

Summer 2016

# Exploring the Psychometric Properties of the Acceptance of Modern Myths about Sexual Aggression (AMMSA) Scale

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# EXPLORING THE PSYCHOMETRIC PROPERTIES OF THE ACCEPTANCE OF MODERN MYTHS ABOUT SEXUAL AGGRESSION (AMMSA) SCALE

by

LISA CAMILLE WATSON

(Under the direction of Amy A. Hackney)

## ABSTRACT

College-aged women are within the highest risk group of women (18 to 25 years old) to experience sexual assault. Nineteen percent of college women report experiencing attempted or completed sexual assault during their four years of college (Krebs, Linquist, Warner, Fisher, & Martin, 2009). It is estimated that 20 to 25% of college women will experience an attempted or completed sexual assault during college (American College Health Association, 2008). The primary sexual assault prevention method on college campuses has been in the form of education (Centers for Disease Control and Prevention, 2004) with an emphasis on debunking commonly held false attitudes and beliefs about rape, or “rape myths,” that historically blame victims and vindicate perpetrators of sexual assault (Brownmiller, 1975; Burt, 1980). The use of rape myth acceptance (RMA) measures has played an important role in sexual assault research.

Measurement problems in older RMA measures, however, have been noted, (Gerger, Kley, Bohner, & Siebler, 2007) making it unclear how accurately older RMA measures are capturing RMA levels. The Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale, a newer measure, offers more robust psychometric properties than older RMA measures that may serve to improve the efficacy of campus sexual assault prevention interventions. The primary purpose of this study was to explore the psychometric properties of the AMMSA scale with a

Southeastern U.S. college sample. The secondary purpose of the study was to compare levels of RMA between female sexual assault victims and non-victims and to examine whether the associations between RMA and sociocultural attitudes depend upon victimization status. Participants in the study included 367 undergraduate students who anonymously completed an online survey. Results indicated that the AMMSA scale demonstrates good psychometric properties. Female victims and non-victims scored similarly in RMA and sociocultural attitudes. Multiple regression analyses indicated that the relationships between the AMMSA scale and the sociocultural variables did not depend upon victimization status. This study provides important implications for researchers conducting sexual assault prevention research and for clinicians working with victims and their families.

**INDEX WORDS:** rape myth acceptance, sexual violence, sexual assault, rape myths, scale validation, cultural adaptation, test adaptation, victims and non-victims

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MYTHS ABOUT SEXUAL AGGRESSION (AMMSA) SCALE

by

LISA CAMILLE WATSON

B.A., Wheaton College, 1998

M.P.H., Emory University, 2008

M.S., Georgia Southern University, 2014

A Dissertation Submitted to the Graduate Faculty of Georgia Southern University in

Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PSYCHOLOGY

STATESBORO, GEORGIA

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LISA CAMILLE WATSON

Major Professor: Amy Hackney  
Committee: Nick Holtzman  
Jeff Klibert  
Ishtar Govia

Electronic Version Approved:

July 2016

## DEDICATION

I would like to dedicate this dissertation to all the amazing women in my family who have come before me and influenced me in indescribable ways. I dedicate this research to the brave survivors of sexual assault who have lived and inspired others in spite of the pain and horror. May this research continue to inspire humankind to take an active stand to stop sexual assault against women around the world.

## ACKNOWLEDGEMENTS

First, I would like to thank God for the desire, perseverance, and knowledge of how to complete this important milestone. There were many times that I felt so alone and wondered if I would be able to make my deadlines, but it was God's comforting whispers that reminded me of my abilities and his gifts of supportive family members, friends, mentors, and faculty to help me through challenging times.

I would like to thank my mother for being the trailblazer in my family and demonstrating what the product of hard work and dedication looks like. Mom, thank you for listening to my ups and downs, encouraging me, praying for me, and demonstrating your support through amazing care packages of coconut drops, grater cake, hand-picked apples, and delightful homemade soaps and lotions. Daddy, thanks for always wishing me well and regularly checking in on me. To my incredible siblings, Bridgette, Elizabeth, and Greg, thank you for including me in the exciting changes in your lives and the regular comic relief through Whatsapp messages. I love you guys!

To my wonderful friends, Suzie, David, Malu, Melissa, Michelle, Alison, and Stephanie, you always helped me to remain grounded. Suzie, my incredible best friend, thanks for always providing me with a well-needed retreat in your home, reading drafts of my writing, and listening to me and encouraging me even during your far away travels to West Africa. You always made time for me, and I love you so much! David, thank you for our fun and engaging philosophical debates and listening to me when I needed you the most. Malu, thank you for regularly reminding me about maintaining balance in my life. Melissa, thank you for our fun conversations about health, nutrition, family, and life changes. Michelle, I will always be grateful for our conversations about recipes, travel, and ways to embrace the beauty in life. Alison, thank you for your friendship, kindness and unfailing belief in me that I would accomplish and exceed my goals. Stephanie, we have made it through these four years together, and I loved having you by my side. We uplifted each other, and found ways to make it to the end. We did it!

Next, I would like to thank my mentors. Joetta, thank you for taking such an interest in me and finding ways to help me to achieve my goals. Ishtar, thanks for being such a thoughtful and inspiring mentor and friend. I will always remember your encouraging quote from Reggae artist, Jacob Miller, "Forward ever, backward never." Thanks for helping me to push forward!

I would like to thank my very intelligent and supportive professors, Jeff Klibert, Thresa Yancey, and Jim Pugh for providing me with the knowledge and training to confidently practice as a competent clinician. I would like to thank my dissertation chair, Amy Hackney, for her commitment to sexual assault prevention and her guidance in the development of my dissertation study. Lastly, to my committee members, Jeff Klibert, Nick Holtzman, and Ishtar Govia, thank you for your feedback and wisdom in developing this study.



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## CHAPTER I: INTRODUCTION

### Study Aims and Significance

Approximately 1 in 5 women in the United States (U.S.) has been raped in her lifetime, and women between the ages of 18 and 25 experience the highest rate of sexual violence victimization (Black et al., 2011). Black and colleagues (2011) report that 79.6% of rape victims were raped before the age of 25. In a study of undergraduate women, 19% experienced attempted or completed sexual assault during their four years of college (Krebs et al., 2009). It is further estimated that 20 to 25% of college women are at risk for attempted and completed rape (American College Health Association, 2008). Traditional college women, ages 18 to 25, are within the most vulnerable age group for sexual assault, which makes them an important population with which to conduct sexual assault research.

Considering the magnitude of sexual assault occurrences and the many adverse effects of sexual assault on women, researchers have sought to understand the cognitions and behaviors that facilitate sexual assault against women with the intent of developing sexual assault preventative interventions. There is consensus in the literature that multiple factors are linked to men's sexual aggression such as heredity, alcohol use, physiology, neurophysiology, social learning, gender schemas, sexual scripts, personality traits, attitudes about rape, power, and sex motives (Koss, 2000). Rape Myth Acceptance (RMA) has become the overarching construct used to study sexual violence against women. 'Rape myths' are defined as inaccurate attitudes and beliefs about rape that serve to blame victims and vindicate rapists (Brownmiller, 1975). Krahe and colleagues (2007) have defined rape myths as a cognitive schema that causes individuals to readily generate attitudes and beliefs about sexual assault and sexual assault victims. Rape myths refer to the perpetrator-victim constellation with an emphasis being on men

who commit sexual violence against women (Krahe & Scheinberger-Olwig, 2002). As such, the research surrounding rape myths focuses on men's sexual victimization of women. Examples of commonly endorsed rape myths include: men are unable to control their sex drive, women bring rape upon themselves, and most women lie about rape. Of these, the most commonly endorsed rape myth is that women bring rape upon themselves—a myth that blames the victim (Edwards, Turchik, Dardis, Reynolds, & Gidycz, 2011). Both men and women in the general public endorse rape myths, with men being most likely to endorse rape myths (Bohner, Eyssel, Pina, Siebler, & Tendayi, 2009; Chapleau & Oswald, 2010). Generally, men and women who endorse rape myths often blame the victim for the sexual assault and tend to lack empathy for the victim's experience (Krahe, Temkin, & Bieneck, 2007). There are two main factors that determine whether people will endorse the rape myth that victims are responsible for being raped: overall high endorsement of rape myths (Check & Malamuth, 1985; Jenkins & Dambrot, 1987) and lack of identification with victims (Fulero & DeLara, 1976; Grubb & Harrower, 2009).

A critical finding of RMA research reveals that for men, a high endorsement of rape myths is a predictor of rape proclivity (Bohner, Jarvis, Eyssel, & Siebler, 2005). In other words, men who endorse harsh and judgmental attitudes toward rape victims and circumstances involving rape are more likely to be perpetrators of rape. These findings provide a causal link between men's attitudes and behavior and highlight the importance of RMA research. Women who have a high endorsement of rape myths tend to engage in insufficient rape preventative measures (Hickman & Muehlenhard, 1997). Specifically, women who have a high endorsement of rape myths tend to believe that they are not at risk for sexual assault, leading them to be less proactive about engaging in safety behaviors (Bohner & Lampridis, 2004; Hickman & Muehlenhard, 1997).

A bulk of the RMA research has taken place in the U.S. and significant strides have been made in the understanding of sexual aggression toward women; however the rate of sexual assault continues to be high. Approximately 20% of women in the U.S. have been raped in their lifetimes (Black et al., 2011) and college women are a particularly vulnerable age group (Krebs et al., 2009). Considering the prevalence of sexual assault among college women, sexual assault measures that provide valid self-reports of attitudes and beliefs about rape are needed. It is important to use validated RMA measures in research that aims to inform sexual assault education interventions and clinical practice. With the exception of the updated Illinois Rape Myth Acceptance scale by McMahon and Farmer (2011), the RMA measures used in the U.S. are almost two decades old.

A newer measure, the Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale (Gerger et al., 2007), was designed to capture subtle attitudes and beliefs about rape, victims, and perpetrators. Traditional measures have only focused on explicit or blatant item wording of sexual assault related attitudes. Gerger and colleagues' (2007) development of the AMMSA scale was driven by theory and research on modern sexism and racism, which finds that individuals' views about sexism and racism tend to be more covert than in the past (Gerger et al., 2007). Gerger and colleagues (2007) speculated that people have learned how to recognize explicit questions about sexual assault and engage in impression management by offering politically correct responses on RMA scales. Consequently, the true attitudes and beliefs about these issues are unknown, which may in turn skew the results of RMA measures. Since the AMMSA scale offers subtler item wording, it is expected to capture more accurate views about sexual assault. Another advantage to the AMMSA scale is that its content areas are multidimensional; the AMMSA scale examines beliefs about whether male coercion is a natural

part of sexual relationships, views that exonerate male perpetrators by blaming the victim or circumstances, beliefs that deny the scope of the problem and support antagonism towards victims needs', and attitudes that demonstrate a lack of support for policies designed to address sexual assault (Gerger et al., 2007). Lastly, the AMMSA scale includes more updated wording than previous measures of RMA, in order to reflect the vocabulary of modern language. The AMMSA scale was first validated with three German-speaking samples from Germany and an Internet sample of German and English-speaking students and non-students (Gerger et al., 2007).

A Spanish-language version of the AMMSA scale has also been validated (Megías, Romero-Sánchez, Durán, Moya, & Bohner, 2011), and the psychometric properties of a Colombian version of the AMMSA scale also has been studied (Romero-Sanchez, Megias, Carretero-Dios, & Neira, 2013). To date, there are few studies that have used the AMMSA with U.S. college students (e.g., Hackney, 2012; Watson, Chastang, & Hackney, 2014). More research is needed to explore the reliability and validity of the AMMSA scale with U.S. college students. Previous RMA scales have been reported to have several methodological challenges including vague definitions of the rape construct, inconsistent internal consistencies, skewed distributions, only blatant rape myth items, and antiquated use of vocabulary and phrases (Buhi, 2005; Gerger et al., 2007; Lonsway & Fitzgerald, 1995). As such, the AMMSA scale's strong psychometric properties, subtle item wording and updated language could serve as a potential RMA scale alternative for research conducted with U.S. college students.

## **Purpose**

This dissertation sought to a) assess the convergent and discriminant validity of the Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale in a U.S. college sample from a large rural Southeastern public university, b) examine rape myth acceptance

(RMA) levels and sociocultural attitudes among female sexual assault victims and non-victims, and c) examine the relationship between sociocultural variables and the AMMSA scores based on victimization status. To accomplish these goals, the study was divided into three phases. Phase I consisted of cognitive interviews with college students to evaluate all the scales in the study. The purpose of phase II was to pretest the revised scales with an independent sample of college students. The purpose of phase III, the main study, was to test the revised scales with a larger college sample and to assess the psychometric properties of the AMMSA scale, compare rape myth acceptance among sexual assault victim and non-victim U.S. college students, and determine if the relationships between the AMMSA scale and the socio-cultural attitudes variables depend upon victimization status. Sexual assault victimization status was operationalized by sexual assault experienced within the past 12 months or sexual assault experienced within one's lifetime. Individuals who did not report a history in either sexual assault victimization category were defined as non-victims. Convergent and discriminant validity for the AMMSA scale were assessed by using the updated Illinois Rape Myth Acceptance, Burt's scales (Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism), Gender Specific System Justification, Impression Management, and Sexual Health Knowledge scales.

Undergraduate students were the target study population due to the high rates of sexual assault among women aged 18 to 25 years old (Black et al., 2011), the fact that 19% of women experience attempted or completed sexual assault during their four years of college (Krebs et al., 2009), and the causal link between high RMA and rape proclivity in men (Bohner et al., 2005). College sexual assault is a public health epidemic, and there should be an improved method to reduce sexual assault incidences within this population.

The AMMSA scale incorporates both blatant and subtle item wording about sexual assault, victims and perpetrators of sexual assault, allowing for a more accurate understanding of attitudes and beliefs surrounding sexual assault from both male and female perspectives. RMA research findings from the AMMSA scale could be used to inform the content of sexual assault prevention education programs on college campuses.

The benefits of conducting RMA research with a modern measure are numerous. First, the identification of common rape myths among college students can help researchers to tailor sexual assault prevention education programs to address specific rape myths on college campuses. Second, knowledge about covert attitudes and beliefs about sexual assault, victims, and perpetrators can help researchers develop specific social psychological strategies that can be used to make long-term changes to faulty attitudes and beliefs about sexual assault. Third, identification of common rape myths allows psychologists to develop clinical interventions geared toward victims of sexual assault and their families.

#### Statement of Significance

Little research has addressed whether there are differences in levels of RMA between victims and non-victims. In the recent past, some research has shown that there are no differences in RMA levels between victims and non-victims (Carmody & Washington, 2001; Mason, Riger, & Foley, 2004). However, more recent research found differences in AMMSA scores between victims and non-victims, depending upon when the sexual assault occurred (Watson, Chastang, & Hackney, 2014). The authors found that women who had been victimized within the last year had significantly higher AMMSA scores than non-victims, but that there were no differences in AMMSA scores between victims and non-victims when victimization status was defined as whether the women had ever experienced forced sexual assault. The



authors concluded that the differences between victims and non-victims required further exploration to ascertain what factors may have contributed to these variations.

There are other studies that have explored how the severity of the sexual assault and the timeframe in which an individual seeks mental health treatment can affect psychological outcomes. One study showed that victims' ability to seek mental health treatment, receive social support, and work through post-assault trauma have been found to contribute to posttraumatic growth such as positive change in self, relationships, life philosophy/spirituality, and empathy over a twelve month period as compared to women who did not seek mental health treatment in that timeframe (Frazier, Conlon, & Glaser, 2001).

There are many factors, however, that prevent sexual assault victims from being able to move forward with their healing such as blaming themselves for the sexual assault, not acknowledging the rape due to situational and self perceptions (i.e., perpetrator's behavior was nonviolent, minimization of the assault, consumption of alcohol at the time of the sexual assault, endorsement of sex scripts about men's versus women's expectations about sex, the inability to physically and verbally defend themselves during sexual assault), and relationship to the perpetrator (Abbey, BeShears, Clinton-Sherrod, & McAuslan, 2004; Layman, Gidycz, & Lynn, 1996; Littleton & Axsom, 2003; Littleton, Axsom, Breitkopf, & Berenson, 2006; Littleton, Axsom, & Grills-Taquechel, 2009; Miller, Amacker, & King, 2011; Miller, Markman, & Handley, 2007; Peterson & Muehlenhard, 2004; Turchik, Probst, Chau, Nigoff, & Gidycz, 2007). This combination of complex factors has influenced how women label their experiences and perceive themselves and other victims post-assault, which influence their endorsement of rape myth acceptance (Miller et al., 2011; Miller et al., 2007).

Research to date indicates that there is variability among women who have experienced sexual assault victimization, and there is potential variability between victims and non-victims of sexual assault victimization. Given these findings, the current study seeks to further explore potential differences in RMA and other sociocultural attitudes between victims and non-victims and victims with a past history and immediate history (within the past 12 months) of sexual assault victimization. Additionally, the current study seeks to explore gender differences in RMA and sociocultural attitudes to explore how much current social attitudes about sexual assault compare to different time periods in the past.

The population of interest is college students who belong to an environment where sexual assault victimization commonly occurs. It is important to study college female victims and non-victims in conjunction because all women are susceptible to rape. Furthermore, research that seeks to better understand victims' attitudes and beliefs about other victims, perpetrators, and rape may provide critical information that may reduce victims' risk for experiencing re-victimization. It is estimated that two out of three victims of sexual assault are sexually re-victimized (Classen, Palesh, & Aggarwal, 2005) and are two times more likely to experience re-victimization in the same year (Miller et al., 2007).

Sexual assault victims are particularly vulnerable and the assessment of RMA levels and sociocultural attitudes may provide information as to how best to tailor sexual assault prevention interventions to reduce future victimization. New information about RMA predictors can help move RMA research forward. Specific knowledge about predictors associated with subtle and blatant attitudes can fine tune researchers' approaches to studying this phenomenon and potentially offer insight into how to reduce and prevent the occurrences of sexual assault on college campuses.

Compared to older RMA measures, the AMMSA scale is the first modern measure to have a normal distribution of scores and include subtler item wording (Gerger et al., 2007). The AMMSA scale has a lot of potential in RMA research in the U.S.; however, there must be methodological considerations in order to adapt it for an Anglophone U.S. college sample. The AMMSA scale was developed in Germany and validated with three samples of German students and non-students and via an Internet sample of German-speaking and English-speaking students and non-students from several countries including the U.S.; the AMMSA scale yielded strong psychometric properties in all the samples (Gerger et al., 2007). However, research with U.S. college students following the initial AMMSA scale validation is limited.

In order to verify some of the psychometric characteristics of the AMMSA scale, particular care must be given to its translation, adaptation, and validation of the instrument. The most scientifically sound procedure to verify the suitability of the AMMSA scale with U.S. college students would be to examine its psychometric properties with a U.S. college sample. Cross-cultural research experts recommend variations of methodological steps to adapt psychological and educational instruments for different linguistic and cultural contexts (Beaton, Bombardier, Guillemin, & Ferraz, 2000; Hambleton & Kanjee, 1995; International Test Commission, 2005; Sousa & Rojjanasrirat, 2011).

Cognitive interviews are widely used as a strategy in survey research to identify and correct problems with survey questions (Beatty & Willis, 2007) that consequently improves questionnaire interpretation (Ryan, Gannon-Slater, & Culbertson, 2012) and provides validity evidence for respondents' response processes (Castillo-Diaz & Padilla, 2013). Considering the language and cultural differences between Germany and the U.S., following the recommended

cross-cultural scale adaptation processes would be beneficial in evaluating the psychometric properties of the AMMSA scale within a U.S. sample.

The AMMSA scale and the scales (Burt's scales, Gender Specific System Justification, Impression Management, and Sexual Health Knowledge) selected to assess convergent and discriminant validity for the current study were included in the cognitive interview and pilot testing (pre-testing process) to ensure consistency and accuracy in question item comprehension. Due to the dated language in the various scales, it was important to verify current students' comprehension and interpretation of the question items to improve the quality of the AMMSA scale validation process.

Rape myths include evaluative judgments and beliefs about sexual assault. More robust measures of RMA such as the AMMSA scale are needed to evaluate respondents' honest views related to sexual assault. Research with college men and women is developmentally appropriate considering that life long behaviors are shaped during this independent stage of their lives. Additionally, an exploration of rape myths among sexual assault victim and non-victim college students will provide researchers with a better understanding of the core beliefs that maintain rape myths. Now is the time for researchers to embrace a newer RMA measure that is more psychometrically sound, that reflects contemporary item wording, and explores covert attitudes about sexual assault that can accurately inform the content of sexual assault prevention education programs.

This study had three main goals: a) assess the convergent and discriminant validity of the Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale in a U.S. college sample from a large rural Southeastern public university, b) examine rape myth acceptance (RMA) levels and sociocultural attitudes among female sexual assault victims and non-victims,

and c) examine the relationship between sociocultural variables and the AMMSA scores based on victimization status.

The findings from this study have direct implications for clinical psychology particularly as they relate to how clinicians attend to their own biases regarding rape cases and victims of rape. In addition, commonly endorsed rape myths may provide insight into how a victim may perceive her experience through the lens of society, which provides the clinician with information as to how best to approach treatment. The findings from the current research can serve to educate mental health care providers, health care providers, and the public about the ramifications of rape myths and provide suggestions as to how to dispel these myths through targeted sexual assault prevention programs.

## Definition of terms

**Sexual assault:** any type of sexual activity that the individual does not give consent to, which includes inappropriate touching, vaginal, anal, or oral penetration, rape, attempted rape, and child molestation (Office on Women's Health, 2014).

**Sexual violence:** “any sexual act that is perpetrated against someone's will. It encompasses a range of offenses, including a completed nonconsensual sex act (i.e., rape), an attempted nonconsensual sex act, abusive sexual contact (i.e., unwanted touching), and non-contact sexual abuse (e.g., threatened sexual violence, exhibitionism, verbal sexual harassment)” (Centers for Disease Control and Prevention, 2014).

**Rape (Georgia Law):** A person commits the offense of rape when he has carnal knowledge of: penetration of the female sex organ by the male sex organ, forcibly and against her will OR if she is < 10 years old (Georgia Code, 2010).

**Rape victim-** it is an individual who has been sexually assaulted. Sometimes the term ‘victim’ is viewed as derogatory because it serves to disempower the individual; however, the victimization experience is often viewed as two transitional stages of healing such as victimization to survivorship (The DC Rape Crisis Center, 2010).

**Rape survivor** - is considered as a new empowerment term used to describe individuals who have experienced sexual assault and who are making steady strides toward their recovery (The DC Rape Crisis Center, 2010). However, for the purpose of consistency in the text, only victim will be used.

## CHAPTER 2: LITERATURE REVIEW

Female college students between the ages of 18 and 25 experience the highest level of sexual violence compared to women in other age groups (Black et al., 2011; Sinozich & Langton, 2014). The actual numbers of sexual violence within this age group are unknown because sexual violence crimes are often underreported. In a study of undergraduate women, 19% experienced attempted or completed sexual assault during their four years of college (Krebs et al., 2009). Additionally, women who have been victimized are also at risk for re-victimization. Humphrey and White (2000) conducted a study with 1569 undergraduate women in public universities in the United States and found that women who experienced sexual victimization before the age of 14 were four times more likely than non-victims to experience sexual victimization during their college years. Childhood sexual assault victimization was a predictor for future victimization. Additionally, college students who experienced sexual assault during their first year of college were more likely to experience future victimization in college. Katz and colleagues (2010) found that women who reported having been sexually assaulted at the start of their first academic year were more likely to be re-victimized during their third and fourth academic year. The authors found that the main factors that explained that effect were self-blame and decreased sexual refusal assertiveness. In other words, women who blamed themselves for the initial sexual assault were less likely to feel they could protect themselves against future sexual assaults.

Approximately 20-25% of college women are estimated to be at risk for attempted and completed rape during their four years of college (American College Health Association, 2008). Female college students belong to a large student group. In 2013, 21.3 million U.S. college students, 18 to 24 years old, were enrolled in degree-granting institutions and a combined total of

30.7 million were enrolled in non-degree and degree-granting institutions (National Center for Education Statistics, 2014). Of the 21.3 million students enrolled, 12.5 million are female students compared to 9.3 million male students (National Center for Education Statistics, 2014). Therefore, the prevalence of sexual assault within this age group and the size of the college population demonstrate the need to study sexual assault within college students.

The U.S. Department of Justice conducted a study from 1995 to 2013 with student and non-student groups between the ages of 18 and 24 and found that among students, 51% of sexual assaults occurred during leisure activities away from home whereas 50% of nonstudents experienced sexual assaults when they were at home. Students in the Midwest reported the highest rate of sexual assault (8.3 per 1000) compared to students in the South who reported the lowest rate of sexual assault (4.7 per 1000). Additionally, students in rural areas reported the lowest rate of sexual assault (4.6 per 1000) compared to students in urban settings (6.6 per 1000; Sinozich & Langton, 2014).

Another study by the American College Health Association (2013) explored the frequency and types of sexual assaults that occur among undergraduate students in the United States. They conducted a study in spring 2013 with 96,911 undergraduate students and found that 4,911 (8%) of women reported having been sexually touched without consent, 2,248 (4%) experienced attempted sexual penetration without consent, 1,387 (2%) experienced sexual penetration without consent, and 1,359 (2%) experienced a sexually abusive intimate partner relationship within the last 12 months. Additionally, 1,154 (2%) women reported a man having sex with them without consent while under the influence of alcohol and 199 (1%) of men reported having consumed alcohol and having had sex with a woman without her consent (American College Health Association, 2013). Approximately 90% of the perpetrators are



known to sexual assault victims in college settings, but sexual assault is often underreported (Abbey, 2002).

### Challenges in Reporting Sexual Assault

The prevalence of sexual violence is underreported for a number of reasons, and one of the reasons includes how data about sexual violence are collected. The National Research Council (2013) released an in-depth report that documented that the Bureau of Justice Statistics' (BJS) National Crime Victimization Survey (NCVS), a highly regarded rape and sexual assault survey in the U.S., grossly undercounts the occurrence of rape and sexual assault. The research panel stated that inaccurate counts of rape were due to questions that did not specifically measure sexual assault and that the survey did not include definitions of what acts classified as rape and sexual assault (National Research Council, 2013).

In addition to methodological challenges to reporting sexual assaults, female victims tend to underreport sexual violence and tend to underutilize medical resources. Between 1995 and 2013, 20% of student victims reported sexual assault to police compared to 32% of nonstudent victims (Sinozich & Langton, 2014). Additionally, 26% of the student victims who reported the sexual assault to the police believed the incident was a personal matter and 20% stated they feared reprisal from the perpetrator (Sinozich & Langton, 2014). About 16% of student victims received assistance from a victim's service agency (Sinozich & Langton, 2014). Planty and colleagues (2013) found that rape victims of distinct racial/ethnic backgrounds received fewer victim-related services compared to White victims. Alvidrez, Shumway, Morazes, and Boccellari (2011) reported that even when controlling for service costs, Black victims were less likely than White victims to engage in treatment in the year following the assault. Of the rape victims who seek services, the age group 18 to 24 tends to represent the largest age group seeking treatment

through the Sexual Assault Nurse Examiner Program (McCall-Hosenfeld, Freund, & Liebschutz, 2009). Jones and colleagues (2009) conducted a study with girls and women (>13 years old) in the U.S. who sought treatment through a Nurse Examiner Program in an urban setting and found that of the 424 individuals who underwent the medical exam, 318 (75%) filed a criminal report with the police. The authors found that the main reason for not reporting the crime was due to the relationship with the perpetrator rather than psychological barriers such as shame, anxiety or fear (Jones et al., 2009).

Other reasons for underreporting still persist. For example, Peterson and Muehlenhard (2004) conducted a study with 396 college women about rape perceptions. Of the 396 women screened, 86 women had experienced the legal definition of rape, yet only 33 (38%) acknowledged they had been raped. The authors expressed that unacknowledged rape could be due to rape myths and rape scripts that victims are exposed to such as “only bad girls get raped” or “men from nice middle class homes almost never rape.” Additionally, the authors stated that victims may have endorsed narrow definitions of rape such as the presence of violence, its occurrence in a public space, and victimization by a stranger (Peterson & Muehlenhard, 2004). Consequently, these misclassification factors contribute to the underreporting of rape.

Kelly and Stermac (2008) conducted a review of the literature and found that underreporting tends to be rooted in the response bias within the criminal justice system. The authors found that police officers were less likely to pursue the rape report as a criminal case if they had biases towards victims such as victims’ alcohol use, social class, presence of a mental illness, and scattered recollections of the sexual assault event. In other words, if police officers suspected that the rape victim consumed alcohol at the time of the rape, belonged to a lower social class, had a previous diagnosis of a mental illness, and did not remember the rape incident

in exact details, they were less likely to believe the victim and were less likely to investigate the case (Kelly & Stermac, 2008). Additionally, police officers were less likely to investigate a rape crime if they had judgments about the victim's community, how community members viewed rape, and what community resources were available to assist victims in navigating medical and psychological treatments and legal services.

Victims' self-blame and fear of not being believed by others are some individual factors that contribute to underreporting of sexual assault (Kelly & Stermac, 2008). A study by McCall-Hosenfeld and colleagues (2009) found that even when rape victims sought treatment, there was a delay in treatment if victims knew their perpetrator. Cybulska and Forster (2007) state that the victim may choose to report a sexual violence crime within hours of the crime or many years after the crime. Few rape victims seek treatment immediately after the assault, regardless of the severity of the assault (Tjaden & Thonnes, 1998). Victims often do not get the help they need. Delay in treatment may further compound the consequences of the sexual assault and contribute to physical and psychological morbidity.

#### Adverse Effects of Sexual Assault

The adverse long-term effects of rape and sexual assault on mental health functioning have been widely documented in the literature with post-traumatic stress disorder, depression, and substance use having the highest comorbidities (Xu et al., 2013; Zinzow et al., 2011). Over 40% of victims reported suicidal ideation compared to 6.8% of non-victims; approximately 19% of victims reported attempted suicide compared to 2.2% of non-victims (Kilpatrick et al., 1985). In addition, neglect of healthcare, involvement in risky sexual behaviors, and development of eating disorders can result from sexual violence victimization (Cybulska & Forster, 2007). Physical health repercussions include sexually transmitted infections, pregnancy, sexual

dysfunction, and vaginal or anal trauma (Jina & Thomas, 2013). Additionally, women who experience sexual violence are at a greater risk for experiencing sexual re-victimization (Classen et al., 2005; Miller et al., 2007).

The American College Health Association (2008) states that the high levels of sexual victimization coupled with the cultural acceptance of rape myths increases vulnerability among sexually victimized students and further alienates them from their peers and access to care. College female student victims experience other consequences such as barriers to academic success, lower graduation rates, health problems, and persistent mental health issues (American College Health Association, 2008). Sexual assault affects personal and academic development, and it has long lasting psychological effects on sexual assault victims. Given the large negative impact of sexual assault on female college students, it is important to understand the factors that predict sexual victimization.

#### Factors that Influence Sexual Victimization

The literature has shown support that mainstream American culture maintains rape myths. Burgess and Burpo (2012) found that male and female college students exposed to music videos with high levels of sexuality or sexual objectification endorsed less empathy for the victim in a date rape scenario. Additionally, women were more likely than men to blame the woman in the date rape scenario as being responsible for the rape, yet women were more likely than men to acknowledge that the man in the scenario was guilty of rape (Burgess & Burpo, 2012). Higher endorsement of rape myth acceptance has been linked to higher rape proclivity in men (Bohner et al., 2005) and insufficient rape preventative measures in women (Hickman & Muehlenhard, 1997). The consequences of high endorsement of rape myth acceptance are grave,

which provide additional support of why rape myth acceptance needs to be examined alongside multiple contributing variables.

Research examining sexual assault from the standpoint of male and female college student dynamics postulate that men and women negotiate sex in different ways. Jozkowski and Peterson (2013) conducted a qualitative study with 185 college students to learn about how men and women provide their consent and interpret their partners' consent to have sex. Four themes emerged from the study including a) women and men used traditional sexual scripts, b) women were responsible for performing oral sex, c) men's consent could be aggressive, and d) men utilized deception to obtain consent to sex. Traditional sexual scripts were defined as men being the initiators of sexual contact and women being the sexual gatekeepers. For example, 22.4% of men stated that they would ask women if they wanted to have sex whereas 47% of women stated that if asked, they would indicate consent by a verbal response. Sixty-two percent of men interpreted the question about consent for oral sex as how they would give their consent to women who wanted to perform oral sex on them and not how they would obtain consent to perform oral sex on their partner. Regarding aggression, 14% of men stated they would use aggressive strategies such as pushing their partner or taking off her clothing. Twenty-seven percent of men stated that they would obtain consent by telling their partner of their intention to have sex with her. A small percentage of men reported using deception to obtain sex in both vaginal-penile and anal-penile intercourse. Specifically, some men reported that they would insert their penis into their partner's vagina or anus and if their partner resisted and they would claim it was an accident (12.9% and 11.8%, respectively; Jozkowski & Peterson, 2013). The study was particularly interesting because sexual assault is defined as the victim's lack of consent; therefore, if there are differing ways as to how consent is given by women and

perceived by men, women may feel disempowered to refuse men's advances and men may feel empowered to proceed with their advances even when women refuse (Jozkowski & Peterson, 2013). These differing beliefs could in turn lead to rape myths that are based on stereotypical beliefs about gender roles, and false attitudes and beliefs regarding sexual consent.

Endorsement of traditional gender roles, defined as what is stereotypically considered to be feminine or masculine, has been widely studied in the rape myth acceptance literature, and it has been consistently found to predict higher endorsement of rape myth acceptance (Burt, 1980a; Chapleau, Oswald, & Russell, 2007). For example, Burt (1980) included a sex-role stereotyping measure in her study of rape myth acceptance to examine expectations of men's and women's behaviors in social and private settings and found that sex-role stereotyping was predictive of rape myth acceptance for both men and women; her conclusions were that rape seeks to psychologically and physically dominate women and maintain stereotypical views of women as the weaker sex.

In a broader context, national gender inequality is associated with increased rates of sexual violence toward women (Yodanis, 2004). Yodanis (2004) combined educational and occupational data from the International Crime Victims Survey (ICVS) and United Nations statistics from 27 countries in Europe and North America to explore system-level barriers of gender inequality and found that educational and occupational status of women related to higher rates of sexual violence.

Traditional gender roles and sexism are often related to each other and defined as negative attitudes toward women. Both have been found to contribute to higher rape myth acceptance and sexual violence in female college students (Holcomb, Holcomb, Sondag, & Williams, 1991; Johnson, Kuck, & Schander, 1997; Lonsway & Fitzgerald, 1994; Truman,

Tokar, & Fischer, 1996). Chapleau and colleagues (2007) conducted a study with 409 college students to examine the relationship between ambivalent sexism and rape myth acceptance, and results showed that hostile sexism toward women had a strong positive correlation with rape myth acceptance for men and women. Additionally, the authors found that benevolent sexism toward women had a moderate positive association with rape myth acceptance. In summary, a belief in traditional gender roles serves to uphold the status quo, which in turn, leads to the failure of addressing the issues of rape myth acceptance and sexual victimization of women.

### Sexual Assault Research

Sexual assault researchers have made remarkable strides in investigating the psychosocial phenomena of sexual assault and bringing attention to this public health epidemic. However, a lot more work is needed to reduce the prevalence of sexual assault and to increase support for victims. Koss (2005) argues that although there have been advancements in the field of sexual violence research over the past 20 years, the research funds are insufficient to manage the growing demands of the field. Koss (2005) noted that less than three million dollars have been dedicated to sexual assault research. Additionally, the author reviewed the National Institute of Justice and the National Center for Injury Prevention and Control websites from 1996 to 2003 and found that 178 investigator-initiated grants were listed and only 14 (7%) contained the terms rape, sexual abuse, sexual assault, or sexual violence in their titles. Koss (2005) concluded that there was not enough funded research to meet the demands of sexual assault research. However, it is also unclear from Koss's review of these institutes' websites how many applications related to sexual assault were actually submitted for funding. In order to reduce the prevalence of sexual assault, collective and consistent efforts in the area of sexual violence research, prevention, treatment, policy and funding are warranted.

Most recently, President Obama signed the presidential memorandum to establish the White House Task Force to Protect Students from Sexual Assault as a formal commitment to address sexual violence on college campuses (White House Task Force to Protect Students From Sexual Assault, 2014). The task force developed a new website, [notalone.gov](http://notalone.gov), and published its first report outlining action steps to better identify, prevent, and respond to sexual violence on college campuses; in addition, the federal government agreed to issue fines and limit funding to universities that violate the Clery Act. The Jeanne Clery Act requires colleges and universities participating in federal financial aid programs to maintain and disclose campus crime statistics and security information and to protect crime victims and others from retaliation. The task force offered recommendations for how the federal government can enforce these goals with more transparency and coordinate better sexual violence prevention efforts (White House Task Force to Protect Students From Sexual Assault, 2014).

Within the past year, more female college victims of sexual assault, advocates, and politicians are speaking out against sexual assault, (Ellis, 2014; National Public Radio, 2014) which has generated national attention and a commitment from the White House. The U.S. Department of Education's Title IX of the Education Amendments of 1972 and the creation of the Campus Accountability and Safety Act now require higher education administration to be more transparent in their handling of sexual assault allegations and to enforce these federal mandates by hefty fines and penalties (Lombardi, 2014). These new laws include more resources for sexual assault victims and coordination with law enforcement to empower victims to come forward with victimization they experienced. Progress is being made in higher education to help victims recover and this calls for even more support for primary prevention of sexual assault in the form of research that can inform public policy.



## Rape Myth Acceptance Research

Most of the sexual assault research has been conducted in the U.S., and it has provided critical insights into the attitudes and beliefs regarding sexual assault. Suarez and Gadalla (2010) conducted a meta-analysis of 37 rape myth studies and found that rape myths were strongly correlated with hostile attitudes and beliefs toward women, racism, heterosexism, classism, and ageism. Aberle and Littlefield (2001) conducted a study with 76 sexually aggressive and sexually nonaggressive college males in the U.S. to test how sexual aggression influenced family-of-origin functioning and rape-supportive beliefs and found that sexually aggressive and nonaggressive men's family characteristics (levels of conflict, authoritarian family style, and enmeshment) did not significantly differ from each other (Aberle & Littlefield, 2001). However, they found a strong positive correlation between the composite of rape-supportive attitudes (adversarial sexual beliefs, acceptance of interpersonal violence, and rape myth acceptance) and the composite of family functioning factors (conflict, enmeshment, and authoritarian family style) indicating that there is a constellation of rape-supportive attitudes and family functioning that influences each other.

Most of the RMA research focuses on how cognition influences sexually aggressive behavior. Behaviors, however, can also serve to justify rape-supportive attitudes and beliefs. Both self-perception theory and cognitive dissonance theory provide support for this. According to self-perception theory, people observe their behaviors and then infer their attitudes from their behaviors and the circumstances surrounding those behaviors (Bem, 1972). Additionally, people tend to acknowledge their feelings by assessing external cues instead of using internal processes. Self-perception theory can serve to maintain rape myths. For example, individuals who hold certain negative attitudes toward victims and circumstances surrounding rape may have adopted

those attitudes from external cues rather than exploring their own feelings about the matter. According to self-perception theory, rapists are likely to draw conclusions about their feelings about sexual victimization of women after they have observed their own behaviors. Festinger's theory of cognitive dissonance states that when people hold two cognitions that are relevant and psychologically inconsistent, they experience psychological discomfort; as a result, they will work to reduce the discomfort by choosing only one cognition and developing a rationale for their choice (Aronson, 2012). Aronson (2012) also states that dissonance threatens a person's self-concept, particularly if the behavior is incongruent with his or her thoughts about the self. This may be true for sexual assault perpetrators who learn from society that their behavior is morally wrong. These social norms may be dissonant with their own self-concept and in order to preserve their image and manage the discrepancy between behavior and cognitions, sexual assault perpetrators may seek to justify their actions by endorsing rape myths. Research has found that convicted rapists have a particularly high acceptance of violence against women (Scully & Marolla, 1984). It is unclear, however, if sexual assault perpetrators developed rape myths before or after the sexual assault. Research suggests that implicit attitudes can be changed to positively influence behavior (Gawronski & Bodenhausen, 2006; Rydell & McConnell, 2006; Rydell, Sherman, Boucher, & Macy, 2012) and provides support for sexual assault education prevention efforts that focus on debunking rape myths. The insight researchers have today and continue to accumulate about sexual assault come from decades of diligent and committed contributions from feminists in the field.

It is the seminal work of Brownmiller (1975) and Burt (1980) that has laid the foundation for our current exploration of the intercept between culture and sexual assault. Feminist advocate Brownmiller (1975) argued that rape is not a crime of passion but rather one of power.

She elaborated by stating that historically, men have used their genitalia as weapons against women to exert their dominance and to keep women in a state of fear (Brownmiller, 1975). Burt (1980) sought to examine what factors contributed to rape. Burt coined the term, “rape myths,” which she defined as “prejudicial, stereotyped, or false beliefs about rape, rape victims, and rapists.” (p. 217). Burt was the first to empirically test feminist theories of the myths surrounding sexual assault. In doing so, she developed a sociocultural model to assess the antecedents of rape myth acceptance, such as background and personality characteristics, life experiences, and social attitudes.

Modern RMA survey tools now evaluate subtler attitudes and beliefs about sexual assault and this change stems from sexism and racism research. Swim, Aikin, Hall, and Hunter (1995) assert that similar to racism, discrimination towards women has become more covert and subtle over time. Additionally, American society has become more progressive in its views about race and sex and less tolerant of outward expression of negative views toward women and African Americans. This change, however, may have caused individuals who hold prejudice to conceal their true views about racism and sexism to avoid being publicly ridiculed. As such, RMA measures have been revised over the years to incorporate subtler item wording in order to more fully explore modern prejudicial beliefs toward women and rape victims. The following section examines the psychometric properties of past and current RMA scales and related attitudes, and the methodological challenges with each one.

### Burt Scales

Burt (1980) conducted a study with 598 adults (241 men and 357 women) in Minnesota to examine the predictors of RMA, which included background, personality and life experience, and attitude variables. Background variables included demographic factors such as age, sex,

education and occupational status. Personality variables included sex role satisfaction, self-esteem, and romantic self-image. Life experience variables included exposure to intrafamilial violence, sexual violence victimization, vicarious sexual violence victimization, and exposure to sexual violence in the media. Attitude variables included sexual conservatism, which includes expectations about sexual roles between sexual partners, adversarial sexual beliefs, which includes beliefs that women and men tend to exploit relationships; acceptance of interpersonal violence, which supports the belief that force and coercion are fundamental to intimate relationships, and sex role stereotyping, which believes that men and women should adhere to gender roles. These variables were believed to encompass cultural beliefs about gender roles, violence against women, sexual activity, and expectations of sexual relationships.

Burt developed a 19-item RMA scale, which included a 7-point Likert scale ranging from strongly agree to strongly disagree that yielded high internal consistency,  $\alpha = .87$ . Sample rape myths from the RMA scale included “One reason that women falsely report a rape is that they frequently have a need to call attention to themselves” and “In the majority of rapes, the victim is promiscuous or has a bad reputation.” Results showed that scores on three of the four attitude scales yielded good internal consistency: Sexual Conservatism ( $\alpha = .81$ ); Adversarial Sexual Beliefs ( $\alpha = .80$ ); and Sex Role Stereotyping ( $\alpha = .80$ ); scores Acceptance of Interpersonal Violence had the lowest internal consistency ( $\alpha = .59$ ). The strongest predictor variable for RMA for both men and women was Acceptance of Interpersonal Violence. All background variables (age, occupation, and education) played a significant role in the model. Neither age nor occupation had a direct relationship with RMA, but those with higher occupation status had higher self-esteem and were more liberal in their attitudes expressed in Sex Role Stereotyping, Sexual Conservatism, and Adversarial Sexual Beliefs. Younger adults were also more liberal in

their attitudes of Sex Role Stereotyping, Sexual Conservatism, and Adversarial Sexual Beliefs, and Acceptance of Interpersonal Violence. Those with more education expressed more liberal views with Sex Role Stereotyping and Sexual Conservatism, and were lower in RMA endorsement. None of the personality variables were directly related to RMA and were removed from the regression models. The sociocultural variables that were directly related to RMA included Acceptance of Interpersonal Violence, Sex Role Stereotyping, and Adversarial Sexual Beliefs. Both men and women were found to have similar levels of RMA and sociocultural attitudes.

Burt's research provided evidence that both men and women endorsed rape myths and that rape attitudes were associated with attitudes about violence toward women, stereotypical role identification for men and women, and distrust of the opposite sex. Additionally, her research supported the connection between the role of culture and rape myths. Many researchers have replicated Burt's original findings (Krahé, 1988; Margolin, Miller, & Moran, 1989), and researchers continue to use variations of Burt's measures (Gerger et al., 2007).

Burt's 19-item RMA scale and attitudinal scales have been widely used in the literature, yielding strong overall reliability for assessing rape beliefs. Sawyer, Thompson, and Chicorelli (2002) examined RMA with 701 intercollegiate male and female athletes using a revised version of Burt's RMA scale (13 items). They examined predictor variables such as non-revenue and revenue sports (e.g., men's basketball and football), individual versus team sports, Division I versus Division II sports, athletes' academic year, and gender. The authors found that the overall sample yielded high coefficient reliability on the RMA measure. Men scored higher in RMA than women. Additionally, there were gender differences in the endorsement of rape myths. Fifty percent of men estimated that half of women who report rape lie and that women invent rapes;

women, on the other hand, were more likely to respond that very few women who report rape lie and invent rapes. Men who played team sports (basketball, football, and baseball) had RMA scores significantly higher than those who played individual sports. There were no statistical differences between high revenue and non-revenue sports, ethnicity, and sports division on RMA for men. However, for women, there were statistically significant differences based on sports division. Lastly, RMA was significantly higher among first year students and sophomores as compared to junior and seniors. In summary, the associations between RMA and grouping variables showed that student athletes are not a homogenous group and vary in their beliefs about rape.

Burt's (1980) RMA scale has been used to examine participants' reactions to sexual assault scenarios. Morry and Winkler (2001) conducted a study with 154 undergraduate male and female students using Burt's 19-item RMA measure to determine the level of RMA and reactions to sexual assault scenarios using the Acceptance and Expectation Questionnaire. Findings revealed that men scored higher in RMA than women. The RMA measure showed good internal consistency,  $\alpha = .83$ . RMA was found to be positively correlated with acceptance scores and expectation scores. There were no gender differences between acceptance and expectation scores. Overall, findings indicated that those who endorsed high levels of rape myths also endorsed that sexual aggression is expected and acceptable in various situations.

Burt's RMA scale has also been used to examine male rape proclivity. Schewe, Adam, and Ryan (2009) used Burt's full RMA scale (19 items) and Adversarial Sexual Beliefs subscale in a qualitative study to explore 154 college males' experiences of being tempted to use force to obtain sexual contact with another person. The authors also used an Attraction to Sexual Aggression scale and Hypermasculinity Inventory, and asked participants to respond to forced-

choice and open-ended questions about situations in which they were tempted to use force or coercion to engage in sexual acts with a woman. The internal consistency for the scores on the RMA scale was good ( $\alpha = .83$ ) and the internal consistency for the scores on the Adversarial Sexual Beliefs scale were very close to conventional levels of acceptability ( $\alpha = .69$ ). The authors compared men who were tempted versus not tempted to use force or coercion and found there were no significant differences in RMA levels or Adversarial Sexual Beliefs subscale levels between the groups. There were significant differences, however, between men who reported being tempted versus not tempted to use force or coercion on the hypermasculinity scale and on the attraction to sexual assault scale. Men who scored high on the hypermasculinity scale reported being tempted to use force one or more times, and being tempted to use alcohol/drugs in 10 of the 22 cases to obtain sex from women. For men who scored low on the hypermasculinity scale, they did not report being tempted to use force or to use alcohol or drugs to obtain sex from women. This study used Burt's scales in combination with other measures to better understand the motives of sexual assault perpetrators in a college setting.

While the aforementioned articles serve as evidence and support for Burt's scales, Buhi (2005) conducted a review of 57 articles that used Burt's original RMA scale and 11 articles that used a modified version of Burt's RMA scale. Of the researchers that used Burt's original scale, one-third did not mention reliability and just over one-third (36.8%) provided the reliability coefficients for the data that were analyzed. Buhi (2005) expressed that the authors' lack of reporting reliability coefficients could be due to the low reliabilities of Burt's measures. He noted that the lack of reliability coefficients impacted how well Burt's RMA scale could be used to establish convergent validity with other RMA measures. For example, newer RMA measures used Burt's sociocultural attitude scales to establish construct validity, but they did not use the

19-item RMA scale (Gerger et al., 2007; Payne, Lonsway, & Fitzgerald, 1999) to establish construct validity. It is possible that researchers have recognized the reliability reporting inconsistencies of Burt's 19-item RMA scale and instead opted to use Burt's sociocultural attitude scales with more consistently reported psychometric properties.

#### Illinois Rape Myth Acceptance Scale

Lonsway and Fitzgerald (1994) conducted a review of the rape myth literature and found that over 12 RMA scales were developed after Burt's original RMA scale. In their review, they stated several critiques of the existing measures (including Burt's scale) that included the lack of content validity, varying definitions of rape myths, limited exploration of conceptual rape myth domains, lack of criterion validity, use of unclear and complex item wording, and the use of colloquial phrases that serve as barriers to rape myth research (Lonsway & Fitzgerald, 1994).

Lonsway and Fitzgerald (1995) revisited Burt's original definition of rape myths and deemed the definition to be too ambiguous. They redefined 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). The authors give credit to Burt for her contribution to the field, but also highlight the shortcomings of her RMA scale such as its theoretical underpinnings.

Lonsway and Fitzgerald (1995) found that Burt's Acceptance of Interpersonal Violence and Adversarial Sexual Beliefs scales contained too much overlap and that the scales also measured parts of another construct, hostility toward women. They suggested using a separate scale for hostility for women to better understand how that construct influenced the RMA variance. The authors hypothesized that hostility toward women would predict higher RMA.

Lonsway and Fitzgerald (1995) tested their hypothesis with 429 male and female undergraduate



students in the U.S. using three existing measures (Attitudes Toward Violence Scale, Adversarial Heterosexual Beliefs Scale, and Hostility Toward Women Scale) and a 19-item RMA scale that they developed. They found that Hostility Toward Women accounted for 21% of the variance in RMA for women and 40% of the variance for men. The authors postulated that men who scored high on the Hostility Towards Women scale were more likely to justify male sexual violence toward women, and women who scored high on the scale were more likely to deny personal vulnerability for sexual violence (Lonsway & Fitzgerald, 1995). The authors concluded that the hostility measure supported the need for an RMA measure to have clear, well-thought out domain-specific areas in order to establish construct validity.

In 1999, Payne, Lonsway, and Fitzgerald conducted 6 studies to explore the structure of cultural rape mythology and to develop a RMA measure, the Illinois Rape Myth Acceptance scale that reflected that structure. The first study was conducted with 604 undergraduate students who were asked to evaluate 95 rape myth statements that had been previously validated with undergraduate students. The 95 items belonged to 19 rape myth categories and contained five items to assess each category. Sample rape myth categories included “She deserved it;” “Rape is a trivial event;” and “Women lie about rape.” The authors used multivariate techniques including cluster analyses, factor analyses, and structural equation models, and found that RMA had both a general component and seven distinct rape myth subcomponents. The seven rape myth subcomponents included: She asked for it; it wasn’t really rape; he didn’t mean to; she wanted it; she lied; rape is a trivial event; and rape is a deviant event. The second study investigated the structure of rape myth perceptions by paired comparisons and individual differences scaling techniques. Study one revealed that there were no statistical differences by gender. A different group of participants was recruited for study two (24 men and 23 women, both students and

university employees). Participants were asked to rate the similarity of 19-item rape myth statement pairs that came from the original 95 items on a 9-point rating scale (not all similar to very similar). An individual difference scale analysis (INDSCAL) was conducted as well as a cluster analysis, which revealed nine clusters and two dimensions. The clusters were labeled as: “women exaggerate about the effect of rape; it’s not rape if.....; rape only occurs in the bad part of town; she wanted it or enjoyed it; she led him on; the woman is responsible for preventing the rape; she was tease/promiscuous; male absolution; women lie about rape.” The two dimensions included “deny versus justify rape” and “victim versus perpetrator focus.” Study two showed a parallel structure of study one and there were no significant differences by gender.

To further examine the Illinois Rape Myth Acceptance scale’s constructs and structure, study three evaluated its development and psychometric properties. Payne, Lonsway, and Fitzgerald (1999) described the criteria used to develop the scale, which included structural integrity (selection of items informed by studies one and two), clarity (simple, straight forward language), content coverage (range of content), reliability (items with  $\alpha > .75$ ), and some use of colloquial language. The criteria for the Illinois Rape Myth Acceptance scale resulted in 45-item assessments with 40 rape myths and five filler items that were negatively worded to control the response sets on a 7-point scale (not at all agree to very much agree). Item to total correlations ranged from  $r = .31$  to  $.68$ . Scores on the Illinois Rape Myth Acceptance subscales had alphas ranging from  $\alpha = .74$  to  $.84$  and the overall internal consistency of the scale scores was  $\alpha = .93$ . The authors also developed a short form of the Illinois Rape Myth Acceptance (Illinois Rape Myth Acceptance Short Form) to allow for wider use of the scale. They chose 17 items from 45 items on the Illinois Rape Myth Acceptance (items from each of the 7 subscales) and three filler

items. The item to total correlations for the Illinois Rape Myth Acceptance Short Form ranged from  $r = .34$  to  $.65$  and the overall internal consistency of the scale scores was  $\alpha = .87$ .

Studies four through six were used to evaluate construct validity of the Illinois Rape Myth Acceptance, Illinois Rape Myth Acceptance Short Form, and related variables. Study four recruited 176 participants to examine the relationship of the Illinois Rape Myth Acceptance, Illinois Rape Myth Acceptance Short Form and related variables (gender, sex role stereotypes, sexism, adversarial sexual beliefs, hostility toward women, and acceptance of violence). The findings showed that men had higher RMA means on both the Illinois Rape Myth Acceptance and Illinois Rape Myth Acceptance Short Form than women. The correlations between the Illinois Rape Myth Acceptance, Illinois Rape Myth Acceptance Short Form and related measures ranged from  $r = .47$  to  $.74$ . Lastly, individuals who scored higher on the Illinois Rape Myth Acceptance and Illinois Rape Myth Acceptance Short Form were more likely to hold more traditional sex role stereotypes, endorse adversarial sexual beliefs, hold more hostile attitudes toward women, and accept interpersonal violence and violence in general more readily.

The authors used study five to evaluate the Illinois Rape Myth Acceptance constructs with known groups (advocates for rape victims and police officers) who have shown in past literature to have differences in RMA scores. The RMA scores of the advocate group (9 men and 32 women) and the police group (24 men and 3 women) were statistically different, with advocates having lower RMA scores than police officers. Study six explored the relationship between the Illinois Rape Myth Acceptance scores and the content in rape stories. One hundred and twenty one students were invited to complete the Illinois Rape Myth Acceptance scale and 81 agreed to volunteer for the rape stories. Of that 81, 45 were included in the study based on their availability. All 45 participants were asked to write two stories, based on a rape scene and

another story about a person from a Native American or African American descent. The second story was not expected to be related to rape myths and was used only as a comparison for the rape story. Participants' stories were analyzed for content and results showed that they endorsed seven rape myth components and a range of empathy for the victim. RMA scores were found to correlate with the rape myths identified in the stories and the Illinois Rape Myth Acceptance scale. Additionally, there was a moderate negative correlation between empathy ratings and Illinois Rape Myth Acceptance scores. In summary, both the Illinois Rape Myth Acceptance and Illinois Rape Myth Acceptance Short Form had strong psychometric properties and demonstrated seven stable subcomponents that measured RMA.

#### Acceptance of Modern Myths about Sexual Aggression Scale

The Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale was developed by Gerger and colleagues (2007) to address criticisms of previous RMA measures. The authors expressed concerns about the skewed distribution in previous RMA measures such as the negative impact on correlation testing and experimental hypotheses. Additionally, they stated that low means made it difficult for sexual assault prevention interventions to detect beneficial effects because the RMA scores are already close to the bottom of the scale. Lastly, the authors found that low RMA scores did not necessarily mean that individuals endorsed fewer rape myths but rather were a reflection of individuals who may give politically correct responses. Building on past RMA research and modern sexual beliefs and racism research, the authors expressed that attitudes and beliefs about rape have become more subtle and covert than in the past. Gerger and colleagues (2007) proposed the AMMSA scale, a more updated measure of RMA, which incorporates subtle item wording to covert beliefs about rape, victims, policies regarding sexual assault, and male coercion. Additionally, Gerger and colleagues (2007) argued

that Lonsway and Fitzgerald's (1994) definition of rape myths was too broad and may not easily distinguish rape myths from general pro-violence attitudes (Gerger et al., 2007). They stressed that the emphasis should not be on labeling rape myths as 'false,' because that falsification criterion is difficult to determine. Instead, Gerger and colleagues stated that rape myths should have an ethical focus and be labeled as 'wrong.' Gerger and colleagues defined rape myths as *descriptive or prescriptive beliefs about rape (i.e., about its causes, context, consequences, perpetrators, victims, and their interaction) that serve to deny, downplay or justify sexual violence that men commit against women* (Bohner et al., 1998b, p. 14). Gerger and colleagues (2007) conducted a total of four studies to validate the German and English versions of the AMMSA scale.

The first study was to assess construct validity of the AMMSA scale with college students in Germany. The authors generated a pool of 60 items related to rape myths, which contained five content categories (a. denial of the scope of problem; b. antagonism toward victims' demands; c. lack of support of policies designed to help alleviate the effects of sexual violence; d. belief that male coercion forms a natural part of sexual relationships; e. beliefs that exonerate male perpetration by blaming the victim or circumstances). The research team reduced the number of items to 43 on a 7-point scale (totally disagree to totally agree) and tested the 43 items with 201 undergraduate students in Germany. In order to buffer against low mean scale items, items  $> 2.0$  in the female sample and items  $> 2.5$  in the male sample with item to total correlations  $r > .20$  were selected for the final pool, which resulted in 30 items. In order to establish construct validity for the AMMSA scale, the authors administered the Illinois Rape Myth Acceptance Short Form, and the Ambivalent Sexism Inventory (subscales Hostile Sexism and Benevolent Sexism), which yielded  $r = .79$  for the Illinois Rape Myth Acceptance Short

Form,  $r = .79$  for Hostile Sexism, and  $r = .53$  for Benevolent Sexism. Additionally, they established test-reliability of the AMMSA scale by sending the questionnaire to a select number of students four weeks after the initial study date. The test-retest reliability coefficient was  $r = .67$ . The overall internal consistency reliability of the AMMSA scale scores was  $\alpha = .90$  and the factor analyses revealed that it was measuring a unidimensional construct. Men scored higher on the AMMSA scale than women, but the findings were not statistically significant.

The goal of the second study was to assess construct validity between the AMMSA scale and related variables with male college students in Germany. Study two was conducted with 40 men from a university in Germany to examine the correlations between the 30-item AMMSA scale with the Illinois Rape Myth Acceptance Short Form scale, the Likelihood to Sexually Harass scale, and Burt's sociocultural attitude scales (Sex Role Stereotyping, Adversarial Sexual Beliefs, and Acceptance of Interpersonal Violence). Results revealed moderate to high positive correlations between the AMMSA scale and the other measures. Specifically, the Likelihood to Sexually Harass was  $r = .60$ , Sex Role Stereotyping ( $r = .75$ ), Adversarial Sexual Beliefs ( $r = .76$ ), and Acceptance of Interpersonal Violence ( $r = .77$ ) and the Illinois Rape Myth Acceptance Short Form ( $r = .88$ ).

The goal of study three was to validate the AMMSA scale with a more general sample of the German population. Study three was conducted with 190 passengers in a commuter train in Germany. Participants were asked to complete the AMMSA scale, Illinois Rape Myth Acceptance Short Form scale, an empathy scale, a Belief in a Just World scale, and an Impression Management scale. A retest was conducted four weeks later with 26 participants via email that also included additional measures such as the Social Dominance Orientation and Right Wing Authoritarianism scales. Correlations between the AMMSA and Illinois Rape Myth

Acceptance Short Form scales yielded  $r = .87$ , empathy scale yielded  $r = -.30$ , Belief in a Just World yielded  $r = .39$ , Social Dominance Orientation yielded  $r = .58$ , Right Wing Authoritarianism yielded  $r = .75$ , and Impression Management yielded  $r = .03$ . The overall internal consistency reliability of the AMMSA scale scores was  $\alpha = .92$ .

The goal of the fourth study was to assess construct validity for the German and English versions of the AMMSA scale with student and non-student populations. A total of 848 participants were recruited via the Internet. Two hundred and eighty-five German-speaking participants from Germany and Austria participated and 563 English-speaking participants from the United States, United Kingdom, Canada, and the Netherlands participated in the study. Most English-speaking participants were recruited from the United States (65.4%). Both groups were administered the AMMSA, Illinois Rape Myth Acceptance Short Form, Right Wing Authoritarianism, Social Dominance Orientation, Belief in a Just World, Impression Management, and Hostile and Benevolent Sexism scales. Both convergent and discriminant validity were established for the AMMSA scale in both groups. Two hundred and twenty-four participants participated in a retest four weeks later and were administered the AMMSA, Illinois Rape Myth Acceptance Short Form, Hostile Sexism, and Benevolent Sexism scales, and four scenarios related to sexual aggression. Additionally, all participants were administered a 16-item scale to measure victim blame, and only men completed a 4-item rape proclivity measure in order to establish predictive validity. Study four demonstrated that the AMMSA scale scores had good reliability and validity for both the German and English-speaking samples. Regarding predictive validity, victim blame and the AMMSA scale scores were positively correlated and significant for both women and men in each sample. However, there were specific differences between the samples. For example, rape proclivity was only found to be a significant predictor of

RMA in the German-speaking sample, but not in the English-speaking sample. Additionally, victim blame was significantly higher in English-speaking women compared to German-speaking women. The overall internal consistency reliability of the AMMSA scale scores for both English and German samples was  $\alpha = .92$  and the mean of the AMMSA scale scores revealed a normal distribution for both English and German samples. In summary, the AMMSA scale revealed strong psychometric properties for both English and German-speaking samples.

Researchers in Europe have used the AMMSA scale and sociocultural attitudes to explore various topics related to sexual assault. For example, Helmke and colleagues (2014) conducted a cross-cultural online study exploring social cognition related to sexual assault by using a key political figure, Dominique Strauss-Kahn (DSK) of France, who was accused of sexually assaulting a hotel employee. The authors sampled participants from the general population in France and Germany in the midst of the scandal to explore how beliefs about rape played a role in perpetrator exoneration. Participants were administered the AMMSA-Short Form (11 items) scale, a vignette describing the DSK case and four follow-up questions to evaluate perpetrator exoneration beliefs, a vignette of Lady Diana's death to evaluate the conspiracy theory, and the World Value Survey to evaluate political orientation. Scores on the AMMSA Short Form scale yielded high internal consistency for French ( $\alpha = .85$ ) and German ( $\alpha = .90$ ) participants. In France, men scored higher in RMA than women. However, there were no gender differences between perpetrator exoneration beliefs, conspiracy theory, and left-right wing political orientation. In Germany, men also scored higher in RMA than women and men were more likely than women to endorse perpetrator exoneration beliefs. German men agreed with fewer conspiracy theories than women and were no different from women in their political orientations. The French participants were more likely to exonerate DSK than German participants, and



nationalism was the main predictor. Overall, scores on the AMMSA scale were positively correlated with perpetrator exoneration beliefs for both French and German samples.

Researchers Sussenbach and Bohner (2011) also sought to explore the correlations of the AMMSA scale with demographic variables and sociocultural attitudes. They used the AMMSA Short Form scale (11 items) with 297 German participants (ages 16 to 90 years old) and found good internal consistency of scores on the abbreviated measure,  $\alpha = .79$ . The authors also explored how other factors such as demographic background, intolerant belief systems, right wing authoritarianism, gender identity, and social dominance orientation may serve as predictors for higher endorsement of RMA. They found that there were neither gender differences in RMA scores or the other measures. However, being older, living in East Germany, having a lower level of education and lower level of income predicted higher RMA in participants. Additionally, right wing authoritarianism, social dominance orientation, and benevolent sexism also served as predictors for higher RMA for all ages.

The use of the AMMSA scale emerged a few years ago to meet a new demographic need. Megias and colleagues (2011) sought to validate the AMMSA scale with 568 Spanish-speaking college students in order to have a modern assessment of rape myths in Spanish. The AMMSA scale was translated by a translator and psychologist into Spanish and back translated to English to establish accurate translation of the measure. The results showed that scores on the AMMSA (30 item scale) scale had high internal consistency,  $\alpha = .91$  with inter item correlations ranging from  $r = .21$  to  $.68$ . Men had higher AMMSA scale means than women. In order to establish construct validity, the researchers administered Burt's RMA scale, the Ambivalent Sexism Inventory scale, rape scenarios with items to assess victim and perpetrator blame, and a rape proclivity measure for only men. Scores on the AMMSA scale were positively correlated with

scores on Burt's RMA scale, Ambivalent Sexism Inventory, victim blame, and rape proclivity. Scores on the AMMSA scale were negatively correlated with responsibility attributed to the aggressor. Overall, the Spanish version of the AMMSA scale was found to be symmetrical with a one-factor structure, and possessed good internal consistency and construct validity. The strong psychometric properties showed that it was a good adaptation of the instrument.

#### Updated Illinois Rape Myth Acceptance Scale

Approximately a decade after the original Illinois Rape Myth Acceptance scale was published, McMahon and Farmer (2011) updated the Illinois Rape Myth Acceptance to use more modern language and capture more subtle rape myths. Similar to Gerger et al., (2007), McMahon and Farmer (2011) drew upon modern sexism research and believed that victim blaming rape myths have become subtler over time. The study consisted of two phases. First, the authors conducted three focus groups consisting of 2 groups with undergraduate student peer educators and one group of professionals who work with sexual assault victims on campus.

In order to capture specific item wordings, groups were asked to think of comments they heard from students about victim blaming. Next, they were given the 45-item Illinois Rape Myth Acceptance and were asked about the relevancy of the items and the language. The group findings yielded four of the seven subscales that were relevant (she asked for it; it wasn't really rape; he didn't mean to; she lied) and related to covert rape myths that focused on victim blaming and perpetrator vindication. McMahon and Farmer updated wording on the new measure to include words such as "slut" and "hooking up" to make the measure more relevant to their college sample. Additionally, they added four items to capture more subtle rape myths, which were added to the subscales "he didn't mean it" and "it wasn't really rape." The changes resulted in 27 items and four subscales. In order to verify the wording and comprehension of the

items in the updated measure, cognitive interviews were conducted with 100 undergraduate students, 50 graduate students, and a panel of experts. Feedback from the cognitive interviews resulted in additional changes to the updated measure and an item total of 22.

The second phase was to evaluate the psychometric properties of the updated measure. The 22-item measure was administered to 951 first year undergraduate students. The measure was evaluated using Exploratory Structural Equation Modeling (ESEM) for construct validity, MANOVA for criterion validity, and differential item functioning to explore the relationships between gender and other factors that may predict levels of RMA. ESEM showed that there were 5 subscales instead of the hypothesized 4 subscales. The additional subscale captured rape myths about alcohol. Three items were not found to load on any of the five factors and were subsequently eliminated, yielding a total of 19 items on the updated Illinois Rape Myth Acceptance scale. A MANOVA showed that gender was the only significant predictor for RMA levels. Scores on the updated Illinois Rape Myth Acceptance were found to have good internal consistency,  $\alpha = .87$  with scores on subscales that ranged from  $\alpha = .64$  to  $.80$ . McMahon (2010) used the 19-item updated Illinois Rape Myth Acceptance scale to explore RMA and bystander attitudes among 2,338 incoming college students. Results revealed that RMA was highest among participants who were male, participated in individual pledging for a fraternity or sorority, had no previous rape education, and did not know someone who had been sexually assaulted. Participants who were more likely to intervene as bystanders included women, individuals who had participated in previous rape education, and who knew someone who had been sexually assaulted. Scores on the updated Illinois Rape Myth Acceptance revealed good internal consistency,  $\alpha = .86$ , with subscales that ranged from  $\alpha = .60$  to  $.83$ .

The RMA literature has shown a steady improvement of RMA measures over time. Burt's (1980) RMA scale and attitude scales were the first scales to explore rape myths and sociocultural attitudes within a general adult population. Burt's work provided a construct for how to operationalize attitudes and beliefs about rape, and in turn provided a way to study sexual assault. Payne and colleagues (1999) developed the Illinois Rape Myth Acceptance and Illinois Rape Myth Acceptance Short Form scales almost 20 years later to fill the gaps they identified in Burt's RMA scale. These authors began to examine the structure of rape myths, which resulted in seven distinct rape myth subcomponents that were related to victim blaming and perpetrator vindication.

The Illinois Rape Myth Acceptance and Illinois Rape Myth Acceptance Short Form scales demonstrated strong internal reliability and also demonstrated good convergent validity with Burt's sociocultural attitude scale scores. Ten years after the development of the Illinois Rape Myth Acceptance and Illinois Rape Myth Acceptance Short Form scales, McMahon and Farmer (2011) sought to update the Illinois Rape Myth Acceptance scale by modernizing the language in the scale and by adding subtler rape myths to reflect contemporary views about rape. McMahon and Farmer (2011) validated the updated Illinois Rape Myth Acceptance and identified five subcomponents of rape myths that captured covert rape myths that sought to blame victims and vindicate perpetrators. The authors identified a new rape myth subcomponent, which included myths about rape and alcohol use. The AMMSA scale by Gerger and colleagues (2007) was another modern RMA scale that built on previous RMA research and incorporated modern sexism and racism research. The AMMSA scale has been different from other RMA measures in that it does not focus exclusively on rape myths. It is more of an amalgam of previous RMA and sociocultural attitude scales. The AMMSA scale includes items about the

denial of rape as a problem in society, antagonistic views toward victims, beliefs about public policy to support for sexual assault victims, attitudes about male coercion in sexual encounters, and subtler items to explore beliefs that exonerate perpetrators of sexual assault by blaming women (Gerger, et al., 2007). With each iteration, RMA measures have improved their psychometric properties and their ability to explore more covert attitudes about rape.

### Victims' and Non-Victims' Rape Myth Acceptance Levels

Comparisons between RMA levels of victims and non-victims using older measures have shown mixed results. For example, Carmody and Washington (2001) used Burt's Rape Myth Acceptance scale and Peterson and Muehlenhard (2004) used the Illinois Rape Myth Acceptance scale and found that there were no differences in rape myth acceptance levels between victims and non-victims. Hackney (2012) found that overall RMA levels on the Illinois Rape Myth Acceptance scale between female sexual assault victims and non-victims were similar, but victims reported significantly lower levels of endorsement on three of the Illinois Rape Myth Acceptance subscales, and the effects were large (Cohen's *d* of 1.23 to 1.42). Specifically, sexual assault victims reported a lower belief in the rape myths "She Wanted It," "Rape is a Trivial Event," and "Rape is a Deviant Event." Sexual assault victims also reported lower levels of victim blame and higher levels of victim credibility than non-victims (Hackney, 2012). In this study, however, there were only 9 female victims of sexual assault and 40 female non-victims, so the results should be interpreted with caution. Vonderhaar and Carmody (2015) found that in a sample of 608 women, 90 were victims of sexual assault victimization and that there were differences between RMA levels in victims and non-victims. The authors used Burt's RMA scale to measure RMA levels and found that victims scored lower in RMA than non-victims. The authors attributed the lower RMA levels among victims to the change in social climate in the

U.S. such as legal system becoming more stringent about arresting and convicting sexual assault offenders, which would in turn may encourage victims to come forward with crimes and endorse fewer rape myths.

In another study, Watson, Chastang and Hackney (2014) used both the AMMSA and Illinois Rape Myth Acceptance scales and found that sexual assault victims reported statistically higher rape myth acceptance levels than non-victims when victimization status was defined as occurring within the last year. The authors conducted a study with 185 college females and asked various questions about sexual assault victimization. One question asked “have you ever been physically forced to have sexual intercourse when you did not want to?” In response to this question, there were no differences in RMA levels as measured by either the AMMSA scale or the Illinois Rape Myth Acceptance scale between the 27 women who had experienced forced sexual intercourse and the 185 women who had not experienced forced sexual intercourse. A separate question, however, asked whether “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do?” Participants were instructed to count such things as kissing, touching, or being physically forced to have sexual intercourse. The question did not differentiate acquaintance or stranger rape. Women who reported experiencing any forced sexual contact from a date during the last year ( $n = 35$ ) reported significantly higher levels of RMA on both the Illinois Rape Myth Acceptance and AMMSA scales than women who did not report any forced sexual contact from a date ( $n = 148$ ). In other words, the levels of RMA between victims and non-victims differed depending upon whether participants were reporting forced sexual intercourse by anyone at any time in their life or forced sexual contact by a date within the last 12 months.

In examining RMA within sexual assault victims, studies show variability. Egan and Wilson (2012) found that rape victims who did not report the crime to the police endorsed higher rape myth acceptance and higher levels of internal locus of control compared to rape victims who reported the crime and endorsed lower rape myth acceptance and lower levels of internal locus of control. The findings indicate that rape victims who do not report the assault may be engaging in self-blame behavior and may be endorsing higher RMA to justify those self-blaming beliefs (Egan & Wilson, 2012). Another study of female rape victims, undergraduate women were asked whether they had ever experienced situations that met the legal definition of rape in the state of Kansas, but the word rape was not provided. Women who had experienced the legal definition of rape were invited to participate in a second phase of the study. During phase two, rape victims reported whether they had ever been raped and completed the Illinois Rape Myth Acceptance scale.

How individuals label their sexual assault experiences has also been another point of discussion in the literature. Peterson and Muehlenhard (2004) hypothesized that women would be less likely to label their experience as rape (unacknowledged rape victims) if they were higher in the endorsement of a specific rape myth (i.e., if a woman doesn't fight back, you can't really say it was rape) and they had experienced a rape under that circumstance (i.e., the woman didn't fight back), than if they were higher in the acceptance of the myth but had not experienced a rape under that circumstance, or if they were lower in the acceptance of the myth. The results showed this predicted interaction between levels of specific Illinois Rape Myth Acceptance scale items and circumstances surrounding the rape for two of the 18 tested rape myths, women who sexually tease are asking for trouble, and if a woman doesn't fight back, it's not rape. Peterson and Muehlenhard (2004) found that rape victims' who did not consider the nonconsensual

activity to be sex were also less likely to label their experience as rape compared to victims who labeled the experience as sex. The results of this study suggest that women who experience a rape under circumstances related to an endorsed rape myth may not recognize the experience as rape, or may be unwilling to label it as such to others. It also seems possible that some women who experience rape may either blame themselves for the rape, or may be unwilling to view the perpetrator as a rapist, and consequently may come to endorse higher levels of rape myths as a way to understand the experience. However, given that only 2 of the 18 tested interactions were significant, and the increased chance of a Type I error with multiple tests, further investigation in this area is needed.

The severity of victimization history and RMA levels has also been studied to determine if these factors combine to influence risk judgments (Yeater, Treat, Viken, & McFall, 2010). Female rape victims reported victimization history and completed Burt's Rape Myth Acceptance scale and made assessments of sexual assault risk in different social situations. The results showed that higher endorsement of RMA predicted lower sensitivity to risk information. Additionally, women who had more severe victimization histories compared to women with less severe victimization histories viewed fewer situations as high risk and relied less on victimization risk information. Lastly, the results showed that after being exposed to a popularity condition (how much a woman was valued, liked or socially accepted), women high in RMA judged fewer high-risk situations as risky. Yeater and colleagues (2010) emphasized that there are individual differences in how women evaluate risk. These findings support the importance of not viewing rape victims as a homogenous group particularly when conducting sexual assault research.



There are mixed findings in the literature regarding differences in RMA between sexual assault victims and non-victims, which demonstrate the need for more research to assess these two groups. Consistent findings can help guide sexual assault research and develop targeted sexual assault prevention programs. Additionally, the variability between victims and timeframe of victimization provides support for the need to explore how timeframe may influence how victims evaluate their own experiences, conceptualize rape myths and endorse certain types of rape myths. Exploring the variability among victims also may provide insight into how to reduce re-victimization among victims.

### System Justification Theory

An understanding for why victims of sexual assault may endorse RMA can be found in System Justification Theory. System Justification Theory states that there is a psychological benefit to both advantaged and disadvantaged groups when they support ideologies that the system they live in is fair, balanced and legitimate (Jost & Kay, 2005). The advantaged group may experience an increased sense of well-being, self-esteem, and in-group favoritism and the disadvantaged group may experience trust and hope in the system they live in (Jost & Hunyady, 2005). The belief system of both groups maintains the status quo because members of the groups find ways to rationalize the unequal advantages or disadvantages they each experience. System justification provides a psychological approach for individuals to manage societal inequalities and resolve cognitive dissonance in order to live comfortably within the systems in which they interact.

The challenge with system justification is that individuals who support the status quo are less likely to make any changes to improve it (Jost & Hunyady, 2005). As a result, rather than managing the source of the cognitive dissonance, individuals tend to seek ways to justify the

inequalities that exist. System Justification Theory has been used in many other areas of research including religion, social and economic equality, meritocracy, Protestant work ethic, social dominance, belief in a just world, right wing authoritarianism, and fair market ideology, and it has been extended to gender inequality (Jost & Kay, 2005). Jost and Kay (2005) used principles of the System Justification Theory to develop Gender-Specific System Justification theory, which states that individuals tend to rationalize gender stereotypical roles as a way to support the belief that gender equality exists and is practiced in American society. Jost and Kay (2005) conducted an experimental study with men and women and revealed that exposure to complimentary gender stereotypes for women and men led to higher acceptance of Gender-Specific System Justification. For example, when women were exposed to gender-specific characteristics such as warm, sociable, interdependent, and relationship oriented and men were exposed to characteristics such as competent, assertive, independent, and achievement oriented, they viewed these characteristics for their respective gender in a positive (complimentary) way; hence, both groups maintained the status quo that gender roles are equal (Jost & Kay, 2005). The authors posit that exposure to complimentary stereotypes would have a “carry over” effect that may influence how individuals endorse other gender stereotypes.

To illustrate the “carry over” effect, Chapleau and Oswald (2013) sought to examine the association between Gender-Specific System Justification and rape myth acceptance. They hypothesized that if women and men endorsed higher levels of Gender-Specific System Justification, they in turn would endorse higher levels of rape myth acceptance, supporting the belief that sexual violence was a justified act. The authors defined rape myths as a form of system justification similar to gender inequality. Chapleau and Oswald (2013) found that Gender-Specific System Justification accounted for a significant portion of the variance in rape

myth acceptance for both men and women. The findings suggest that the justification of rape, rooted in the belief that women and men are treated equally in American culture, sends the message that women are at minimal risk of being sexually victimized by someone of the other sex. This type of faulty thinking is in line with Bohner and colleagues' (2004) finding that states that women who tend to score high on rape myth acceptance, tend to view themselves as immune to sexual assault because it only happens to "certain women." They tend to cognitively distance themselves from the threat of rape, which in turn decreases their perceived risk of sexual assault (Bohner, Danner, Siebler, & Samson, 2002).

Rape myth acceptance and maintenance of these Gender-Specific System Justification beliefs among women is particularly problematic because women are caught in the web of blaming each other or themselves for sexual violence perpetrated against them. As a result, women may be less apt to advocate for sexual violence prevention, resources, and laws to protect women and girls. Rape myth acceptance coupled with Gender-Specific System Justification among men serves to maintain men's dominant gender role in American culture, and the implicit message that sexual violence is a woman's issue and men do not contribute to gender inequalities and rape myth beliefs.

The literature has consistently reported that high rape myth acceptance among men is strongly correlated with high sexual aggression toward women (Bohner et al., 2005; Bohner et al., 1998; Chapleau & Oswald, 2010). Based on the literature, addressing rape myth acceptance and gender-specific justification among men and women may aid in moving the field of sexual violence research forward. Additionally, it is important to understand whether victims and non-victims hold gender-specific justification beliefs.

The consequence of victims and non-victims having similar beliefs about gender equality and endorsing beliefs about gender equality is that a decrease in rape myths and sexual assault crimes are less likely to occur. Essentially, if women do not take a collective stand against gender inequality and beliefs that serve to oppress all women, then the impression this gives broader society is that sexual assault is not a real issue.

### Summary and Current Study

As demonstrated previously, the results from studies that assess RMA vary depending on the measure of RMA. In order to improve the quality of RMA measures, further examination of psychometric properties is necessary. Ensuring that measures are validated cross culturally is an important step in doing so. The AMMSA scale is a newer RMA measure, which has shown robust psychometric properties in its validation within other cultures (Megías et al., 2011; Romero-Sanchez et al., 2013; Süssenbach & Bohner, 2011); however, it has not been used much in the U.S.

Cross-cultural research experts recommend variations of methodological steps including instrument translation, synthesis of the translated version, synthesis evaluation by experts, instrument evaluation by the target population (cognitive interviewing), back translation, and a pilot study to adapt psychological and educational instruments for different linguistic and cultural contexts (Beaton et al., 2000; Hambleton & Kanjee, 1995; International Test Commission, 2005; Sousa & Rojjanasrirat, 2011). Cognitive aspects of survey methodology (CASM) is an important tool that is often incorporated in cross-cultural research because it strives to improve the quality of research surveys by exploring respondents' comprehension of the question items and their cognitive processes in responding to question items. Cognitive interviews are the most widely used CASM tool that engages respondents in think aloud

procedures and paraphrase tasks (Schwarz, 2007). It is a commonly used strategy in survey research to identify and correct problems with survey questions (Beatty & Willis, 2007) and consequently improves questionnaire interpretation (Ryan et al., 2012) and provides validity evidence for respondents' response processes (Castillo-Diaz & Padilla, 2013). Considering the linguistic and cultural differences between Germany and the United States, following the recommended cross-cultural scale adaptation processes would be beneficial in evaluating the psychometric properties of the AMMSA scale within a U.S. college sample. It was equally important to conduct preliminary cultural validations with the other measures to ensure clear and accurate comprehension of the individual items. The measures selected to examine convergent and discriminant validity have been used with college students but most of the measures are dated. Consequently, all the scales selected to explore the convergent and discriminant validity of scores on the AMMSA scale were included in the cognitive interview and pilot testing process.

The current study explored the psychometric properties of the AMMSA scale by using a sample of male and female college students at a large rural public university in the Southeastern United States. Convergent validity was assessed using the updated Illinois Rape Myth Acceptance scale (McMahon & Farmer, 2011), four of Burt's social attitude scales (Acceptance of Interpersonal Violence, Sexual Conservatism, Sex Role Stereotyping, Adversarial Sexual Beliefs), and the Gender Specific System Justification scale. Discriminant validity was assessed using the Impression Management and Sexual Health Knowledge scales. The study consisted of three phases. The first phase used individual cognitive interviews with college students to verify the comprehension and clarity of the individual items throughout all the survey items and to make revisions to the survey based on participant feedback and research expert reviews. The

second phase consisted of a pilot test of the revised items with a small sample of college students. The last phase, the main study, was to test the revised scales with a larger college sample, evaluate the psychometric properties of the AMMSA scale, and examine the study's hypotheses.

Only undergraduate students enrolled full-time between the ages of 18 and 25 were included in the final sample. Most research studies conducted with college samples often include participants older than age 25, (Aronowitz, Lambert, & Davidoff, 2012; Buddie & Miller, 2002; Mason et al., 2004; Suarez & Gadalla, 2010; Vonderhaar & Carmody, 2015) which run the risk of skewing the data if age is not controlled. This could be potentially problematic because research shows that older participants tend to endorse lower rape myths than younger participants (Suarez & Gadalla, 2010; Vonderhaar & Carmody, 2015). The purpose of the age restriction in this study was to provide a more accurate examination of rape myths and related sociocultural attitudes within traditional college-aged students.

Another unique aspect of this study is that participants were not recruited exclusively from introductory Psychology courses but also from nine other academic departments on campus. Third, this is one of the few studies to assess convergent and discriminant validity of the AMMSA scale with college students in the U.S. and specifically in the Southeastern part of the country. To the author's knowledge, this is the only study that has incorporated cognitive interviewing and pilot testing in the preliminary stages of the AMMSA scale validation process, which are important steps to bolster construct validity in test instruments (Castillo-Diaz & Padilla, 2013). It is also the first study to incorporate Gender Specific System Justification with three other sociocultural attitude scales (Adversarial Sexual Beliefs, Sexual Conservatism, and Sex Role Stereotyping) to assess the AMMSA scale's convergent validity with a U.S. college

sample. Additionally, it contributes to the literature in its study of RMA levels between victims and non-victims and assesses whether the relationships between AMMSA scores and sociocultural variables depend upon victimization status. Lastly, this study explored different time periods of sexual assault victimization (lifetime versus within the past 12 months that contain both a finite and broad definition of sexual assault) among victims to help tease apart the recency of the event and its potential influence on the endorsement of rape myths.

### Research Questions and Hypotheses

Research Question 1: Will the AMMSA scale demonstrate convergent and discriminant validity in an Anglophone U.S. college sample?

Hypothesis 1: It was hypothesized that scores on the AMMSA scale would be strongly correlated with scores on the updated IRMA, Adversarial Sexual Beliefs, Acceptance of Interpersonal Violence, Sex-Role Stereotyping, Sexual Conservatism, and Gender-Specific System Justification scales. It was also expected that scores on the Impression Management scale would have a low correlation with scores on the AMMSA scale and scores on the Sexual Health Knowledge scale would have a negative correlation with scores on the AMMSA scale.

Research Question 2: Do young adult women with a history of prior sexual assault victimization have different rape myth acceptance levels than young adult women who do not have such a history?

Hypothesis 2: Based upon the results of Watson, Chastang, and Hackney (2014), it was expected that female sexual assault victims and non-victims would score similarly on the AMMSA when victimization was defined as any experience of forced sexual assault in the lifetime of the woman. However, when victimization was defined as forced kissing, touching, or

sex from a date within the past 12 months, it was expected that victims would score higher on the AMMSA than non-victims.

Research Question 3: Does victimization status moderate the relationship between sociocultural attitudes and rape myth acceptance?

Hypothesis 3:

The association between sexual conservatism and rape myth acceptance will not be moderated by lifetime victimization status.

The association between adversarial sexual beliefs and rape myth acceptance will not be moderated by lifetime victimization status.

The association between sex role stereotyping and rape myth acceptance will not be moderated by lifetime victimization status.

The association between Gender Specific System Justification and rape myth acceptance will not be moderated by lifetime victimization status.



## CHAPTER 3: METHODOLOGY

Before conducting data collection, written permission was received from the Georgia Southern University's Institutional Review Board (IRB). The study was carried out in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 2002). In order to address the first research goal, an exploration of the AMMSA scale's internal consistency and external validity, strict cross-cultural scale validation methods were followed according to measurement researchers in the field (Beaton et al., 2000; Hambleton & Kanjee, 1995; International Test Commission, 2005; Sousa & Rojjanasrirat, 2011). Considering the AMMSA scale's translation from German and limited use in the U.S., the researcher wanted to ascertain aspects of the reliability and validity of scores from the measure before examining other hypotheses. The study was divided into three phases. Data were collected from January to March 2015.

### Phase I: Cognitive Interviews

The cognitive interview is a commonly used strategy in survey research to identify and correct problems with survey questions (Beatty & Willis, 2007). The main emphasis of the cognitive interviews with current college students was to evaluate all the scales intended for assessing convergent and discriminant validity of the AMMSA scale.

### Participants

Participants were recruited from psychology courses at a large rural public Southeastern university in the U.S. via the SONA System, an online participant recruitment management system that is used for research studies in the Department of Psychology. Nine undergraduate students participated in the in-person cognitive interviews (3 men and 6 women). Five

participants self-identified as Caucasian and four self-identified as African American. The age of the sample ranged from 18 to 24, ( $M = 19.6$ ,  $SD = 1.73$ ). Participants were awarded course research credit or extra credit for completion of the study.

## Measures

Participation in the study involved the completion of an online survey, which included the following measures: (a) the Acceptance of Modern Myths about Sexual Aggression (AMMSA), (b) the updated Illinois Rape Myth Acceptance, (c) Adversarial Sexual Beliefs, (d) Sex Role Stereotyping, (e) Sexual Conservatism, (f) Acceptance of Interpersonal Violence, (g) Gender Specific System Justification, (h) Impression Management, and (i) Sexual Health Knowledge scales. Demographic data were also collected. Demographic information included: age, gender, race, and academic major. Completion time for the survey was approximately 60 minutes.

**The Acceptance of Modern Myths about Sexual Aggression scale** (AMMSA; Gerger, et al., 2007). The AMMSA scale is a 30-item measure designed to assess rape myth acceptance levels. The scale includes five content categories (a. denial of the scope of problem; b. antagonism toward victims' demands; c. lack of support of policies designed to help alleviate the effects of sexual violence; d. belief that male coercion forms a natural part of sexual relationships; e. beliefs that exonerate male perpetration by blaming the victim or circumstances). Sample questions include, "When it comes to sexual contacts, women expect men to take the lead" and "A lot of women strongly complain about sexual infringements for no real reason, just to appear emancipated." Each item is measured on a 7-point Likert scale that range from completely disagree (1) to completely agree (7). Scores were evaluated using mean values. Scale scores were summed and averaged, with higher scores indicating greater

endorsement of rape myth acceptance and lower means indicate low endorsement of rape myth acceptance. Scores on the AMMSA scale have been found to have excellent internal consistency ( $\alpha = .90 - .95$ ; Gerger et al., 2007) with both college and non-college samples. The AMMSA scale has demonstrated good construct validity with other rape myth acceptance measures such as the IRMA-SF, concurrent construct validity ( $r = .79 - .88$ ; Gerger et al., 2007).

**Updated Illinois Rape Myth Acceptance scale** (McMahon & Farmer, 2011). The updated Illinois Rape Myth Acceptance scale is a 19-item self-report measure with five subscales (a. she asked for it; b. he didn't mean to; c. he didn't mean to (intoxication items); d. it wasn't really rape; e. she lied) developed to assess rape myth acceptance. Sample questions include "Rape happens when a guy's sex drive goes out of control" and "If a girl doesn't physically fight back, you can't really say it was rape." Each item was measured on a 5-point Likert scale that range from strongly disagree (1) to strongly agree (5). However, due to researcher error, a 6-point Likert scale from the original Illinois Rape Myth Acceptance scale (Payne, Lonsway, & Fitzgerald, 1999) ranging from strongly disagree (1) to strongly agree (6) was used instead of the 5-point Likert scale used by McMahon and Farmer. Scores were evaluated using mean values. Scale scores were summed and averaged, with higher scores indicating greater endorsement of rape myth acceptance and lower scores indicating lower endorsement of rape myth acceptance. Scores on the updated Illinois Rape Myth Acceptance scale has been found to have good internal consistency ( $\alpha = .87$ ; McMahon & Farmer, 2011) with college samples. The internal consistency of the five subscales ranged from  $\alpha = .64$  to  $.80$ .

**Burt's Sociocultural Attitude Scales** (Burt, 1980) consist of four different measures that have been found to be positively correlated with rape myth acceptance. Scores on three of the four sociocultural attitude scales have shown good internal consistency, including scores on the

Adversarial Sexual Beliefs scale ( $\alpha = .80$ ; Burt, 1980), scores on the Sex Role Stereotyping scale ( $\alpha = .80$ ; Burt, 1980), and scores on the Sexual Conservatism scale ( $\alpha = .81$ ; Burt, 1980). Scores on the Acceptance of Interpersonal Violence scale have shown a range of low to moderate internal consistency. Burt (1980) reported Acceptance of Interpersonal Violence scores with  $\alpha = .59$  and Gerger et al., (2007) reported  $\alpha = .77$ . Each sociocultural attitude scale has between six and nine items with 7-point Likert scale responses ranging from strongly disagree to strongly agree. Scores were summed and averaged, with higher scores indicating greater endorsement of the constructs and lower scores indicating lower endorsement of the constructs. Adversarial Sexual Beliefs measures views that sexual relationships are exploitative. An example of the Adversarial Sexual Beliefs measure is “Men are only out for one thing.” Acceptance of Interpersonal Violence measures the view that force and coercion are fundamental to intimate and sexual relationships. An example of the Acceptance of Interpersonal Violence measure is “Being roughed up is sexually stimulating to many women.” Sex Role Stereotyping measures traditional gender views. An example of Sex Role Stereotyping is “A woman should be a virgin when she marries.” Due to researcher error, an item on the Sex Role Stereotyping scale was omitted. Sexual Conservatism measures the expectations of appropriate behavior between sexual partners. An example of the Sexual Conservatism is “A woman shouldn’t give in sexually to a man too easily or he’ll think she’s loose.”

**Gender Specific System Justification scale** (Jost & Kay, 2005). The Gender Specific System Justification scale is an 8-item measure designed to evaluate views on gender equality. Sample items include, “In general, relationships between men and women are fair” and “Sexism in society is getting worse every year.” Each item is measured on a 9-point Likert scale ranging from “strongly disagree” to “strongly agree.” Scores are evaluated using mean values. Scale

scores were summed and averaged, with higher scores indicating greater endorsement of gender inequality and lower scores indicating lower endorsement of gender inequality. Scores on the Gender Specific System Justification scale have been found to have lower internal consistency, but close to the traditionally viewed acceptable level of .70 ( $\alpha = .65$ ; Jost & Kay, 2005).

**The Impression Management scale** (Paulhus, 1984) is a 10-item questionnaire with true/false response options. Scale scores were summed and averaged, with higher scores indicating greater endorsement of impression management and lower scores indicating lower endorsement of impression management. The measure seeks to explore how individuals attempt to control how others perceive them. Items on the measure include, “I always apologize to others for my mistakes” and “I never attend a sexy show if I can avoid it.” Scores on the IM scale have an internal consistency between  $\alpha = .77$  and  $.85$  (Stöber, Dette, & Musch, 2002). Due to a researcher error, the wrong response options were used. Instead of true/false responses, a 7-point Likert scale ranging from strongly disagree to strongly agree was used.

**The Sexual Health Knowledge scale** (Carrera, Kaye, Philliber, & West, 2000) is a 33-item questionnaire with true/false response choices. Scores were summed, with higher scores indicating a greater level of knowledge. Due to a researcher error, one item on the measure was omitted from the scale, resulting in a 32-item measure for the current sample. The measure is designed to assess knowledge regarding human reproduction and contraception. This instrument has been used primarily with adolescents to evaluate sexual health programs. Aronowitz and colleagues (2012) have found the Sexual Health Knowledge scale to have a reliable alpha of  $.89$ . Items on the measure include, “Girls cannot get pregnant the first time they have sex” and “Urination and menstruation occur through the same opening in the vagina.” Aronowitz, Lambert, and Davidoff (2012) utilized the Sexual Health Knowledge scale with a college sample

to measure rape myth acceptance, and the results revealed that high sexual health knowledge was negatively correlated with rape myth acceptance ( $r = -.28$ ).

### Procedure

Participants completed the study individually. Prior to participating, the researcher reviewed the informed consent form with the participant, requested written consent, and provided the participant with a copy for personal records. Each in-person cognitive interview lasted 60 minutes.

There were 156 survey items. The researcher read each survey item aloud and asked participants to assess the items for clarity, flow, and comprehension. The question probes for select survey items were predetermined by the researcher and a committee member who had cross-cultural scale adaptation experience. Sample question probes included “Can you repeat the question in your own words?” and “What does the term \_\_\_\_\_ mean to you?”

### Results

Results are organized by participants’ feedback on individual scales.

**AMMSA scale** (Gerger et al., 2007): Students reported that they had difficulty with the following words and expressions: “woman’s misgivings,” “sexual infringements,” “release sexual pressure,” “allusions,” “coy,” “conjugal,” “well-meant gesture,” and “really sexually assault women.” Participants suggested using simpler words and phrasings to add clarity to the items, but did not have specific suggestions. They also noted that some of the sentences were very long and required a long time to process the information.

**Updated Illinois Rape Myth Acceptance scale** (McMahon & Farmer, 2011): For this scale, participants felt that the term “hooking up” had multiple meanings for their peers, such as referring to sexual intercourse or intimate contact without sexual intercourse.

**Adversarial Sexual Beliefs scale** (Burt, 1980): Participants only reported one change on the Adversarial Sexual Beliefs scale. They noted that they were unfamiliar with the word “henpecked” and that a definition for henpecked should be provided in the Adversarial Sexual Beliefs scale.

**Acceptance of Interpersonal Violence scale** (Burt, 1980): Participants reported that they were unfamiliar with the expression, “an eye for an eye and a tooth for a tooth.” They also noted difficulty understanding the meaning of “cold woman” in the following sentence: “Sometimes the only way to get a cold woman turned on is to use force.” Other challenging words and phrases in the Acceptance of Interpersonal Violence scale included “eye for an eye and tooth for a tooth,” “being roughed up is sexually stimulating to many women,” “loose,” and “get a cold woman turned on.” Some participants noted that the term “loose” was outdated and that other students may not know what it means.

Participants reported that they did not have any difficulty with the remaining measures so no other feedback was included. A qualitative content analysis was used to identify common themes in the cognitive interviews (Hsieh & Shannon, 2005). Common themes, noted by at least 30% of the sample, were considered and used to adapt the measure. Committee members served as expert reviewers and modified the language while still maintaining the integrity of the original phrasing or words. For example, more modern language was placed in parentheses beside the

original phrasing or words. See Table 1 for examples of all changes made to the AMMSA, Adversarial Sexual Beliefs, and Acceptance of Interpersonal Violence scales.

## Phase II: Pilot Study

The purpose of Phase II of the study was to pilot the adapted measures. The pilot was an online survey that contained four evaluation questions at the end of the survey. Students completed the survey anonymously and were asked how well they understood the wording of the items, invited to offer suggestions for ways to improve the survey, asked to comment on the organization of the survey, and invited to provide feedback on anything they did not like about the survey.

## Participants

Participants were recruited from psychology courses at a large public Southeastern university in the U.S. via the SONA System, an online participant recruitment management system that is used for research studies in the Department of Psychology. In the SONA System there is an option for exclusion and inclusion participant criteria. The researcher selected the option to exclude participants who had completed the cognitive interviews to avoid data contamination. Individuals who were interested were provided the survey link to Qualtrics, an online survey software. Participants were invited to complete the informed consent electronically and asked to give consent before participating in the study. At the end of the survey, participants were asked to send an email to an email address set-up specifically for the study to verify their participation in the study. This method allowed the data collection to remain anonymous and allow participants to be awarded course research credit or extra credit for completion of the study. Twenty-eight undergraduate students (4 men and 24 women) participated in the pilot of the online survey. Eighteen (64.3%) self-reported as Caucasian, 8 (28.6%) as African American,



1 (3.6%) as American Indian/Alaska Native, 1 (3.6%) as Asian, and one participant indicated, “other.” The age of the sample ranged from 18 to 23, ( $M = 19.5$ ,  $SD = 1.55$ ).

## Measures

Participation in the study involved the completion of an online survey, which included the following measures: (a) the Acceptance of Modern Myths about Sexual Aggression (AMMSA), (b) the updated Illinois Rape Myth Acceptance, (c) Adversarial Sexual Beliefs, (d) Sex Role Stereotyping, (e) Sexual Conservatism, (f) Acceptance of Interpersonal Violence, (g) Gender Specific System Justification, (h) Impression Management, and (i) Sexual Health Knowledge scales. See pages 65 to 69 for all the measures. Demographic data were also collected. Demographic information included: age, gender, race, academic major, academic level, athletic team membership, family income, relationship status, sexual orientation, community of origin (rural, urban, suburban), and prior and vicarious victimization. Prior victimization was evaluated using two questions: “Have you ever been physically forced to have sexual intercourse when you did not want to?” and “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do, including kissing, touching, or being physically forced to have sexual intercourse?” The response options for “Have you ever been physically forced to have sexual intercourse when you did not want to?” were a) yes or b) no. The response options for “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do, including kissing, touching, or being physically forced to have sexual intercourse?” were: a) I did not date or go out with anyone during the past 12 months, b) 0 times, c) 1 time, d) 2 or 3 times, e) 4 or 5 times, f) 6 or more times. Completion time for the survey was approximately 30 minutes.

## Procedure

Students were first asked to complete the entire survey by providing their individual responses to the items. The online survey included all the measures (AMMSA, updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Acceptance of Interpersonal Violence, Gender Specific System Justification, Impression Management, and Sexual Health Knowledge scales). The measures were followed by demographic questions. At the end of the survey, participants were given four open-ended questions, allowing them to freely respond to each prompt. Questions included: a) “How well did you understand the wording of the individual items,” b) “What changes, if any, would you suggest to improve the survey?” c) “What do you think of the organization of the questions? Specifically, what did you think about the order of the questions?” d) “What did you not like about the survey?”

## Results

Participants provided general feedback about the survey instrument rather than feedback on individual scales. The large majority of the participants (86%) reported that the items in the survey were worded clearly. Suggestions for how to improve the instrument included making the survey shorter (13%), and using easier words throughout the survey (9%). When asked about organization of the survey items, 80% of participants stated that the survey was well organized and did not need improvement. The remaining participants (16%) did not offer feedback. Of the 23 participants who answered the question about aspects they did not like about the survey, 39% reported that they liked the survey as is, and 22% reported that the survey was too long.

A qualitative content analysis (Hsieh & Shannon, 2005) was used to identify common themes in the four open-ended questions at the end of the pilot survey. The researcher and

committee members reviewed the feedback from the participants. Due to the low frequency of comments of how to improve the survey, no changes were made to the final survey.

### Phase III: Main Study

The purpose of Phase III was to administer the adapted instrument in order to a) explore convergent and discriminant validity of scores on the AMMSA scale in an Anglophone U.S. college sample, b) compare rape myth acceptance among female sexual assault victim and non-victim American college students, and c) determine if the relationships between the AMMSA scale and the socio-cultural attitudes variables depend upon victimization status.

### Participants

To increase the heterogeneity of the data sample, participants were recruited from two separate data collection pools. The first pool included undergraduate participants from psychology classes who were recruited through the SONA System. The second pool included undergraduate students who were recruited from other academic departments on campus. The researcher emailed faculty in nine different departments requesting their assistance with data collection and their willingness to award extra credit for participation. The researcher shared the Qualtrics link with faculty via email. At the end of the survey, participants were asked to send an email to the study's email address to verify their participation in the study. Participants from the psychology department were awarded course research credit or extra credit and participants from other academic departments received extra credit from their instructors for participating in the study.

Data for the current study were collected from a sample of 430 undergraduate college students from a large public Southeastern university in the U.S. In order to improve the validity of the data, five catch items were used throughout the instrument to verify participants' attention

to individual items. Participants had to score at least an 80% on the catch items to be included in the analysis. Forty-five participants did not meet this 80% criterion and were removed from the study for inattention to the survey items. Additionally, 15 participants older than 25 years old and 3 people who did not provide their age were removed from the study. Participants older than 25 years old were removed from the study because they did not fit the scope of the research with college-aged students (18 to 25 years old). These removal processes resulted in a final sample of 367 participants. The age of the sample ranged from 18 to 25, ( $M = 20.22$ ,  $SD = 1.50$ ). Two hundred and sixty participants (70.8%) were female and 106 (28.9%) were male. One participant responded as “other” in response to this question. Two hundred and thirty eight participants (64.9%) self identified as White or European American, 104 (28.3%) as Black or African American, 19 (5.2%) as biracial or multiracial, three participants identified as Asian (.8%) and three participants did not provide a response to the race prompt. Forty-six (12.5%) of the participants were psychology majors and 321 (87.4%) non-psychology majors. Sixty-six participants (18%) identified as being from a rural area, 187 (51%) a suburban area, and 112 (30.5%) an urban area. Two participants did not answer the question. One hundred fifty-seven participants (42.8%) reported knowing close friends or family members who had been a victim of sexual assault. Additionally, 61 (23.4%) women and 9 (8.5%) men reported being a victim of sexual assault in their lifetime. Two hundred and twenty-two female participants reported having dated someone in the past 12 months. Of that number, 171 (65.8%) reported never being forced in the last 12 months to engage in sexual activities (e.g., kissing, touching, sex), 15 (5.8%) reported being forced one time, 28 reported being forced (10.8%) two or three times, 5 (1.9%) reported being forced four or five times, and 3 participants (1.2%) reported being forced six or more times.

## Design

The study had a cross-sectional correlational research design to examine the internal consistency and external validity of the Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale, by using the updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism, Acceptance of Interpersonal Violence, and Gender Specific System Justification scales to explore convergent validity. The Impression Management and Sexual Health Knowledge scales were used to assess discriminant validity of the AMMSA scale. Participants were also grouped by gender and victimization status to assess for any differences in levels of RMA and levels of the sociocultural variables, and to determine if the observed relationships between RMA and sociocultural attitudes depended upon victimization status.

## Measures

Participation in the study involved the completion of an online survey, which included the following measures: (a) the Acceptance of Modern Myths about Sexual Aggression (AMMSA), (b) the updated Illinois Rape Myth Acceptance, (c) Adversarial Sexual Beliefs, (d) Sex Role Stereotyping, (e) Sexual Conservatism, (f) Acceptance of Interpersonal Violence, (g) Gender Specific System Justification, (h) Impression Management, and (i) Sexual Health Knowledge scales. See pages 65 to 69 for the measures. Demographic data were also collected. Demographic information included: age, gender, race, academic major, academic level, athletic team membership, family income, relationship status, sexual orientation, community of origin (rural, urban, suburban), and prior and vicarious victimization. Prior victimization was evaluated using two questions (victimization within one's lifetime and victimization within the past 12 months): "Have you ever been physically forced to have sexual intercourse when you did not

want to?” and “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do, including kissing, touching, or being physically forced to have sexual intercourse?” For participants who responded “no” to the question “Have you ever been physically forced to have sexual intercourse when you did not want to?” were coded as non-victims, (n = 174) and participants who responded yes to the question were coded as victims (n = 53). For female participants who had dated during the last 12 months, those who responded “0” to the question: “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do, including kissing, touching, or being physically forced to have sexual intercourse?” were coded as non-victims, (n = 148) and participants who responded 1 or more times were coded as victims (n = 45).

In the current study, the AMMSA scale had an alpha of .91. In the current study, the updated Illinois Rape Myth Acceptance scale had an alpha of .91 and the subscales ranged from  $\alpha = .75$  to .89. In the current study, Sex Role Stereotyping yielded an alpha of .71; Sexual Conservatism, an alpha of .72; ASB, alpha of .82; and Acceptance of Interpersonal Violence, alpha of .42. Due to the unacceptably low reliability of the Acceptance of Interpersonal Violence scale, it was omitted from the study. In the current study, the Gender Specific System Justification scale had an alpha of .75. Due to a researcher error, the wrong response options were used for the Impression Management scale. Instead of true/false responses, a 7-point Likert scale was used. In order to determine the alpha for the scores on the Impression Management scale the following procedure took place. All the items worded in question format (3) were excluded and item numbers 4, 5, 9, and 10 were reverse coded. The internal consistency reliability analysis showed an alpha of .52. In the current study, the Sexual Health Knowledge

scale had an alpha of .57. Only measures with reliabilities above alpha of .50 were retained for the study. Demographic data were also collected. Inclusionary criteria for students included full-time enrollment in an undergraduate course of study between the ages 18 to 25.

#### Procedure

Participants were invited to complete the informed consent electronically and asked to give consent before participating in the study. The consent statement informed participants of possible risks and benefits, confidentiality, psychological resources, and discontinuation policies associated with participation. The informed consent form clearly stated that the survey was anonymous and that the participants would be asked questions about sexual assault attitudes and beliefs. Students were administered the entire instrument. The completion time was approximately 30 minutes. At the end of the survey, participants were asked to send an email to the study's email address to verify their participation in the study. Students were awarded research credit and extra credit this way.

At the close of the study, the researcher sent a debriefing statement to participants from all three phases of the study that provided education about rape myths, a list of common rape myth with facts to debunk each myth, and state and federal legal definitions of rape. See Appendix B for the debriefing statement.

## CHAPTER 4: RESULTS

The purpose of the main study was to a) assess the convergent and discriminant validity of the Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale in an Anglophone college sample from a large rural public university in Southeastern United States, b) compare reports of rape myth acceptance (RMA) beliefs among sexual assault victim versus non-victim U.S. college students, and c) determine if the relationships between the AMMSA scale and the socio-cultural attitudes variables depend upon victimization status (sexual assault victims, non-victims, and timeframe of sexual assault victimization).

### Data Preparation and Analytic Strategy

All data were initially stored in Qualtrics. Once data collection ended, the researcher retrieved the data and converted the data to a SPSS file that is password protected on an external drive for five years. Once the data were retrieved from Qualtrics, they were deleted. Data access was limited to the researcher and members of the researcher's dissertation committee. The privacy of participants was rigorously upheld by storing all data in a secure location, by storing signed consent forms electronically, and by reporting data only in aggregate format.

Data were analyzed using SPSS 22.0. Pearson product-moment correlation coefficients were calculated between AMMSA scores and five variables expected to demonstrate convergent validity of the AMMSA scores (updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism, and Gender Specific System Justification), and with scores on the two variables expected to demonstrate discriminant validity of the AMMSA scores (Impression Management, and Sexual Health Knowledge). A series of one-way MANOVAs were calculated to examine whether there were any differences between men and



women, participants' from different geographic regions (rural, suburban, and urban), or between female victims and non-victims on scores on the AMMSA, updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification, Impression Management, and Sexual Health Knowledge scales. The MANOVA tests whether the mean differences between the grouping variable on the dependent variables are likely to have been caused by chance (Mertler & Vannatta, 2005). When the multivariate effect was significant, a Bonferroni correction was applied to evaluate the statistical significance of the univariate results. Hierarchical multiple regressions were conducted to determine if victimization status changed the relationship between the sociocultural attitude variables (i.e., Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification) and AMMSA scores.

#### Preliminary analyses

Participants' responses to the AMMSA, updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification, Impression Management, and Sexual Health Knowledge scale scores were summed and averaged, with higher scores indicating greater endorsement of the constructs. The Sexual Health Knowledge scale scores were summed, with higher scores indicating a greater level of knowledge. Means, standard deviations, and sample sizes for each measure are displayed in Table 2.

In light of previous research documenting gender differences in RMA and the sociocultural variables, a one-way (participant gender: male vs. female) MANOVA was calculated to determine whether there were mean differences between men and women on the combined RMA measures (AMMSA and updated Illinois Rape Myth Acceptance scale), the

socio-cultural scales (Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification), and Impression Management, and Sexual Health Knowledge scales. See Table 3 for the mean values, standard deviations, significance tests, and effect sizes. Overall, the analysis yielded a significant multivariate main effect for gender, *Wilks'*  $\lambda = .78$ ,  $F(8, 311) = 10.98$ ,  $p < .001$ ,  $\eta^2_{\text{partial}} = .22$ , indicating there is a difference between men and women on the combined study variables. Given the significance of the overall test, the univariate main effects were examined. A Bonferroni correction was applied, setting the alpha level at  $p < .006$  ( $.05/8$ ) to protect against Type I error (Field, 2009). The univariate results showed that compared to women, men reported significantly higher levels of RMA on the AMMSA and updated Illinois Rape Myth Acceptance scales significantly higher levels of Adversarial Sexual Beliefs, Sex Role Stereotyping, Gender Specific System Justification, and significantly lower levels on sexual health knowledge on the Sexual Health Knowledge scale. Men and women reported similar levels of sexual conservatism on the Sexual Conservatism scale and similar levels of impression management on the Impression Management scale.

Next, a one-way (geographical region: rural vs. suburban vs. urban) MANOVA was calculated to determine whether there were mean differences between participants raised in a rural, suburban, or urban region on the combined RMA measures (AMMSA and updated Illinois Rape Myth Acceptance scale), the socio-cultural scales (Adversarial Sexual Beliefs, Sex Role Stereotyping, Gender Specific System Justification), and Impression Management, and Sexual Health Knowledge scales. See Table 4 for the mean values, standard deviations, significance tests, and effect sizes. Overall, the analysis yielded a significant multivariate main effect for geographical region, *Wilks'*  $\lambda = .90$   $F(16, 618) = 2.16$ ,  $p < .01$ ,  $\eta^2_{\text{partial}} = .05$  indicating there is a difference between participants from different geographical regions on the combined study

variables. Given the significance of the overall test, the univariate main effects were examined. A Bonferroni correction was applied, setting the alpha level at  $p < .006$  ( $.05/8$ ) to protect against Type I error (Field, 2009). The univariate results showed that participants in rural, suburban, and urban areas reported similar levels of RMA on the AMMSA and updated Illinois Rape Myth Acceptance scale, and similar levels on the Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification, Impression Management, and Sexual Health Knowledge scales.

### Hypothesis Testing

Construct validity. To test hypothesis one, Pearson product-moment correlation coefficients were calculated to determine levels of convergent and discriminant validity for scores on the AMMSA scale. The Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, and Gender Specific System Justification scores were used to establish convergent validity and Impression Management, and Sexual Health Knowledge scores were used to establish discriminant validity. See Table 7 for results. As expected, the AMMSA scores were significantly strongly correlated with the updated Illinois Rape Myth Acceptance scale ( $r = .78, p < .01$ ), Adversarial Sexual Beliefs ( $r = .63, p < .01$ ), and Sex Role Stereotyping ( $r = .53, p < .01$ ) scores, with higher AMMSA scores associated with higher updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, and Sex Role Stereotyping scores. The AMMSA scores were also significantly moderately correlated with Sexual Conservatism ( $r = .45, p < .01$ ) and Gender Specific System Justification ( $r = .43, p < .01$ ) scores, with higher AMMSA scores associated with higher Sexual Conservatism and Gender Specific System Justification scores. These results suggest that the scores from the AMMSA scale demonstrate good convergent validity. The AMMSA scores were not significantly associated with Impression Management

( $r = -.01, p = > .05$ ). The results also showed that the AMMSA scores were significantly moderately correlated with Sexual Health Knowledge scores ( $r = -.42, p < .01$ ), with higher AMMSA scores associated with lower Sexual Health Knowledge scores. These results suggest that the AMMSA scores are not related to concerns about impression management and demonstrate good discriminant validity.

**Victim and non-victim differences.** Hypothesis two explored whether college female sexual assault victims differed in RMA and related sociocultural variables from college female non-victims. To test this hypothesis, two MANOVAs were conducted to assess the differences between female victims and non-victims on RMA measures (AMMSA and updated Illinois Rape Myth Acceptance scale), and the sociocultural variables (Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification). Impression Management, and Sexual Health Knowledge scales were also included in the MANOVA given their relationship with the other variables.

For the first MANOVA, participants who responded “no” to the question “Have you ever been physically forced to have sexual intercourse when you did not want to?” were coded as non-victims, ( $n = 174$ ) and participants who responded yes to the question were coded as victims ( $n = 53$ ). See Table 6 for the mean values, standard deviations, significance tests, and effect sizes. Overall, the analysis yielded a significant multivariate main effect for victim status, *Wilks'*  $\lambda = .93, F(8, 218) = 2.06, p = .04, \eta^2_{\text{partial}} = .07$  indicating there is a difference between victims and non-victims on the combined study variables. Given the significance of the overall test, univariate main effects were examined. A Bonferroni correction was applied, setting the alpha level at  $p < .006 (.05/8)$  to protect against Type I error (Field, 2009). Using this conservative estimate of statistical significance, an analysis of the univariate results showed that non-victims

scored similarly to victims on the AMMSA, Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification, and updated Illinois Rape Myth Acceptance scales.

For the second MANOVA, of female participants who had dated during the last 12 months, those who responded “0” to the question: “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do, including kissing, touching, or being physically forced to have sexual intercourse?” were coded as non-victims, ( $n = 148$ ) and participants who responded 1 or more times were coded as victims ( $n = 45$ ). Overall, the effect of victimization status in the last 12 months was non-significant,  $F(8, 184) = 1.05, p = .40, \eta^2_{\text{partial}} = .04$ , indicating that there were no differences between women who had been victimized by a dating partner in the last 12 months and women who had not been victimized in the last 12 months on the overall levels of RMA and sociocultural attitudes.

To further examine hypothesis two, Pearson’s product-moment correlation coefficients were calculated between female participants’ victimization history, the AMMSA, updated Illinois Rape Myth Acceptance scale, Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, and Gender Specific System Justification scores. Please see Table 5 for results. For this analysis, participants’ victimization history was measured by two questions. The lifetime victimization question, “Have you ever been physically forced to have sexual intercourse when you did not want to?” was coded as 1 if participants responded yes, and coded as 0 if participants responded no. The second question measured frequency of victimization in the last 12 months. The second question asked: “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want

to do? (Count such things as kissing, touching, or being physically forced to have sexual intercourse)” Two-hundred and twenty-two female participants reported having dated someone in the past 12 months. Of that number, 171 (65.8%) reported never being forced in the last 12 months to engage in sexual activities (e.g., kissing, touching, sex), 15 (5.8%) reported being forced one time, 28 reported being forced (10.8%) two or three times, 5 (1.9%) reported being forced four or five times, and 3 participants (1.2%) reported being forced six or more times. The results showed a small positive correlation between lifetime victimization, and the frequency of victimization by dating partner in the last 12 months. The results also showed small, negative correlations between lifetime victimization and the AMMSA ( $r = -0.19, p < .01$ ), Gender Specific System Justification ( $r = -.22, p < .01$ ) and Sexual Conservatism ( $r = -.23, p < .01$ ) scores. The results showed no significant relationships between victimization frequency in the last 12 months and any of the rape myth measures sociocultural attitudes, sexual health knowledge, or impression management scores

### Regression Models

In order to test the hypothesis that the relationship between the sociocultural variables and AMMSA scores may depend upon victimization status, four hierarchical multiple regression analyses were conducted. For this hypothesis, victimization status was defined as ever being a victim of forced sex. The Adversarial Sexual Beliefs, Sexual Conservatism, Sex Role Stereotyping, Gender Specific System Justification scores were centered before being entered into the regression analyses (Cohen, Cohen, West, & Aiken, 2002). The first regression analysis tested whether the relationship between Gender Specific System Justification and AMMSA scores depended upon victimization status. Gender Specific System Justification was entered in the first block to assess the zero-order correlation between Gender Specific System Justification

and AMMSA scores; victimization status, which was not centered, was coded as 0 for non-victims and 1 for victims, and was entered in the second block; finally, the interaction between Gender Specific System Justification and victimization status was entered in the third block. Table 8 presents the unstandardized regression coefficients (B), the standard error (SE), the standardized regression coefficients ( $\beta$ ), and  $p$ -values for each block in the model. Examining block 1, Gender Specific System Justification scores were significantly positively related to AMMSA scores, with higher Gender Specific System Justification scores associated with higher AMMSA scores,  $F(1, 250) = 50.73, p < .001, R^2 = .17, R^2_{adj} = .17$ . Examining block 2, victimization status was not significantly related to AMMSA scores above and beyond Gender Specific System Justification scores,  $R^2 = .17, R^2_{adj} = .17, \Delta R^2 = .01, p = .21$ . Examining block 3, the results also showed that the positive association between Gender Specific System Justification scores and AMMSA scores were not moderated by victimization status,  $R^2 = .18, R^2_{adj} = .17, \Delta R^2 = .01, p = .44$ . This result suggested that Gender Specific System Justification is as predictive of AMMSA scores for victims as it is for non-victims.

The second regression analysis tested whether the relationship between Sexual Conservatism and AMMSA scores depended upon victimization status. Sexual Conservatism was entered in the first block to assess the zero-order correlation between Sexual Conservatism and AMMSA scores; victimization status, which was not centered, was coded as 0 for non-victims and 1 for victims, and was entered in the second block; finally, the interaction between Sexual Conservatism and victimization status was entered in the third block. Table 9 presents the unstandardized regression coefficients (b), the standard error (SE), the standardized regression coefficients ( $\beta$ ), and  $p$ -values for each block of the model. Examining block 1, Sexual Conservatism scores were significantly positively related to AMMSA scores, with higher Sexual

Conservatism scores associated with higher AMMSA scores,  $F(1, 252) = 68.46, p < .001, R^2 = .21, R^2_{adj} = .21$ . Examining block 2, victimization status was not significantly related to AMMSA scores above and beyond Sexual Conservatism scores,  $R^2 = .22, R^2_{adj} = .21, \Delta R^2 = .003, p = .34$ . Examining block 3, the results also showed that the positive association between Sexual Conservatism scores and AMMSA scores were not moderated by victimization status,  $R^2 = .22, R^2_{adj} = .21, \Delta R^2 = .001, p = .82$ . This result suggested that Sexual Conservatism was as predictive of AMMSA scores for victims as it was for non-victims.

The third regression analysis tested whether the relationship between Sex Role Stereotyping and AMMSA scores depended upon victimization status. Sex Role Stereotyping was entered in the first block to assess the zero-order correlation between Sex Role Stereotyping and AMMSA scores; victimization status, which was not centered, was coded as 0 for non-victims and 1 for victims, and was entered in the second block; finally, the interaction between Sex Role Stereotyping and victimization status was entered in the third block. Table 10 presents the unstandardized regression coefficients (b), the standard error (SE), the standardized regression coefficients ( $\beta$ ), and  $p$ -values for each block of the model. Examining block 1, Sex Role Stereotyping scores were significantly positively related to AMMSA scores, with higher Sex Role Stereotyping scores associated with higher AMMSA scores,  $F(1, 251) = 93.75, p < .001, R^2 = .27, R^2_{adj} = .27$ . Examining block 2, victimization status was not significantly related to AMMSA scores above and beyond Sex Role Stereotyping scores,  $R^2 = .28, R^2_{adj} = .27, \Delta R^2 = .007, p = .12$ . Examining block 3, the results also showed that the positive association between Sex Role Stereotyping scores and AMMSA scores were not moderated by victimization status,  $R^2 = .28, R^2_{adj} = .27, \Delta R^2 = .004, p = .27$ . This result suggested that Sex Role Stereotyping was as predictive of AMMSA scores for victims as it was for non-victims.



The fourth regression analysis tested whether the relationship between Adversarial Sexual Beliefs and AMMSA scores depended upon victimization status. Adversarial Sexual Beliefs was entered in the first block to assess the zero-order correlation between Adversarial Sexual Beliefs and AMMSA scores; victimization status, which was not centered, was coded as 0 for non-victims and 1 for victims, and was entered in the second block; finally, the interaction between Adversarial Sexual Beliefs and victimization status was entered in the third block. Table 11 presents the unstandardized regression coefficients ( $b$ ), the standard error (SE), the standardized regression coefficients ( $\beta$ ), and  $p$ -values for each block of the model. Examining block 1, Adversarial Sexual Beliefs scores were significantly positively related to AMMSA scores, with higher Adversarial Sexual Beliefs scores associated with higher AMMSA scores,  $F(1, 249) = 135.63, p < .001, R^2 = .35, R^2_{adj} = .35$ . Examining block 2, victimization status was not significantly related to AMMSA scores above and beyond Adversarial Sexual Beliefs scores,  $R^2 = .36, R^2_{adj} = .36, \Delta R^2 = .01, p = .05$ . Examining block 3, the results also showed that the positive association between Adversarial Sexual Beliefs scores and AMMSA scores were not moderated by victimization status,  $R^2 = .37, R^2_{adj} = .36, \Delta R^2 = .004, p = .21$ . This result suggested that Adversarial Sexual Beliefs scores were as predictive of AMMSA scores for victims as it was for non-victims.

## CHAPTER 5: DISCUSSION

### Review of Purpose

The purpose of the current study was to a) provide support for the convergent and discriminant validity of the Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale in a U.S. college sample from a large rural Southeastern public university, b) examine rape myth acceptance (RMA) levels and sociocultural attitudes among female sexual assault victims and non-victims, and c) examine the relationship between sociocultural variables and the AMMSA scores based on victimization status. This research identified gaps in the sexual assault literature and sought to explore ways to fill them. First, this study utilized the AMMSA scale, a newer psychometrically sound measure, within a different college population for which it was intended, with the hope to more accurately assess the nuances of college students' attitudes and beliefs surrounding rape myths. Second, this study sought to explore RMA levels between victims and non-victims of sexual assault, which have shown mixed results in past studies. Third, this study sought to expand limited research on whether victimization history played a role on RMA levels and sociocultural attitudes. Lastly, based on the variability of post-sexual assault trauma responses (recent assault versus past assault history) among sexual assault victims, it was important to explore whether timeframe of sexual assault victimization history (past sexual assault history versus within the past 12 months) played a role in RMA levels and sociocultural attitudes. The current study investigated research questions for which results could contribute to sexual assault prevention interventions, public policy, and the direction of future sexual assault research.

To accomplish these goals, the study was divided into three phases. Phase I consisted of cognitive interviews with college students to evaluate all the scales in the study. The purpose of

phase II was to pretest the revised scales with an independent sample of college students. The purpose of phase III, the main study, was to test the revised scales with a larger college sample and to assess the internal consistency and external validity of the AMMSA scale, compare rape myth acceptance among sexual assault victim and non-victim American college students, and c) determine if the relationships between the AMMSA scale and the socio-cultural attitudes variables depend upon victimization status. Convergent and discriminant validity for the AMMSA scale were assessed by using the updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism, Gender Specific System Justification, Impression Management, and Sexual Health Knowledge scales. The sociocultural attitude scales consisted of the Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism, and Gender Specific System Justification measures. Pearson product-moment correlation coefficients, MANOVAs, and hierarchical multiple regressions were used to test the hypotheses.

The AMMSA scale yielded strong psychometric properties within this college sample. The MANOVA and follow-up univariate results showed that there were significant differences between male and female participants, with men scoring higher in RMA and on sociocultural attitudes than women. However, men scored lower than women on the Sexual Health Knowledge scale and there were no gender differences on the IM scale. There were no statistically significant differences between female victims and non-victims on RMA and sociocultural attitudes. Additionally, the results of the hierarchical multiple regression analyses indicated that the significant positive relationships between AMMSA scores and Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism, Gender Specific System Justification scores were not moderated by female victimization status. The results will be interpreted in this chapter.

## Sample Characteristics

The current study found that men scored higher than women on all the RMA and sociocultural attitudinal scales. The literature has consistently found gender differences in RMA and sociocultural attitudes (Bridges, 1991; Buddie & Miller, 2002; Chapleau, Oswald, & Russell, 2008; Davies, Gilston, & Rogers, 2012; Gerger et al., 2007; Hammond, Berry, & Rodriguez, 2011; Ståhl, Eek, & Kazemi, 2010). This finding lends support for how men and women are conceptualizing rape myths differently. For men, it is through their social conditioning to be dominant and aggressive in society and to endorse beliefs about their right to sex (Burt, 1980; Suarez & Gadalla, 2010). For women, it is how they view victims as being different from themselves that results in victim blaming (Bohner & Lampridis, 2004). There are unique implications of high endorsement of rape myths for men and women. For example, high endorsement of rape myths leads to rape proclivity in men (Bohner, Siebler, & Schmelcher, 2006; Chiroro, Bohner, Viki, & Jarvis, 2004) and less preventative protective measures for women (Hickman & Muehlenhard, 1997).

Men had similar scores as women on the Impression Management scale indicating that men and women may be regulating or controlling their reaction about sensitive topics in a similar way. Regarding sexual reproductive health, women scored higher on the Sexual Health Knowledge scale than men. Past research has found that individuals who score higher in sexual health knowledge tend to score lower on rape myths (Aronowitz et al., 2012) and that significant negative correlation between Sexual Health Knowledge and RMA was supported in the current study. Women in the current study scored higher in sexual health knowledge and lower in rape myths than men.

There were neither differences in RMA nor in the sociocultural attitudes among participants who reported being from rural, suburban, and urban areas. There is limited research examining the relationship between RMA and geographical region. One study by King and Roberts (2011) found no differences in levels of RMA between college students from urban and rural areas. Another study of college students from a rural community found that students scored low in RMA, were less likely to blame victims, and were less likely to criticize victims if they were victims themselves, came from egalitarian families, rejected modern sexist views, and reported little animosity toward women (Haywood & Swank, 2008). College students from rural areas may be open and supportive of sexual assault victims, but may experience differences in attitudes with their communities of origin. Annan (2006) conducted a literature review of the sexual violence in rural communities and found that rural community members regularly blamed the victim for the sexual assault and victims regularly blamed themselves for the sexual assault.

#### Evaluating Psychometric Properties of the AMMSA Scale

The AMMSA scale was positively correlated with related constructs (updated Illinois Rape Myth Acceptance scale, Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism, Gender Specific System Justification) and had a low correlation with Impression Management. The AMMSA scale demonstrated good internal consistency. Gerger and colleagues (2007) had similar support for construct validity when using the Illinois Rape Myth Acceptance -Short Form, Sex Role Stereotyping, Adversarial Sexual Beliefs, and Impression Management scales with German-speaking student and non-student samples. The findings of the current study provides support for convergent and discriminant validity of the AMMSA scale within a U.S. college sample. The Sexual Health Knowledge scale was also used in the current study to establish discriminant validity since the literature has shown that it has a small negative

correlation with RMA (Aronowitz et al., 2012). The current study showed that Sexual Health Knowledge had a moderate negative correlation with the AMMSA scale.

As expected, scores on the updated Illinois Rape Myth Acceptance scale demonstrated a strong association with scores on the AMMSA scale. The updated Illinois Rape Myth Acceptance scale developed by McMahon and Farmer (2011), updated from the 1999 Illinois Rape Myth Acceptance scale was also selected for the current study because it reflected more modern language and included subtler items about rape myths as compared to the original Illinois Rape Myth Acceptance scale. Considering the goals of the updated Illinois Rape Myth Acceptance scale, which aligned with the goals of the AMMSA scale (subtler item wording and modern language), it appeared to be a useful scale with which to compare to the AMMSA scale. However, key differences between each scale remain. The AMMSA scale incorporates both covert and blatant items related to rape, victims, and perpetrators of rape, and examines broader content areas (i.e., scope of the problem, policies designed to help sexual assault victims) whereas the updated Illinois Rape Myth Acceptance scale only explores attitudes and beliefs related to rape, victims, and perpetrators of rape.

Prior to the current study, The AMMSA scale's convergent validity had been established with an English-speaking sample using sociocultural attitudinal scales such as hostile sexism, benevolent sexism, social dominance orientation, right wing authoritarianism and just world belief scales (Gerger et al., 2007). This dissertation was the first study to examine the AMMSA scale's convergent validity using Gender Specific System Justification and Burt's sociocultural attitudinal scales with English-speaking college students. Burt's scales (Adversarial Sexual Beliefs, Sex Role Stereotyping, Sexual Conservatism) were selected for this study because researchers seeking to validate other RMA measures traditionally have used them to establish

convergent validity. Burt (1980) reported that the Sexual Conservatism scale had the lowest correlation with RMA, but it was kept in the current study to determine if the results would be similar to Burt's findings. Contrary to Burt's finding, the results from the current study found the Sexual Conservatism scale to be moderately correlated with the AMMSA scale. In the current study, Burt's sociocultural attitudinal measures were moderately correlated with the AMMSA scale, which is different from the findings of Gerger and colleagues (2007) that showed high correlations with the AMMSA scale, Sex Role Stereotyping and Adversarial Sexual Beliefs scales within a German-speaking sample. The inter-correlational differences between the current study and Gerger et al.'s study could be due to sample characteristics (Goodwin & Leech, 2006). For example, Gerger and colleagues (2007) used student and non-student samples between the ages 18 to 99 to validate the AMMSA scale whereas the current study used college students between the ages 18 to 25 to validate the AMMSA scale. Additionally, there may be cultural differences as to how Germans versus Americans view rape myths.

Lastly, the Gender Specific System Justification scale, which examines gender inequality, was selected because past research has shown that Gender Specific System Justification is a strong predictor for RMA, accounting for 7.2% of the variance for RMA (Chapleau & Oswald, 2013). Chapleau, Oswald, and Russell (2013) also found that men endorsed higher levels of gender inequality and RMA than women. The current study showed there was a moderate positive correlation between RMA and gender inequality beliefs, and that men scored higher in RMA and gender inequality beliefs than women. This finding provided support that faulty views about equity and equality between men and women influence the endorsement of rape myths. Essentially, men who believed that there was equality between men and women in society were more likely to endorse rape myths.

## Victims and Non-Victims

The MANOVA results of the current study indicated that victims and non-victims differed in the combined levels of RMA, sexual conservatism, and gender specific system justification. The univariate results were assessed using the Bonferroni correction, a stringent statistical method to protect against Type I error (Field, 2009). Using this conservative estimate of statistical significance, the univariate results showed that there were no differences between victims and non-victims on levels of RMA, sociocultural attitudes, impression management or sexual health knowledge. The literature provides support for the findings in the current study. Studies that have used different RMA measures with varying levels of psychometric properties such as the Illinois Rape Myth Acceptance, Burt's RMA, and AMMSA scales, found no differences in RMA among victims and non-victims (Carmody & Washington, 2001; Hackney, 2015; Mason et al., 2004; Peterson & Muehlenhard, 2004; Suarez & Gadalla, 2010). These findings indicate that regardless of victimization background women tend to conceptualize factors surrounding rape, victims, sex roles, sexual relationships, and gender equality in a similar manner. Sociocultural attitudes expressed by participants stem from pervasive social norms within U.S. culture. In turn, the pressures of society may be contributing to women's victim blaming attitudes and encouraging beliefs that only certain type of women are at risk for sexual assault. The implications for this lack of difference between victims and non-victims indicate that the elements of sexual assault prevention educational programs could be used for both female victims and non-victims.

The current study also measured lifetime sexual assault victimization and sexual assault victimization within the past 12 months. Pearson product-moment correlation coefficients were calculated to assess the associations between victimization timeframe, RMA, and sociocultural



attitudes. Victims who reported lifetime victimization showed small positive relationships between the AMMSA, Gender Specific System Justification, and Sexual Conservatism scales but no statistically significant relationships were found for victims who reported victimization within the past 12 months. The finding that only lifetime victimization was correlated with RMA, gender inequality, and sexually conservative views may indicate differences in how victims with lifetime versus recent victimization may be conceptualizing rape myths. Additionally, there may be a difference in how participants are interpreting the victimization within the past 12 months question. This finding could be explained by the fact that victims with lifetime victimization may have more experience with individuals who explicitly support gender inequality and sexually restrictive views that serve to blame them for their assault.

Additionally, the last 12 months frequency question included a range of acts such as forced touching, kissing, and sexual intercourse. It is possible that if individuals experienced less severe levels of sexual assault, their experience and endorsement of rape myths may be different from those who experienced forced sexual intercourse in the past 12 months. The difference in sexual assault severity may have impacted victims' endorsement of rape myths. Furthermore, it is unclear which of the participants experienced acknowledged versus unacknowledged rape and how that may have influenced their endorsement of RMA.

Past research has shown that individuals with unacknowledged rape who did not experience severe physical violence tend to downplay their experiences of sexual assault and in turn endorse higher rape myths than those with acknowledged rape experiences (Mason et al., 2004). There is limited research that has explored RMA and victimization status from multiple time periods. One recent study using the AMMSA scale found that female college victims who reported lifetime victimization had the same RMA levels as non-victims but had higher RMA

levels than non-victims when victimization occurred in the past 12 months (Watson et al., 2014). There are multiple factors that may account for these differences including the statistical analyses and number of victims in each study. For example, the current study used the Bonferroni correction for the univariate analyses and had a larger sample of victims than the previous study.

Keeping in mind the stringent guidelines used in the current study to protect against Type I error, there may have been an increase in Type II error (Field, 2009). The use of Cohen's *d* effect sizes provides another comparison of victims and non-victims mean scores on the RMA and sociocultural attitude measures. There was a small effect size for the AMMSA, updated Illinois Rape Myth Acceptance, Adversarial Sexual Beliefs, and Sex Role Stereotyping scales providing support that there were no differences between victims and non-victims. The Sexual Conservatism, and Gender Specific System Justification scales were still within the small effect size ranges (.41 to .46), but were trending toward the moderate effect size range than the other scales. It is possible that there may be some differences between victims and non-victims on those measures. It is possible that there were significant differences between victims and non-victims that were not revealed because of the Bonferroni correction.

Interestingly, the trend for victims in the current study was lower endorsement in RMA, gender specific system justification, and sexual conservatism. A larger sample size may be able to better detect differences between victims and non-victims on the AMMSA, Sexual Conservatism, and Gender Specific System Justification scales. Some literature does provide support for differences between victims and non-victims in RMA and sociocultural attitudes. Vonderhaar and Carmody (2015) examined RMA using an 11-item version of Burt's 19-item RMA scale within U.S. college students (undergraduate and graduate students combined) and

beliefs about justice using a 15-item Just World Belief scale and found that victims scored lower in RMA and just world beliefs than non-victims.

In examining only victims of sexual assault, Miller, Amacker, and King (2011) constructed a path model to examine which predictors most influenced rape victims' decision to endorse RMA. The authors found that the victims' sexual history was positively related to perceived similarity to other victims and rape victim empathy. Additionally, rape empathy was inversely related to RMA. Victims who viewed other victims as similar to themselves evoked more empathy for those victims and as a result endorsed fewer rape myths.

Reporting or not reporting sexual assault victimization to law enforcement can also alter victims' endorsement of rape myths. Egan and Wilson (2012) evaluated rape victims from rape crisis centers and victims of a crime other than rape from a university setting in the United Kingdom using rape myth vignettes. The authors found that rape victims who reported the crime to police had lower RMA than rape victims who did not report the crime to police.

The variable findings in the literature using multiple measures, populations, sexual victimization time periods, and sociocultural scales demonstrate a lack of methodological consistency in the study of RMA. Additionally, the findings indicate the complexity of studying this phenomenon and the different factors that may be at play. The use of victims' cognitive processes regarding rape and rape myths is one area of research that has been studied. Research supports that victims can more easily relate to other victims (Barnett, Tetreault, & Masbad, 1987; Brown, Messman-Moore, Miller, & Stasser, 2005) and in turn report greater rape victim empathy (Anderson, Cooper, & Okamura, 1997; Barnett et al., 1987; Deitz, Blackwell, Daley, & Bentley, 1982). Being able to relate to other victims and the various circumstances surrounding rape could motivate rape victims to have more empathy and compassion for other victims that would result

in less endorsement of rape myths. Miller, Amacker, and King (2011) provided support for this first explanation. The authors found that a) victimization history predicted higher rape victim empathy, which was mediated by how much the victim identified with other victims (perceived similarity), b) perceived similarity to victim predicted less victim blaming for the sexual assault, which was mediated by level of rape empathy, and c) degree of rape victim empathy predicted less victim blaming, which was mediated by level of rape myth acceptance. Their study provides support that victims' history of sexual assault is associated with victim empathy, and as a result they endorse fewer rape myths.

Over the past few years there has been media and national attention to reduce sexual assault on college campuses (Ellis, 2014; Grinberg, 2014; National Public Radio, 2014). For example, the creation of the White House Task Force to Protect Students from Sexual Assault (2014) was President Obama's formal commitment to address sexual violence college campuses. The task force has produced guidelines for ways the federal government can reduce sexual assault on college campuses and how universities can coordinate with the federal government to improve sexual violence prevention efforts.

Additionally, the Clery Act requires higher education administration to be more transparent in their handling of sexual assault allegations and intends to enforce university accountability by penalizing them with hefty fines and other penalties (Lombardi, 2014). Furthermore, both college victims and non-victims of sexual assault from around the country have banded together to speak out against sexual assault on their individual campuses (Ellis, 2014; Grinberg, 2014; National Public Radio, 2014). Specific to this university campus, the hosting of the 14<sup>th</sup> annual Sexual Assault Awareness Week in March was during the study's data collection time period, which may have played a role in the level of RMA awareness in the target

population. A review of college-specific and national events regarding sexual assault prevention may be helpful in evaluating if there are cognitive shifts in rape empathy and in turn victim blaming.

Four hierarchical multiple regression analyses were conducted to examine if the relationship between the AMMSA and four sociocultural attitude variables (Gender Specific System Justification, Adversarial Sexual Beliefs, Sex Role Stereotyping, and Sexual Conservatism) depended on victimization status. The regression models showed that neither victimization status nor the interaction between victimization status and sociocultural variables predicted AMMSA scores above and beyond the prediction of the sociocultural variables. The victim's gender specific system justification was just as predictive of higher RMA on the AMMSA scale as for non-victims.

This current study adds support to Chapleau and Oswald (2013) findings that the belief in rape myths were system-justifying for women. The consequence of victims and non-victims having similar beliefs about gender equality is that they may be less likely to advocate for themselves and other women because they expect society to already have safeguards in place to protect all women against sexual assault. As a result, if a woman were to experience rape, it would be due to some fault of her own.

Victims' adversarial sexual beliefs were just as predictive of higher RMA on the AMMSA scale as for non-victims. Higher endorsement of adversarial sexual beliefs supports the view that sexual relationships are manipulative (Burt, 1980). In its relationship with RMA, adversarial sexual beliefs are typically used to evaluate victims of sexual assault; high endorsement of adversarial beliefs supports hostility toward women that in turn, blames the victim for her assault (Lonsway & Fitzgerald, 1994). Research has supported that there are no

differences between victims and non-victims in their endorsement of adversarial sexual beliefs (Mason et al., 2004). In the current study, sex role stereotyping was predictive of higher RMA for both victims and non-victims. Sex role stereotyping is defined as traditional gender role expectations, which gets translated into how males and females are expected to behave in family, work, and social interactions (Burt, 1980). Mason and colleagues (2004) defined sex role stereotyping more in a sexual context in that men are expected to initiate sex and women are expected to determine the frequency of sexual interactions.

Sexual conservatism was also predictive of higher RMA for both victims and non-victims in the current study. Burt (1980) described sexual conservatism as the conditions (e.g., extramarital, premarital, teenage sex) under which sex and sexual acts should occur between men and women. Individuals who score high in sex conservatism also tend to endorse rape myths. Often times, rape occurs outside of the conditions mentioned above, which are contradictory to those beliefs. In order to address these two conflicting pieces of information, individuals tend to endorse rape myths that the victim is to be blamed for the sexual assault. It is possible that both victims and non-victims who score high in RMA may be conceptualizing rape based on their similar conservative beliefs.

### Implications for Theory

This research study adds to the body of literature that seeks to elucidate covert beliefs about rape myths and to better understand the differences in how victims versus non-victims conceptualize rape. Several feminist theoretical conceptualizations of rape have focused on social cognitions that individuals have about rape, victims, and perpetrators that blame the victim's behavior or lifestyle for the sexual assault victimization (Brownmiller, 1975; Herman, 1984). The overarching construct has been labeled "rape myth acceptance," and it is positively

correlated with rape-supportive attitudes such as acceptance of interpersonal violence, gender role stereotyping, and adversarial sexual beliefs (Burt, 1980). The current study also showed that RMA and sociocultural attitudes were highest among men as compared to women and that has been consistently supported in the literature (Aosved & Long, 2006; Bohner, Eyssel, Pina, Siebler, & Tendayi, 2009; Burt, 1980). The current study demonstrated that there was a strong positive correlation between rape myth acceptance (RMA), adversarial sexual beliefs and sex role stereotyping and moderate positive correlations between RMA and sexual conservatism. Gender Specific System Justification Theory (Jost & Kay, 2005) that examines beliefs related to gender inequality has been used in conjunction with RMA to better understand how other sociocultural attitudes may contribute to the endorsement of rape myths. Chappleau and Oswald (2013) showed that participants who scored higher in gender inequality beliefs also scored higher in RMA with a moderate positive correlation between both constructs. The authors also found that men scored higher in RMA and gender inequality beliefs than women. The current study provided support for that finding. The current study showed there was a moderate positive correlation between RMA and gender inequality beliefs, and that men scored higher in RMA and gender inequality beliefs than women.

RMA and Gender Specific System Justification theories have behavioral implications. RMA research has shown that higher endorsement of rape myth acceptance is linked to higher rape proclivity in men (Bohner et al., 2005) and insufficient rape preventative measures in women (Hickman & Muehlenhard, 1997). For example, a woman who believes that rape only happens to certain types of women, endorses gender stereotyping views, and believes that gender equality exists in modern society is less likely to believe that she is at risk for sexual assault and inadvertently puts herself at higher risk for being sexually assaulted (Bohner et al., 2002; Bohner

& Lampridis, 2004). Rape myths are a part of the American cultural norm, “the rape culture” (Herman, 1984) and society’s acceptance of them continue to perpetuate sexual assault against women. Additionally, rape myths follow a similar pattern as modern sexism and racism in that they are more covert today than in the past; consequently, modern rape myth measures must take into account those factors (Eyssel & Bohner, 2008).

The current study provides support for the existing RMA construct that states that rape myths are widely accepted attitudes and beliefs about sexual assault that blames the victim and exonerates the perpetrator of rape (Eyssel & Bohner, 2008; Payne et al., 1999). Additionally, the current study adds support for the Gender Specific System Justification theory, which states that society’s beliefs that gender equality exists serves to maintain false beliefs about equity and equality between men and women. This belief system is positively correlated with RMA (Chapleau & Oswald, 2013), and the current study supported that finding.

Currently, there is not a single theory that examines rape myths (Vonderhaar & Carmody, 2015), which demonstrates the complexity of studying the phenomenon of sexual assault. Some researchers advocate that the theoretical underpinnings of the current RMA measures need to be revisited to allow for more accurate and consistent measures of attitudes and beliefs about rape (Suarez & Gadalla, 2010; Vonderhaar & Carmody, 2015). The development of the AMMSA scale could be considered a modern approach to RMA research. Gerger and colleagues (2007) incorporated modern sexism and racism research into the development of the AMMSA scale by including subtler item wording and including questions that can provide a broader scope of the phenomenon such as attitudes about gender roles and sex roles, and society’s attention to sexual assault and other gender-specific crimes. Perhaps the goal should not be to have a single theory as Vonderhaar & Carmody (2015) suggest, but rather to utilize multiple theories that can better



explicate which attitudes and beliefs are consistently endorsing sexual violence toward women. For example, this study showed the Gender Specific System Justification scale had a moderate positive correlation with the AMMSA scale indicating that views about gender inequality and RMA are closely related. There is evidence that there is a relationship between these two constructs and perhaps future research should incorporate the use of the Gender Specific System Justification scale into RMA research with college students.

### Implications for Rural Psychology

The preliminary findings from this study have many implications for rural psychology. The potential of using a newer measure to evaluate attitudes and beliefs about subtle rape myths may be helpful in developing sexual assault awareness programs, reducing rape myths and sexual assault occurrences in rural communities. The use of the AMMSA scale may be beneficial to mental health practitioners in rural areas considering the cultural and clinical sensitivity a mental health practitioner must have in working with this population. For example, in addition to assessing subtle and blatant attitudes about rape, victims and perpetrators, the AMMSA scale assesses rape as a social problem and policies designed to help sexual assault victims. The AMMSA could be used as a psychoeducational tool to assess local rural views about the attitudes that contribute to the high endorsement of rape myths and use this information to assist rape victims in these close-knit communities. In considering rape myths in rural communities, it is important for mental health practitioners to understand the culture within rural communities.

Rape victims in rural areas are at a particular disadvantage because of geographical, economical, and social barriers they face. Due to low population density in rural areas, there are limited or no resources for victims to access health, criminal justice, and mental health systems (Lewis & Reed, 2003; Logan, Evans, Stevenson, & Jordan, 2005) This geographic isolation

inhibits victims from being able to seek help and report crimes in a timely manner. Economic barriers are also another important factor. Approximately 20% of rural people live in poverty (United States Department of Agriculture Economic Research Service, 2013) and the cost of medical services in remote areas tend to be high—creating an economic barrier for potential victims (Logan et al., 2005).

Cultural beliefs can also serve as barriers in rural communities. For example, rural culture supports the view that personal matters such as rape should be held within the family and not disclosed to strangers (Lewis & Reed, 2003; Logan et al., 2005). A review of the sexual violence in rural communities found that rural community members regularly blamed the victim for the sexual assault and victims regularly blamed themselves for the sexual assault (Annan, 2006). Lastly, if a victim were to come forward and seek treatment, anonymity is virtually impossible; lack of anonymity may cause victims to feel even more stigmatized and emotionally isolated (Averill, Padilla, & Clements, 2007).

Rural victims experience many barriers to care, and rural psychologists need to consider the complexities their clients face. Secondly, rural psychologists need to be aware of the rape myth acceptance literature and how rape myths held by society and victims blame victims for the sexual assault and vindicate perpetrators. Before treatment, psychologists should consider evaluating their client's attitudes and beliefs about rape and begin to address rape myths directly in treatment through targeted interventions (Moor, 2007). Additionally, psychologists may consider providing family members and the community (i.e., law enforcement officers) psychoeducation about rape myths and facts to debunk them (Gemberling & Cramer, 2014).

## Implications for Clinical Psychology

Rape myths are common beliefs held by both women and men in today's society and there are multiple demographic, sociocultural, and behavioral factors such as being male and endorsing hostility toward women, lower education attainment, and oppressive beliefs that contribute to high endorsement of RMA (Suarez & Gadalla, 2010).

Knowledge of rape myths is important to clinical psychologists because it can bring awareness to clinicians' own prejudices about rape, rape victims, and perpetrators. In providing group and/or individual therapy for victims, it would be useful for psychologists to first assess their own RMA levels and address them before working with their clients. If rape myths are not addressed, therapy can be harmful to victims and serve as a form of re-victimization for victims (Campbell & Raja, 1999). Considering that some victims take years to seek mental health treatment, it is important that their first introduction to therapy is supportive, positive and helpful. Moor (2007) states that the two most essential approaches to working with victims is for clinicians to use therapeutic empathy when engaging with victims and to use cognitive restructuring to help bring about therapeutic change. Demonstrating empathy for victims helps to open the dialogue about victims' self-blame, shame, and cognitive distortions related to the rape (Moor, 2007) and reframe the victims' experience through cognitive restructuring (Foa, Rothbaum, Riggs, & Murdock, 1991). Additionally, Moor (2007) recommends assessing victims' levels of RMA and to address them directly in therapy.

In summary, rape myths can impact the therapeutic relationship, and it is the responsibility for the psychologist to ensure the victims' psychological well-being. Rape myths are widely accepted in today's society; therefore, it is important for psychologists to explore how

rape myths are impacting victims and their recovery and to develop tailored interventions to address rape myths in treatment.

### Strengths and Limitations

This study offers many benefits to rape myth acceptance research. First, unlike most research studies with college samples (Aronowitz et al., 2012; Buddie & Miller, 2002; Mason et al., 2004; Suarez & Gadalla, 2010; Vonderhaar & Carmody, 2015), this study restricted the age group to only 18 to 25 year old students to match the developmental age of traditional college students. This age restriction allowed for a more accurate examination of the rape myth and related sociocultural attitudes within college students that can better inform sexual assault prevention interventions geared at this population.

Second, a majority of the study's sample consisted of non-psychology students. The aim of surveying non-psychology students was to provide more heterogeneity to the sample that is more representative of the college student body. Third, to increase the validity of student responses, five catch items/attentional filters were used throughout the survey. Catch items/attentional filters are commonly used in online surveys to reduce measurement error (Qualtrics, 2013). Fourth, the AMMSA scale demonstrated strong psychometric properties within a U.S. college sample and provides preliminary support for research with larger U.S. college samples.

The benefits of the AMMSA scale are that it incorporates both covert and blatant items and examines broader content areas (i.e., scope of the problem, policies designed to help sexual assault victims). A RMA measure with a broader focus may allow researchers to facilitate a deeper exploration of participants' viewpoints about rape myths and rape myth related factors. Results from the AMMSA scale can inform the development of sexual assault prevention

education programs to eventually reduce sexual assault on college campuses. Fifth, the updated Illinois Rape Myth Acceptance scale has not been widely used with college students. The current study found that it had strong internal reliability consistency and good convergent validity with the AMMSA and sociocultural attitudinal scales. Sixth, the finding that there were no differences between female victims and non-victims in RMA and sociocultural attitudes demonstrates that there are similar predictors of RMA for both groups of women. However, there was a trend for female victims scoring lower on gender specific system justification and sexual conservatism, and RMA than non-victims. Lastly, identification of common blatant and covert rape myths within the college population allows psychologists to develop clinical interventions geared toward sexual assault victims and their families that explore core rape myth beliefs about victims, perpetrators and rape that may serve as barriers to treatment.

There are several limitations that need to be acknowledged. First, this was a correlational research study and causation cannot be extrapolated from the findings. Second, the sexual assault victimization question that measured sexual assault within the past 12 months included sexual assault of varying severity levels. As a result, it was unclear, which victims experienced forced sexual intercourse versus forced kissing and touching in the past 12 months and how the differences in severity may have impacted the endorsement of rape myths. Third, there were two scales used to establish discriminant validity, one of which had low internal consistency reliability. Aronowitz and colleagues (2012) reported an internal consistency reliability of the Sexual Health Knowledge scale in their study as  $\alpha = .89$  but the current study showed low internal consistency reliability ( $\alpha = .57$ ). Use of the Sexual Health Knowledge scale may have affected the inter-correlational results. Therefore, the results of the Sexual Health Knowledge scale should be interpreted with caution. Fourth, the use of an online survey to maintain the

anonymity of participants may have led to socially desirable responses. The literature shows mixed findings regarding the accuracy of self-report when information being collected is embarrassing, stigmatizing, or if a person's privacy is being violated. Rosenbaum and colleagues (2006) conducted a study with college students to determine if the data collection method to solicit information about sensitive topics such as perpetration and victimization by physical and sexual abuse and drug and alcohol use produced differences in topic scores. The authors used paper-pencil surveys, in-person interviews, telephone interviews, and an automated telephonic data collection (ATDC) system and found that there were no statistical differences between the data collection method and sensitive topic scores. However, the ATDC produced the highest participation rates. A more recent study with college students found that complete anonymity on self-report measures decreased participants' motivation to answer the questions accurately and thoughtfully and increased the likelihood of socially desirable responses (Lelkes, Krosnick, Marx, Judd, & Park, 2012). The authors speculated that the reason for inaccuracy of self-reports was that when participants are not held accountable for their responses, they are less likely to put effort into thinking about their reasons for selecting a particular answer choice.

#### Future Directions

Rape myths have been studied for over thirty years, and there has been a lot of progress in identifying attitudes that are highly correlated with RMA. Researchers have recognized deficits in Burt's initial conceptualization of rape myths and have worked to develop newer RMA measures with more robust psychometric properties (Gerger et al., 2007; Lonsway & Fitzgerald, 1995; McMahon & Farmer, 2011). The current study also was an attempt to add more credibility to the use of the AMMSA scale within a U.S. college population, to explore various

sociocultural attitudes related to RMA, and to learn about differences in RMA and sociocultural attitudes among victims and non-victims. However, more research is needed.

More research is needed in the U.S. with larger college samples of diverse racial/ethnic groups and from different geographical regions to explore how RMA may differ within these populations. Additionally, longitudinal studies with college students (first year to senior year) would be helpful in exploring how RMA may change over time and what factors may influence that change (i.e., campus awareness programs, knowing a victim, becoming a victim, and enforcing stricter campus laws regarding sexual assault). Experimental research may be helpful in examining how RMA influences behavior, which may support existing research on RMA and rape proclivity in men (Bohner et al., 2005). Additional studies and more complex analyses such as confirmatory factor analyses and differential item functioning analyses are needed to establish the psychometric components of the AMMSA scale for U.S. college samples.

More consistency is needed in how sexual assault victimization is measured (e.g., types of questions, timeframe of victimization) and how victims are evaluated (e.g., reported and unreported rape, acknowledgement and non-acknowledgement of rape, severity of sexual trauma, seeking mental health services and not seeking mental health services).

More research is needed to learn how female victims and non-victims are conceptualizing rape myths. Victim empathy may be playing a central role as to how victims view the experiences of other victims. Additionally, national efforts and media attention are now working to expose sexual assault as a crime for which perpetrators must take responsibility. The ability to understand any differences between how victims and non-victims think about rape may provide useful information about how to design sexual assault prevention programs to increase victim empathy and reduce victim blame.

Regarding RMA research methodology, it appears that consistent use of RMA measures with strong psychometric properties would help to ensure that the RMA construct is measuring what it was intended to measure, and it would allow for more accurate comparisons of research findings. One way to facilitate more consistent use of RMA measures is for researchers to collaborate both nationally and internationally. Validating RMA measures cross-culturally could facilitate opportunities for researchers to work as a team to reduce sexual victimization of women around the world.

### General Conclusions

The preliminary analyses of the AMMSA scale in this study add support for the AMMSA scale's strong internal consistency and external validity within a U.S. college sample. The AMMSA scale has been translated and validated in other countries, used with college samples, and it has shown to have good reliability and validity (Megías et al., 2011; Romero-Sanchez et al., 2013). The current study also supported findings in the literature about gender differences in RMA with men scoring higher than women on the RMA and all the sociocultural attitude measures. There were no statistically significant differences between female victims and non-victims in RMA and sociocultural attitudes related to rape myths found in this study, which is similar to many previous studies cited in the literature. Additionally, the current study demonstrated that the relationships between sociocultural attitudes and RMA are similar for female victims and non-victims. The current study, however, did show a trend for victims scoring lower on the AMMSA, Social Conservatism, and Gender Specific System Justification scales than non-victims, but a larger sample is needed to further test this trend.

Establishing support for the use of the AMMSA scale in the U.S. opens up possibilities for many other opportunities including the study of rape proclivity in men and rape myth



acceptance (Bohner et al., 2002; Bohner et al., 2005) with more geographically diverse student populations. Having a RMA measure that examines both subtle attitudes about rape myths and other factors related to the subject offers a broader range of how rape myths can be studied and paired with other socio-attitudinal measures. The use of the AMMSA scale in Europe and South America in multiple languages provides a platform for how rape myths can be studied cross-culturally.

Developing a standardized measure such as the AMMSA scale could improve sexual assault prevention interventions that could address specific rape myths, factors concerning victims and influencing male coercion, and policies regarding sexual assault. Sexual assault research could also take a more targeted approach to deepen the understanding of factors that constellation of factors and cognitions that contribute and maintain rape myths.

Lastly, sexual assault research can inform clinical psychology and public health in how to establish primary, secondary and tertiary sexual assault prevention methods. Clinicians can become more aware of the factors that contribute to sexual assault victimization and re-victimization and how to better advocate for clients who seek physical and mental health services. The item structure of the AMMSA scale naturally takes on the design of the public health's social-ecological model, which takes into account how multiple levels such as society, community, and relationships all impact the individual and each other. In order to make more significant strides in the reduction of sexual assault on college campuses, there needs to be a multipronged approach that takes into account the influences that affect our college men and women. Ongoing research such as this present study allows for this progress to take place.

In summary, this study adds to the sexual assault research field by providing preliminary support for the internal consistency and external validity of a modern rape myth scale within a

U.S. college sample. More research is needed to examine other psychometric properties of the AMMSA scale. Additionally, the current study demonstrates the need for more research with larger college samples with psychometrically sound RMA measures, such as the AMMSA scale and sociocultural attitude scales such as the Gender Specific System Justification scale.

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## APPENDICES

Table 1

*Item Modifications for AMMSA, ASB, and AIV Scales*

Scale	Original Items	Modified Items
AMMSA	2. Once a man and woman have started making out, a woman's misgivings about sex will automatically disappear.	2. Once a man and woman have started making out, a woman's misgivings about sex ( <b><i>doubts about having sex</i></b> ) will automatically disappear.
	3. A lot of women strongly complain about sexual infringements for no real reason, just to appear emancipated.	3. A lot of women strongly complain about sexual <b><i>restrictions</i></b> for no real reason, just to appear emancipated ( <b><i>free</i></b> ).
	6. It is a biological necessity for men to release sexual pressure from time to time.	6. It is a biological necessity for men to <b><i>have a sexual release</i></b> from time to time.
	15. Women like to play coy. This does not mean than they do not want sex.	15. Women like to play coy ( <b><i>innocent</i></b> ). This does not mean than they do not want sex.
	20. When defining "marital rape", there is no clear-cut distinction between normal conjugal intercourse and rape.	20. When defining "marital rape", there is no clear-cut distinction between normal <b><i>marital</i></b> intercourse and rape.
	27. Many women tend to misinterpret a well-meant gesture as a "sexual assault".	27. Many women tend to misinterpret a well-meant gesture ( <b><i>an innocent gesture</i></b> ) as a "sexual assault".
	29. Instead of worrying about alleged victims of sexual violence society should attend to more urgent problems such as environmental destruction.	29. Instead of worrying about alleged victims of sexual violence society should attend to more urgent problems, <i>e.g.</i> , environmental destruction.
	30. Nowadays, men who really sexually assault women are punished justly.	30. Nowadays, men who <b><i>actually</i></b> sexually assault women are punished justly.

Note: AMMSA=Acceptance of Modern Myths about Sexual Aggression; ASB = Adversarial Sexual Beliefs; AIV= Acceptance of Interpersonal Violence

## Table Continues

Scale	Original Items	Modified Items
ASB	3. A man's got to show the woman who's boss right from the start or he'll end up henpecked.	3. A man's got to show the woman who's boss right from the start or he'll end up henpecked ( <i>being continually criticized by a woman</i> ).
AIV	<p>1. People today should not use "an eye for an eye and tooth for a tooth" as a rule for living.</p> <p>3. Many times a woman will pretend she doesn't want to have intercourse because she doesn't want to seem loose, but she's really hoping the man will force her.</p> <p>5. Sometimes the only way a man can get a cold woman turned on is to use force.</p>	<p>1. People today should not use <i>revenge</i> "an eye for an eye and tooth for a tooth" as a rule for living.</p> <p>3. Many times a woman will pretend she doesn't want to have intercourse because she doesn't want to seem loose (<i>easy</i>), but she's really hoping the man will force her.</p> <p>5. Sometimes the only way a man can get a cold woman (<i>a woman not in the mood for sex</i>) turned on is to use force</p>

Note: AMMSA=Acceptance of Modern Myths about Sexual Aggression; ASB = Adversarial Sexual Beliefs; AIV= Acceptance of Interpersonal Violence

Table 2

*Descriptive Statistics for the Full Sample*

Scale	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
AMMSA	359	1.17	5.80	3.57	.83
Updated IRMA	352	1.00	4.42	2.58	.77
ASB	361	1.00	5.67	3.11	.99
SRS	365	1.13	6.13	3.21	.94
SC	365	1.00	5.30	3.10	.81
GSSJ	363	1.13	8.00	5.13	1.30
IM	363	1.57	6.14	3.93	.74
SHK	352	17.00	30.00	24.79	2.70

Note: AMMSA = Acceptance of Modern Myths about Sexual Aggression; Updated IRMA = Updated Illinois Rape Myth Acceptance; ASB = Adversarial Sexual Beliefs; SRS = Sex Role Stereotyping; SC = Sexual Conservatism; GSSJ = Gender Specific System Justification; IM = Impression Management; SHK = Sexual Health Knowledge.

Table 3

*Means and Standard Deviations, Significance Tests, and Effect Sizes for Study Variables by Participant Gender*

Scale	Men		Women		<i>F</i>	<i>p</i>	$\eta^2_{par}$	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
	n = 93		n = 227					
AMMSA	3.94	.69	3.41	.84	28.81***	<.001	.08	.69
Updated IRMA	2.91	.72	2.46	.77	23.44***	<.001	.07	.60
ASB	3.54	.89	2.94	.99	25.39***	<.001	.07	.64
SRS	3.51	.84	3.10	.95	13.35***	<.001	.04	.46
SC	3.26	.65	3.03	.86	5.48	.02	.02	.30
GSSJ	5.77	1.05	4.87	1.28	36.14***	<.001	.10	.77
IM	3.86	.69	3.94	.77	.69	.40	.002	.11
SHK	23.38	2.69	25.45	2.38	46.47***	<.001	.13	.81

Note: AMMSA = Acceptance of Modern Myths about Sexual Aggression; Updated IRMA = Updated Illinois Rape Myth Acceptance; ASB = Adversarial Sexual Beliefs; SRS = Sex Role Stereotyping; SC = Sexual Conservatism; GSSJ = Gender Specific System Justification; IM = Impression Management; SHK = Sexual Health Knowledge. Alpha levels set at  $p < .006$  (.05/8) to protect against Type I error.

\*\*\* $p < .05$ , \*\* $p < .001$



Table 4

*Means, Standard Deviations, Significance Tests, and Effect Sizes for Study Variables by Participant Region*

Scale	Rural		Suburban		Urban		<i>F</i>	$\eta^2_{par}$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
	n = 62		n = 160		n = 97			
AMMSA	3.45	.94	3.60	.82	3.58	.80	.70	.004
Updated IRMA	2.59	.87	2.56	.74	2.64	.80	.39	.002
ASB	2.88	1.01	3.21	1.02	3.12	.94	2.38	.01
SRS	3.10	.98	3.21	.89	3.30	1.01	.80	.005
SC	2.93	.84	3.14	.78	3.09	.85	1.50	.009
GSSJ	4.80	1.45	5.21	1.22	5.16	1.33	2.27	.01
IM	3.87	.77	4.02*	.79	3.74*	.61	4.05	.02
SHK	24.95	2.97	25.01	2.45	24.55	2.75	.96	.006

Note: AMMSA = Acceptance of Modern Myths about Sexual Aggression; Updated IRMA = Updated Illinois Rape Myth Acceptance; ASB = Adversarial Sexual Beliefs; SRS = Sex Role Stereotyping; SC = Sexual Conservatism; GSSJ = Gender Specific System Justification; IM = Impression Management; SHK = Sexual Health Knowledge. Alpha levels set at  $p < .006$  (.05/8) to protect against Type I error.

Table 5

*Correlations Between Type of Victimization, RMA measures, Sociocultural Attitudes, Sexual Health Knowledge, and Impression Management*

Measure	1	2	3	4	5	6	7	8	9	10
1. Sexual assault in past 12 months	—	.28**	.03	.01	.12	-.02	-.06	-.13	-.09	.06
2. Lifetime sexual assault		—	-.19**	-.07	-.06	-.11	-.23**	-.22**	-.07	.09
3. AMMSA			—	.77**	.56**	.49**	.42**	.36**	.01	-.37**
4. Updated IRMA				—	.53**	.49**	.44**	.43**	-.05	-.37**
5. ASB					—	.44**	.34**	.14*	-.25**	-.17*
6. SRS						—	.58**	.31**	.01	-.31**
7. SC							—	.43**	.10	-.41**
8. GSSJ								—	.08	-.21**
9. IM									—	-.08
10. SHK										—

Note: AMMSA = Acceptance of Modern Myths about Sexual Aggression; Updated IRMA = Updated Illinois Rape Myth Acceptance; ASB = Adversarial Sexual Beliefs; SRS = Sex Role Stereotyping; SC = Sexual Conservatism; GSSJ = Gender Specific System Justification; IM = Impression Management; SHK = Sexual Health Knowledge.

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

Table 6

*Means, Standard Deviations, Significance Tests, and Effect Sizes for Study Variables by Female Victimization Status*

Scale	Victims		Non-Victims		<i>F</i>	<i>p</i>	$\eta^2_{par}$	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
	n = 53		n = 174					
AMMSA	3.21	.82	3.47	.83	4.12	.04	.02	.31
Updated IRMA	2.40	.76	2.48	.77	.39	.53	.002	.10
ASB	2.85	1.13	2.97	.95	.68	.41	.003	.14
SRS	2.93	.84	3.15	.98	2.21	.14	.01	.24
SC	2.73	.91	3.13	.82	9.21	.003	.04	.46
GSSJ	4.48	1.29	4.99	1.26	6.32	.01	.03	.41
IM	3.88	.85	3.95	.75	.36	.55	.002	.09
SHK	25.77	2.37	25.35	2.37	1.29	.26	.006	.18

Note: AMMSA = Acceptance of Modern Myths about Sexual Aggression; Updated IRMA = Updated Illinois Rape Myth Acceptance; ASB = Adversarial Sexual Beliefs; SRS = Sex Role Stereotyping; SC = Sexual Conservatism; GSSJ = Gender Specific System Justification; IM = Impression Management; SHK = Sexual Health Knowledge. Alpha levels set at  $p < .006$  (.05/8) to protect against Type I error.

Table 7

*Bivariate Correlations for the AMMSA Scale*

Measure	1	2	3	4	5	6	7	8
1. AMMSA	—	.78**	.63**	.53**	.45**	.43**	-.10	-.42**
2. Updated IRMA		—	.59**	.54**	.45**	.46**	-.12*	-.37**
3. ASB			—	.50**	.37**	.26**	-.27**	-.26**
4. SRS				—	.60**	.38**	-.05	-.37**
5. SC					—	.41**	.10*	-.42**
6. GSSJ						—	.05	-.29**
7. IM							—	-.03
8. SHK								—

Note: AMMSA = Acceptance of Modern Myths about Sexual Aggression; Updated IRMA = Updated Illinois Rape Myth Acceptance; ASB = Adversarial Sexual Beliefs; SRS = Sex Role Stereotyping; SC = Sexual Conservatism; GSSJ = Gender Specific System Justification; IM = Impression Management; SHK = Sexual Health Knowledge.

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

Table 8

*Hierarchical Multiple Regression Results: The Relationship between Gender-Specific System Justification (GSSJ) and AMMSA Scores as Moderated by Victimization Status (Victim)*

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Block 1				
Constant	3.43	0.05		
GSSJ	0.27	0.04	0.41	< .001
Block 2				
Constant	3.46	0.05		
GSSJ	0.26	0.04	0.40	< .001
Victim	-0.14	0.11	-0.07	.21
Block 3				
Constant	3.46	0.05		
GSSJ	0.28	0.04	0.42	< .001
Victim	-0.16	0.12	-0.08	.17
Victim x GSSJ	-0.07	0.09	-0.05	.44

Note: Victim (victim = 1, non-victim = 0); GSSJ = Gender Specific System Justification

Table 9

*Hierarchical Multiple Regression Results: The Relationship between Sexual Conservatism (SC) and AMMSA Scores as Moderated by Victimization Status (Victim)*

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Block 1				
Constant	3.42	0.05		
SC	0.45	0.05	0.46	< .001
Block 2				
Constant	3.45	0.05		
SC	0.44	0.06	0.45	< .001
Victim	-0.11	0.11	-0.05	.34
Block 3				
Constant	3.45	0.05		
SC	0.45	0.07	0.46	< .001
Victim	-0.11	0.11	-0.06	.33
Victim x SC	-0.03	0.12	-0.01	.82

Note: Victim (victim = 1, non-victim = 0); SC = Sexual Conservatism

Table 10

*Hierarchical Multiple Regression Results: The Relationship between Sex Role Stereotyping (SRS) and AMMSA Scores as Moderated by Victimization Status (Victim)*

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Block 1				
Constant	3.41	0.04		
SRS	0.46	0.05	0.52	< .001
Block 2				
Constant	3.45	0.05		
SRS	0.45	0.05	0.51	< .001
Victim	-0.16	0.10	-0.08	.12
Block 3				
Constant	3.45	0.05		
SRS	0.43	0.05	0.48	< .001
Victim	-0.15	0.11	-0.08	.16
Victim x SRS	0.14	0.12	0.07	.27

Note: Victim (victim = 1, non-victim = 0); SRS = Sex Role Stereotyping

Table 11

*Hierarchical Multiple Regression Results: The Relationship between Adversarial Sexual Beliefs (ASB) and AMMSA Scores as Moderated by Victimization Status (Victim)*

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>
Block 1				
Constant	3.40	0.04		
ASB	0.50	0.04	0.59	< .001
Block 2				
Constant	3.45	0.05		
ASB	0.50	0.04	0.59	< .001
Victim	-0.19	0.10	-0.10	.05
Block 3				
Constant	3.45	0.05		
ASB	0.53	0.05	0.63	< .001
Victim	-0.19	0.11	-0.10	.05
Victim x ASB	-0.12	0.10	0.08	.21

Note. Victim (victim = 1, non-victim = 0); ASB = Adversarial Sexual Beliefs



Scale 1: Acceptance of Modern Myths About Sexual Aggression (AMMSA; Gerger et al., 2007)

Please read each statement carefully and then circle that number from 1 to 7 that you feel best represents your opinion.

The response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Completely Disagree</b>	<b>Disagree</b>	<b>Disagree somewhat</b>	<b>Neutral</b>	<b>Agree somewhat</b>	<b>Agree</b>	<b>Completely Agree</b>

1. When it comes to sexual contacts, women expect men to take the lead.
2. Once a man and a woman have started "making out", a woman's misgivings against sex (doubts about having sex) will automatically disappear.
3. A lot of women strongly complain about sexual restrictions for no real reason, just to appear emancipated (free).
4. To get custody for their children, women often falsely accuse their ex-husband of a tendency towards sexual violence.
5. Interpreting harmless gestures as "sexual harassment" is a popular weapon in the battle of the sexes.
6. It is a biological necessity for men to have a sexual release from time to time.
7. After a rape, women nowadays receive ample support.
8. Nowadays, a large proportion of rapes is partly caused by the depiction of sexuality in the media as this raises the sex drive of potential perpetrators.
9. If a woman invites a man to her home for a drink after a night out this means that she wants to have sex.
10. As long as they don't go too far, suggestive remarks simply tell a woman that she is attractive.
11. Any woman who is careless enough to walk through "dark alleys" at night is partly to be blamed if she is raped.
12. When a woman starts a relationship with a man, she must be aware that the man will assert his right to have sex.
13. Most women prefer to be praised for their looks rather than their intelligence.
14. Because the fascination caused by sex is disproportionately large, our society's sensitivity to crimes in this area is disproportionate as well.
15. Women like to play coy (innocent). This does not mean that they do not want sex.
16. Many women tend to exaggerate the problem of male violence.
17. When a man urges his female partner to have sex, this cannot be called rape.
18. When a single woman invites a single man to her apartment she signals that she is not averse to having sex.
19. When politicians deal with the topic of rape, they do so mainly because this topic is likely to attract the attention of the media.

20. When defining "marital rape", there is no clear-cut distinction between normal marital intercourse and rape.
21. A man's sexuality functions like a steam boiler – when the pressure gets too high, he has to "let off steam".
22. Women often accuse their husbands of marital rape just to retaliate for a failed relationship.
23. The discussion about sexual harassment on the job has mainly resulted in many a harmless behavior being misinterpreted as harassment.
24. In dating situations the general expectation is that the woman "hits the brakes" and the man "pushes ahead".
25. Although the victims of armed robbery have to fear for their lives, they receive far less psychological support than do rape victims.
26. Alcohol is often the culprit when a man rapes a woman.
27. Many women tend to misinterpret a well-meant gesture (an innocent gesture) as a "sexual assault".
28. Nowadays, the victims of sexual violence receive sufficient help in the form of women's shelters, therapy offers, and support groups.
29. Instead of worrying about alleged victims of sexual violence society should attend to more urgent problems, e.g., environmental destruction.
30. Nowadays, men who actually sexually assault women are punished justly.

Scale 2: Updated Illinois Rape Myth Acceptance Scale (updated IRMA; McMahon & Farmer, 2011)

For each of the attitude statements and questions, please circle the extent to which you agree or disagree using the following scale:

The response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>

1. If a girl is raped while she is drunk, she is at least somewhat responsible for letting things get out of hand.
2. When girls go to parties wearing slutty clothes, they are asking for trouble.
3. If a girl goes to a room alone with a guy at a party, it is her own fault if she is raped.
4. If a girl acts like a slut, eventually she is going to get into trouble.
5. When girls get raped, it's often because the way they said "no" was unclear.
6. If a girl initiates kissing or hooking up, she should not be surprised if a guy assumes she wants to have sex.
7. When guys rape, it is usually because of their strong desire for sex.
8. Guys don't usually intend to force sex on a girl, but sometimes they get too sexually carried away.

9. Rape happens when a guy's sex drive goes out of control.
10. If a guy is drunk, he might rape someone unintentionally.
11. It shouldn't be considered rape if a guy is drunk and didn't realize what he was doing.
12. If both people are drunk, it can't be rape.
13. If a girl doesn't physically resist sex—even if protesting verbally—it can't be considered rape.
14. If a girl doesn't physically fight back, you can't really say it was rape.
15. A rape probably doesn't happen if a girl doesn't have any bruises or marks.
16. If the accused "rapist" doesn't have a weapon, you really can't call it rape.
17. If a girl doesn't say "no" she can't claim rape.
18. A lot of times, girls who say they were raped agreed to have sex and then regret it.
19. Rape accusations are often used as a way of getting back at guys.
20. A lot of times, girls who say they were raped often led the guy on and then had regrets.
21. A lot of times, girls who claim they were raped have emotional problems.
22. Girls who are caught cheating on their boyfriends sometimes claim it was rape

Scale 3: Adversarial Sexual Beliefs (Burt, 1980)

The response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Disagree somewhat</b>	<b>Neutral</b>	<b>Agree somewhat</b>	<b>Agree</b>	<b>Strongly Agree</b>

1. A woman will only respect a man who will lay down the law to her.
2. Many women are so demanding sexually that a man just can't satisfy them.
3. A man's got to show the women who's boss right from the start or he'll end up henpecked (being continually criticized by a woman).
4. Women are usually sweet until they've caught a man, but then they let their true self show.
5. A lot of men talk big, but when it comes down to it, they can't perform well sexually.
6. In a dating relationship a woman is largely out to take advantage of a man.
7. Men are out for only one thing.
8. Most women are sly and manipulating when they are out to attract a man.
9. A lot of women seem to get pleasure in putting men down.

## Scale 4: Acceptance of Interpersonal Violence (Burt, 1980)

The response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Disagree somewhat</b>	<b>Neutral</b>	<b>Agree somewhat</b>	<b>Agree</b>	<b>Strongly Agree</b>

1. People today should not use **revenge** (“an eye for an eye and a tooth for a tooth”) as a rule for living.
2. Being roughed up is sexually stimulating to many women.
3. Many times a woman will pretend she doesn’t want to have intercourse because she doesn’t want to seem loose (**easy**), but she’s really hoping the man will force her.
4. A wife should move out of the house if her husband hits her.
5. Sometimes the only way a man can get a cold woman (**a woman not in the mood for sex**) turned on is to use force.
6. A man is never justified in hitting his wife.

## Scale 5: Sex Role Stereotyping (Burt, 1980)

The response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Disagree somewhat</b>	<b>Neutral</b>	<b>Agree somewhat</b>	<b>Agree</b>	<b>Strongly Agree</b>

1. A man should fight when the woman he’s with is insulted by another man.
2. It is acceptable for the woman to pay for the date.
3. A woman should be a virgin when she marries.
4. There is something wrong with a woman who doesn’t want to marry and raise a family.
5. A wife should never contradict her husband in public.
6. It is better for a woman to use her feminine charm to get what she wants rather than ask for it outright.
7. It is acceptable for a woman to have a career, but marriage and family should come first.
8. It looks worse for a woman to be drunk than for a man to be drunk.
9. There is nothing wrong with a woman going to a bar alone.

## Scale 6: Sexual Conservatism (Burt, 1980)

The response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Disagree somewhat</b>	<b>Neutral</b>	<b>Agree somewhat</b>	<b>Agree</b>	<b>Strongly Agree</b>

1. A woman who initiates a sexual encounter will probably have sex with anybody.
2. A woman shouldn't give in sexually to a man too easily or he'll think she's loose.
3. Men have a biologically stronger sex drive than women.
4. A nice woman will be offended or embarrassed by dirty jokes.
5. Masturbation is a normal sexual activity.
6. People should not have oral sex.
7. I would have no respect for a woman who engages in sexual relationships without any emotional involvement.
8. Having sex during the menstrual period is unpleasant.
9. The primary goal of sexual intercourse should be to have children.
10. Women have the same needs for a sexual outlet as men.

## Scale 7: Gender Specific System Justification (Jost &amp; Kay, 2005)

Instructions: Please read the sentences below. Use the scale to indicate to what degree you agree or disagree with each sentence. The response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Somewhat Disagree</b>	<b>Disagree a little</b>	<b>Neutral</b>	<b>Agree a little</b>	<b>Somewhat Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>

1. In general, relations between men and women are fair.
2. The division of labor in families generally operates as it should.
3. Gender roles need to be radically restructured.
4. For women, the United States is the best country in the world to live in.
5. Most policies relating to gender and the sexual division of labor serve the greater good.
6. Everyone (male or female) has a fair shot at wealth and happiness.
7. Sexism in society is getting worse every year.
8. Society is set up so that men and women usually get what they deserve.

## Scale 8: Impression Management (Paulhus, 1984)

Response options are:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Disagree somewhat</b>	<b>Neutral</b>	<b>Agree somewhat</b>	<b>Agree</b>	<b>Strongly Agree</b>

1. Do you tell the truth?
2. When you take sick-leave from work or school, are you as sick as you say you are?
3. I am always courteous, even to people who are disagreeable.
4. Once in a while I laugh at a dirty joke.
5. I sometimes try to get even, rather forgive and forget.
6. I always apologize to others for my mistakes.
7. Would you declare everything at customs, even if you knew that you could never be found out?
8. I never attend a sexy show if I can avoid it.
9. Sometimes at elections I vote for candidates I know little about.
10. I am sometimes irritated by people who ask favors of me.

## Scale 9: Sexual Health Knowledge Scale (Carrera, 2000)

Response options are:            True    False

1. The fluid that contains male sperm is called semen.
2. Sperm is made in the testicles.
3. Young people who do not have sexual intercourse for extended periods of time can damage their sexual or reproductive systems.
4. If a girl has sexual intercourse during her period, she can still get pregnant.
5. Sometimes boys get erections when they don't want them.
6. Teenage girls should perform a breast self-examination once a month after the start of puberty.
7. Teens who do not have sexual intercourse have no way of physically satisfying their sexual needs.
8. There is usually a problem if a teenage girl doesn't get her period by the time she is 14.
9. The male hormone is called testosterone.
10. Sometimes a boy's penis gets stuck in a girl's vagina.
11. A teenage girl who has had an abortion will have difficulty getting pregnant when she wants to have a baby. (scored 2x)
12. Young people can never choose to be abstinent once they have had sexual intercourse.
13. Urination and menstruation occur through the same opening in the vagina.
14. A Pap smear test is used to check for cancer of the cervix.
15. It's dangerous to have sexual intercourse during a girl's period.
16. Every girl who has not had sex still has her hymen

17. When a girl has her period, her uterus and vagina are not as clean as other times.
18. After a girl has her period, for good health, it's important to douche.
19. The vagina can get stretched from too much sex.
20. Pregnancy happens when a sperm fertilizes an ovum (egg).
21. Girls cannot get pregnant the first time they have sex.
22. If a girl has sex only once in a while, she really doesn't need birth control.
23. In an emergency, it's usually okay to take some else's birth control pills.
24. A female can get pregnant through oral sex.
25. Sperm can live for a few days in the woman's body.
26. If the boy pulls out, just at the right time, the girl won't get pregnant.
27. Teenagers do not need their parents' or guardians' permission to get birth control from clinics.
28. Douching is a method of birth control.
29. Fertilization of the egg occurs in the vagina. (scored 2x)
30. Letting semen drip out of the vagina after sex prevents pregnancy.

## Appendix B: Debrief

## Debriefing Information

Dear Participant,

Thank you for taking the time to participate in my study, *Cultural Beliefs about Human Behavior*. I would like to take the opportunity to leave you with some parting information regarding my study. The main component of my study examined attitudes and beliefs regarding sexual assault and rape myths. Rape myths are defined as inaccurate attitudes and beliefs about rape that serve to blame victims and excuse the actions of rapists (Brownmiller, 1975). Below I have listed some common myths and then provided the facts based upon psychological research. Like gossip, myths are routinely spread and well-known, but they are not accurate. As a college student, please take the time to learn the facts about sexual assault so that you can help yourself and your friends.

*Why should this be important to you?*

- Research has shown that high levels of rape myth beliefs in men are linked to higher likelihood of committing rape (Bohner et al., 2005).
- Women who believe in rape myths tend to ignore their risk for being a potential target for sexual assault (Bohner et al., 2002).
- Supporting rape myths contributes to the prevalence of sexual violence on college campuses and in the general public.
- I urge you to be part of the solution! Educate yourself and your friends. Stop sexual assault now.

1. Myth: Most rape occurs by strangers

**Fact:** A study of sexual victimization of college women showed that 9 out of 10 victims knew the person who sexually victimized them (Fisher, Cullen & Turner, 2000).

2. Myth: Sexual assault does not happen often.

**Fact:** College women are at the greatest risk for being sexually assaulted. Approximately 1 in 5 women has been sexually assaulted while in college (The White House Council on Women and Girls, 2014).

3. Myth: Women who are scantily dressed are asking to be raped.

**Fact:** It doesn't matter what a woman is wearing. If a woman does not give her explicit consent to sex or any sexual act, it is rape. It is a crime. (United States Department of Justice, 2015).



4. Myth: A man should not be labeled as a rapist if a woman leads him on.  
**Fact:** A woman is allowed to change her mind at any time. If she does not provide her explicit consent to a sexual act, then it is rape. (United States Department of Justice, 2015).
5. Myth: A woman cannot claim rape if she was drinking at the time of the incident  
**Fact:** Under no circumstances is it okay for a man to take advantage of a woman sexually. Intoxication is not an excuse to rape. (United States Department of Justice, 2015).
6. Myth: Men cannot control their sexual impulses  
**Fact:** Men have the ability to control their urges. They can make rational decisions that are in line with the law. **Rape is a premeditated crime.** Research shows that the majority of convicted rapists assaulted for the emotion gratification they received from the violent act, not out of sexual frustration. (Burt, 1980).
7. Myth: If a woman does not physically fight back, it's not rape.  
**Fact:** There is a wide range of responses women can have to rape, which include verbal or physical resistance, silence due to fear, shock or loss of consciousness (Woodhams, Hollin, Bull & Cooke, 2012).
8. Myth: Unless you are physically injured, rape is not really that damaging.  
**Fact:** A weapon and visible physical injuries do not have to be present in order for a woman's experience to be sexual assault. Rape has been shown to cause long lasting psychological and physical distress including mental illness, sexually transmitted infections, reproductive complications, unwanted pregnancies, induced abortions, likelihood of future victimization, risky sexual behaviors, inability to function well in society, and death by suicide and homicide (Campbell, Keegan, Cybulska, & Forster, 2007; Zinzow, et al., 2011).
9. Myth: Most women lie about being raped  
**Fact:** Most women who report being raped actually experienced it. It is estimated that 95% of the reported cases have been legitimate (Lisak et al., 2010).
10. Myth: Rape only happens to certain types of women  
**Fact: Rape can happen to anyone** regardless of age, race/ethnicity, and social class. The number one thing convicted rapists look for in a victim is her vulnerability, not her appearance (Office of Justice Programs, 2015).

Again, rape myths are inaccurate beliefs that blame victims and excuse the actions of rapists. Most women know the men who rape them; 1 in 5 college women will experience a sexual assault; a woman should not be blamed for what she is wearing.

**Here are some definitions of sexual assault and rape:**

- **Sexual assault:** any type of sexual activity that the individual does not give consent to, which includes inappropriate touching, vaginal, anal, or oral penetration, rape, attempted rape, and child molestation (Office on Women's Health, 2014).
- **Rape** (defined by Georgia Law): A person commits the offense of rape when he has carnal knowledge of: penetration of the female sex organ by the male sex organ, forcibly and against her will OR if she is < 10 years old (Georgia Code, 2010).