = 61.83$). The reported national average for verbal ($M = 500$, $SD = 100$) and quantitative ($M = 500$, $SD = 100$) SAT scores are substantially lower (College Board, 2005) than men's scores in the present study. *P* scores from the present sample were also restricted in range. For example, Rest (1986) reported normed scores from senior high school men as much lower ($M = 28.7$, $SD = 11.8$) than were men's *P* scores from the present sample ($M = 40.33$, $SD = 17.30$). Because the average verbal/quantitative SAT

scores and *P* scores from this sample were noticeably higher than the reported norm, one must consider the possibility that results from this sample are atypical for these variables. In fact, it is reasonable to assert that had there been a broader range of scores within the present sample there would have been a stronger relationship among the variables. Future researchers should mitigate this limitation by utilizing study samples that contain a larger mix of varying demographic characteristics.

CONCLUDING COMMENTS

The literature is furthered because there is now evidence to suggest the specific category of rape myths (i.e., "It wasn't really rape") associated with predicting levels of moral development. Looking at the connection between sexually aggressive attitudes (i.e., rape myth endorsements and hypermasculinity) and levels of moral development within college men is unique to this study. The present study helps sexual assault researchers to better understand the etiology of sexually aggressive attitudes. We found that a specific category of rape myth endorsements is significantly linked to moral development levels. Conversely, results from this study also indicated that hypermasculinity was not a significant factor in relation to moral development in our sample. Using this information, researchers and programmers alike should capitalize on this study's findings and subsequently design and carry out future studies by including the most promising variables and excluding those that are not likely to yield new information. The results of the present research thus allow the field to move somewhat closer toward the ultimate goal—to eventually remove *all* sexual aggression from our college campuses. This study assists in this goal by providing a useful framework for understanding that rape myth endorsements are at least partially

responsible for the variance within moral development levels of college men within this study sample.

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REFERENCES

- Baxter-Magolda, M. B. (1995). The integration of relational and impersonal knowing in young adult's epistemological development. *Journal of College Student Development, 36*, 205-216.
- Colby, A., & Kohlberg, L. (1987). *The measurement of moral judgment: Volume 1, theoretical foundations and research validation*. New York: Cambridge University Press.
- College Board. (2005). *Education pays update: A supplement to education pays 2004—The benefits of higher education for individual and society*. Retrieved April 28, 2007 from http://www.collegeboard.com/prod_downloads/press/cost05/education_pays_05.pdf
- DeGue, S. A., & DiLillo, D. (2005). "You would if you loved me": Toward an improved conceptual and etiological understanding of nonphysical male sexual coercion. *Aggression and Violent Behavior, 10*(4), 513-532.
- Fisher, B., Cullen, F., & Turner, M. (2000). *The sexual victimization of college women* (NJC 182369). Washington DC: U.S. Department of Justice.
- Foubert, J. D., & Newberry, J. T. (2006). Effects of two versions of an empathy-based rape prevention program on fraternity men's rape survivor empathy, rape myth acceptance, likelihood of raping, and likelihood of committing sexual assault. *Journal of College Student Development, 47*(2), 133-148.
- Frey, M. C., & Dettmerman, D. K. (2004). Scholastic assessment?: The relationship between the scholastic assessment test and general cognitive ability. *Psychological Science, 15*(6), 373-378.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research: An introduction* (7th ed.). Boston: Pearson Education.
- George, D., & Mallery, P. (2006). *SPSS for Windows, Step by Step: A Simple Guide and Reference* (6th ed.). Boston: Pearson Education.
- Gerber, G. L., & Cherneski, L. (2006). Sexual aggression toward women: Reducing the prevalence. *Annals of the New York Academy of Science, 35*(46), 35-46.
- Killen, M., Margie, N. G., & Sinno, S. (2006). Morality in the context of intergroup relationships. In M. Killen & J. G. Smetana (Eds.), *Handbook of moral development* (pp. 155-184). Mahwah, NJ: Lawrence Earlbaum Associates.
- Killen, M., & Smetana, J. G. (Eds.), *Handbook of moral development*. Mahwah, NJ: Lawrence Earlbaum Associates.
- King, P. M., & Mayhew, M. J. (2002). Moral judgement development in higher education: Insights from the Defining Issues Test. *Journal of Moral Education, 31*(3), 247-270.
- Kohlberg, L. (1970). Education for justice, a modern statement of the Platonic view. In N. F. Sizer (Ed.), *Moral education*, (pp. 57-81). Boston: Harvard University Press.
- Kohlberg, L. (1976). Moral stages and moralization: The cognitive-developmental approach. In T. Lickona (Ed.), *Moral development and behavior: Theory, research, and social issues* (pp. 31-53). New York: Holt, Richard & Winston.
- Leister, K. D. (1999). The relationship between sexual aggression and moral development in a sample of college males. *Dissertation Abstracts International* (UMI No. 9934446).
- Locke, B. D., & Mahalik, J. R. (2005). Examining masculinity norms, problem drinking, and athletic involvement as predictors of sexual aggression in college men. *Journal of Counseling Psychology, 52*(3), 279-283.
- Lonsway, K. A., & Fitzgerald, L. F. (1994). Rape myths. In review. *Psychology of Women Quarterly, 18*, 133-164.
- Mohler-Kuo, M., Dowdall, G. W., Koss, M. P., & Wechsler, H. (2004). Correlates of rape while intoxicated in a national sample of college women. *Journal of Studies on Alcohol, 65*(1), 37-45.
- Mosher, D. L., & Sirkin, M. (1984). Measuring a macho personality constellation. *Journal of Research in Personality, 18*, 150-163.
- Murnen, S., Wright, C., & Kaluzny, G. (2002). If "boys will be boys," then girls will be victims? A meta-analytic review of the research that relates masculine ideology to sexual aggression. *Sex Roles, 46*(11/12), 359-375.
- Nucci, L. (2006). Educating for moral development. In M. Killen & J. Smetana (Eds.), *Handbook of moral development*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Parrott, D. J., & Zeichner, A. (2003). Effects of hypermasculinity on physical aggression against women. *Psychology of Men and Masculinity, 4*(1), 70-78.
- Payne, D. L., Lonsway, K. A., & Fitzgerald, L. F. (1999). Rape myth acceptance: Exploration of its structure and its measurement using the Illinois Rape Myth Acceptance Scale. *Journal of Research in Personality, 33*, 27-68.
- Pascarella, E., & Terenzini, P. (2005). *How college affects students: A third decade of research* (Volume 2). New York: Jossey Bass.
- Reis, I. L. (1986). *Journey into sexuality: An exploratory voyage*. Englewood Cliffs, NJ: Prentice Hall.
- Rest, J. R. (1986). *DIT Manual*. Minneapolis, MN; Center for the Study of Ethical Development.
- Rest, J. R. (1993). *Guide for the Defining Issues Test*. Minneapolis, MN: Center for the Study of Ethical Development.
- Rest, J. R., & Narvaez, D. (1998). *Supplement to guide for the DIT-1*. Minneapolis, MN: Center for the Study of Ethical Development.
- Rest, J. R., Narvaez, D., Bebeau, M. J., & Thoma, S. J. (1999). *Post conventional moral thinking: A neo-Kohlbergian approach*. Mahwah, NJ: Lawrence Earlbaum Associates.
- Rest, J. R., Narvaez, D., Thoma, S. J. & Bebeau, M. J. (2000). A Neo-Kohlbergian approach to morality research. *Journal of Moral Education, 29*(4), 381-395.
- Rossman, G. B., & Rallis, S. F. (2003). *Learning in the field: An introduction to qualitative research* (2nd ed.). London: Sage.
- Sanders, C. E., Lubinski, D., & Benbow, C. P. (1995). Does the Defining Issues Test measure psychological phenomena distinct from verbal ability?: An examination of Lykken's query. *Journal of Personality and Social Psychology, 69*(3), 498-504.
- Tisak, M. S., Tisak, J., & Goldstein, S. E. (2005). Aggression, delinquency, and morality: A social-cognitive perspective. In M. Killen & J. G. Smetana (Eds.), *Handbook of moral development* (pp. 7-36). Mahwah, NJ: Lawrence Earlbaum Associates.
- Wilson, C., Goodwin, S., & Beck, K. (2002). Rape attitude and behavior and their relationship to moral development. *Psychiatry, Psychology, and Law, 9*(1), 85-95.