

Exploring the Underlying Constructs of Rape Cognition Scales and Their Relationships with  
Sexual Aggression

by

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### **Abstract**

Rape cognition is thought to play an important role in the initiation and maintenance of sexually aggressive behaviours (e.g., Beech et al., 2013; Helmus et al., 2013; Mann & Beech, 2003; Mann et al., 2010; Ó Ciardha & Gannon, 2011; Ward & Beech, 2006; Ward et al., 2006). However, empirical evidence remains mixed regarding this relationship. One explanation for the discrepancy proposed by researchers (e.g., Hermann et al., 2012) is that rape cognition is merely an umbrella term that encompasses many distinct types of cognitions already prevalent in the social psychological literature (e.g., attitudes, beliefs, justifications, excuses). Self-report measures of rape cognition typically assume that there is one general construct to be assessed, without conclusive evidence to support this notion.

This study attempted to replicate and extend past research by examining whether the Rape Myth Acceptance Scale, RAPE Scale, and Illinois Rape Myth Acceptance are assessing the same general construct or multiple distinct constructs by entering all items into one exploratory factor analysis (EFA). Complete scores on all three measures from 191 men from the community were entered into the EFA, which resulted in one interpretable factor, suggesting that these measures were assessing the same general construct of rape cognition. The factor was also significantly correlated with self-reported measures of past and future likelihood of sexual aggression (i.e., Sexual Experiences Survey – Tactics Version – Revised and the Proclivity – Sexual Experiences Survey – Tactics Version – Revised). This suggests that the general construct assessed by measures of rape cognition is related to sexually aggressive behaviours. Possible explanations for the current findings are discussed.

*Keywords:* rape cognition, rape-supportive cognition, cognitive distortions, rape myth acceptance, sexual aggression, sexually aggressive behaviour, exploratory factor analysis

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## Exploring the Underlying Constructs of Rape Cognition Scales and Their Relationships with Sexual Aggression

Sexual offences are among crimes that invoke the most public concern (Lisak & Miller, 2002). National surveys have estimated that 1,977 of every 100,000 Canadian women are victims of sexual assault (Brennan & Taylor-Butts, 2008). Although the rate of sexual offenses has been declining (Boyce, Cotter, Perreault, 2013), the profound negative consequences of such offenses (Resick, 1993) motivate exceptional efforts to identify potential causal factors of sexually aggressive behaviours. Identifying such factors would increase effectiveness of assessment, management, and treatment interventions to reduce sexual offending and ensure public safety.

Cognitions regarding rape are thought to play an important role in the initiation and maintenance of sexually aggressive behaviours (e.g., Beech et al., 2013; Helmus et al., 2013; Mann & Beech, 2003; Mann et al., 2010; Ó Ciardha & Gannon, 2011; Ward & Beech, 2006; Ward et al., 2006). These cognitions have been referred to in the literature with varying terminology including rape-supportive cognition, cognitive distortions, rape myths, and rape attitudes and beliefs. However, terminology such as rape-supportive cognition assumes that these cognitions have relationships with sexually aggressive behaviours. Specifically, the literature to date assumes that measures are assessing certain constructs and that these constructs are relevant to sexually aggressive behaviours, but there is no clear evidence to demonstrate the constructs assessed or their relationships with sexually aggressive behaviours, or the nature of such relationships (e.g., correlational or causal). Therefore, in the current thesis, the term *rape cognition* will be used in an attempt to include all the conceptualizations and measurements, but also to avoid such assumptions about the underlying constructs and their relationships with

sexually aggressive behaviours. Thus, rape cognition encompasses attitudes, beliefs, excuses, and justifications about rape, rapists, women, and victims of rape (Hermann, Babchishin, Nunes, Leth-Steensen, & Cortoni, 2012) that are believed to be related to the initiation and/or maintenance of rape.

Researchers have suggested that rape cognition plays an important role in the development of sexual aggression. Indeed, rape cognition is a key feature in many theoretical models on the causes of rape (e.g., Hall & Hirschmann, 1991; Malamuth, 1986; Ward, 2000; Ward & Beech, 2005; Ward, Gannon, & Keown, 2006). Although some studies have found a relationship between rape cognition and sexually aggressive behaviours (e.g., Abbey & McAuslan, 2004; Abbey, Wegner, Pierce, & Jacques-Tiura, 2012; Bernat, Stolp, Calhoun, & Adams, 1997; Blake & Gannon, 2010; Bohner, Jarvis, Eyssel, & Seibler, 2005; Bumby, 1996; DeGue & DiLillo, 2004; Lanier, 2001; Thompson, Koss, Kingree, Goree, & Rice, 2010), others have not (e.g., Blumenthal, Gudjonsson, & Burns, 1999; Hanson & Morton-Bourgon, 2004; Helmus, Hanson, Babchishin, & Mann, 2013; Pervan & Hunter, 2007; Seto & Lalumiere, 2010). Nevertheless, rape cognition is sometimes considered in sex offender risk assessments (Olver, Wong, Nicholaichuk, & Gordon, 2007), is routinely addressed in most North American treatment programs (McGrath, Cumming, Burchard, Zeoli, & Ellergy, 2010), and is considered to be a relevant risk factor for sexual aggression (Mann, Hanson, & Thornton, 2010).

Recently, Hermann et al. (2012) have proposed that mixed findings in the literature are perhaps the result of measuring distinct constructs as one overall construct (i.e., rape cognition), a hypothesis also proposed by more recent causal models of sexual aggression (e.g., Ward, Gannon, & Keown, 2006). In support of this notion, both qualitative and quantitative studies have found that commonly used measures of rape cognition tend to assess distinct underlying

constructs (e.g., Briere, Malamuth, & Check, 1985; Field, 1978; Hermann et al., 2012; Polaschek & Ward, 2002; Scully & Marolla, 1984). Despite this, widely used self-report measures of rape cognition do not distinguish between these constructs (e.g., Basow & Minieri, 2011; Bouffard & Bouffard, 2011).

Additionally, researchers have proposed that distinct underlying constructs may have different relationships with sexually aggressive behaviours (e.g., Hermann et al., 2012; Maruna & Mann, 2006), and there has been some empirical evidence to support this (e.g., Bartels & Gentry, 2015; Hermann et al., 2012; Mouilso & Calhoun, 2013; Nunes, Hermann, White, Pettersen, & Bumby, 2015). Therefore, it is possible that only some underlying constructs are relevant to understanding, and provide incremental information to assess and predict, sexually aggressive behaviours. If this is true, then it would indicate that other constructs may only provide redundant information, and should, therefore, be excluded from rape cognition measures.

In considering this gap within the literature, the proposed study aims to further examine whether distinct underlying constructs exist, not only within commonly used measures of rape cognition, but also between measures (i.e., the degree of overlap between measures). In the literature review below, I will elaborate on relevant theory and evidence regarding the relationship between rape cognition and sexually aggressive behaviours, as well as the rationale for the proposed study in more detail.

### **Relationship between Rape Cognition and Sexual Aggression**

Several prominent theoretical models suggest that rape cognition plays an important role in sexual aggression (e.g., Hall & Hirschman, 1991; Malamuth, 1986; Malamuth et al., 1991; Ward, 2000; Ward & Beech, 2005). For example, Malamuth's confluence model (Malamuth, 1986; Malamuth et al., 1991) outlines two pathways that lead to sexual aggression—the

*antisocial/impersonal sex* path and the *hostile masculinity* path—each of which contains a number of risk factors that converge for an individual to be at high risk of sexual aggression. Particularly in the hostile masculinity path, Malamuth and colleagues posited that sexually aggressive behaviours may stem from rape cognition (e.g., beliefs accepting violence against, and hostility towards, women), narcissism, and a need to sexually dominate women. Thus, many models on the causes of rape (e.g., Hall and Hirschman's Quadripartite model, Malamuth's confluence model) suggest that rape cognition is one factor that promotes sexually aggressive behaviours.

The relationship between rape cognition and sexually aggressive behaviours has also been empirically investigated. To date, studies examining the relationship between rape cognition and sexually aggressive behaviours tend to differ in whether they are cross-sectional or longitudinal designs and samples used (i.e., comparison groups). In reviewing the literature, it is apparent that, although theories have proposed that rape cognition may play a causal role in sexual aggression, the empirical evidence on the causal relationship remains inconsistent.

Some cross-sectional studies comparing sexually aggressive and non-sexually aggressive groups of men on rape cognition have found that sexually aggressive men endorsed significantly more rape cognition than non-sexually aggressive men (e.g., Abbey & McAuslan, 2004; Bumby, 1996; DeGue & DiLillo, 2004; DeGue, DiLillo, & Scalora, 2010; Feelgood et al., 2005; Lanier, 2001), whereas other studies have not found significant differences (e.g., Blumenthal, Gudjonsson, & Burns, 1999; Pervan & Hunter, 2007; Seto & Lalumière, 2010). For example, DeGue et al. (2010) found that incarcerated offenders who self-reported engaging in sexually aggressive behaviours, compared to those who did not, endorsed significantly more rape cognition. Similarly, among 89 incarcerated offenders, Bumby (1996) found that rapists

generally endorsed more rape cognition than nonsexual offenders. In contrast, Feelgood et al. (2005) compared rapists, child molesters, and violent offender groups on the RAPE and MOLEST Scales (Bumby, 1996) and found no significant group differences on the RAPE Scale. Likewise, Pervan and Hunter (2007) found that rapists did not significantly differ from child molesters, nonsexual violent offenders, or male university students on the RAPE Scale. Notably, although the differences did not approach significance, rapists still generally scored higher on levels of rape cognition than the comparison groups in these studies. For example, the effect size analysis in Feelgood et al.'s (2005) study indicated that rapists scored higher on rape cognition than both child molesters ( $d = 0.36$ ) and nonsexual violent offenders ( $d = 0.34$ ). Overall, these findings suggest that sexually aggressive men generally endorse more rape cognition than non-sexually aggressive men.

Moreover, cross-sectional research examining the relationship between rape cognition and indicators of sexual aggression, such as self-reported past or future likelihood of sexually aggressive behaviours, has generally found positive relationships (e.g., Anderson, Cooper, & Okamura, 1997; Bernat, Stolp, Calhoun, & Adams, 1997; Blake & Gannon, 2010; Bohner, Jarvis, Eyssel, & Siebler, 2005; Burgess, 2007; Lanier, 2001; Malamuth, 1981; Murnen, Wright, & Kaluzny, 2002; Suarez & Gadalla, 2010). For example, Anderson et al. (1997) conducted a meta-analysis and found significant positive relationships between rape cognition and past sexually aggressive behaviours ( $r = .19$ , 95% CI [.15, .23],  $k = 6$ ) and self-reported proclivity (i.e., likelihood) to rape ( $r = .38$ , 95% CI [.34, .42],  $k = 7$ ). Importantly, researchers have found that self-reported proclivity to rape is significantly associated with sexually aggressive behaviours in student samples, suggesting that it is a reasonable indicator of sexual aggression (Gidycz, Warkentin, Orchowski, & Edwards, 2011; O'Donohue, McKay, & Schewe, 1996).

More recently, Suarez and Gadalla (2010) found a large positive relationship between rape cognition and past sexually aggressive behaviours ( $d = 0.91$ ,  $k = 9$ ) in their meta-analysis. These results are consistent with the hypothesis that rape cognition is a contributing factor in the perpetration of sexually aggressive behaviours.

In contrast, longitudinal research has not found that rape cognition predicts sexual recidivism among convicted rapists, but has consistently found a relationship between rape cognition and future sexual aggression among male university students and community men (e.g., Abbey & McAuslan, 2004; Abbey et al., 2012; Hall, DeGarmo, Eap, Teten, & Sue, 2006; Thompson, Koss, Kingree, Goree, & Rice, 2010; Wegner et al., 2015). For example, in a recent meta-analysis (Helmus et al., 2013), rape cognition did not significantly predict sexual recidivism among rapists ( $d = 0.14$ , 95% CI [-.17, .46],  $k = 4$ ,  $n = 460$ ). On the other hand, using 425 men from the community, Abbey et al. (2012) examined the relationship between rape cognition and sexually aggressive behaviours over a 1-year time interval. Information about whether participants had engaged in sexually aggressive behaviours at two time points one year apart was used to divide participants into 4 mutually exclusive groups: *persisters* ( $n = 76$ ) reported one or more acts of sexual aggression at both time points; *desisters* ( $n = 107$ ) reported one or more acts of sexual aggression at Time 1, but none at Time 2; *initiators* ( $n = 32$ ) did not report any acts of sexual aggression at Time 1, but reported at least one at Time 2; and *nonperpetrators* ( $n = 208$ ) did not report any acts of sexual aggression at either time points. The researchers found that persisters endorsed significantly more rape cognition than nonperpetrators. The same pattern of results also emerged among male university students (Abbey & McAuslan, 2004). Likewise, Wegner et al. (2015) interviewed 470 community men to investigate whether endorsing rape cognition would predict future sexual aggression over a 1-

year follow-up interval. They found a significant positive association between rape cognition and sexually aggressive behaviours during the 1-year follow-up period ( $r = .15, p < .05$ ).

Findings from these studies demonstrate that rape cognition prospectively predicts sexually aggressive behaviours among male university students and community men, but not among convicted rapists.

In sum, theoretical models propose that rape cognition is one important factor that may play a significant role in determining sexually aggressive behaviours, but empirical findings are generally mixed regarding this relationship. Evidence from cross-sectional studies seem to suggest that rapists generally endorse more rape cognition than comparison groups and that there is a positive relationship between rape cognition and sexually aggressive behaviours. However, evidence from longitudinal studies seem to suggest that rape cognition only predicts future sexually aggressive behaviours among male university students and community men, but not among convicted rapists, perhaps suggesting that the conceptualization and measurement of rape cognition in the criminological literature needs further clarification.

### **Distinct Underlying Constructs of Rape Cognition Measures**

Some researchers have suggested that the inconsistent empirical evidence reviewed above is the result of a lack of precision and clarity in the conceptualization and measurement of rape cognition. Relatedly, more recent theoretical models have suggested that rape cognition consists of distinct cognitive constructs, rather than one general construct. For example, the judgment model of cognitive distortions (JMCD; Ward et al., 2006) proposes that there are three types of rape cognition (i.e., judgments) that tend to cluster together and are believed to interact to promote sexual aggression: (1) *belief-based judgments*, (2) *value-based judgments*, and (3) *action-based judgments*. Ward et al. (2006) defined *belief-based judgments* as knowledge about

the self and/or world that may be true or false. This judgment type incorporates most of the implicit theories proposed by Ward and colleagues discussed later (Polaschek & Ward, 2002; Ward, 2000; Ward & Keenan, 1999). *Value-based judgments* refer to aspects of people or the world that the individual evaluates as positive or negative, which are directly related to primary human needs. Ward et al. (2006) argued that offenders do not necessarily value the wrong things, but instead they may try to meet those primary needs in an inappropriate way, which may involve faulty belief-based judgments. *Action-based judgments* are evaluations that are made as a result of actions that have been committed, which may encompass various post-hoc excuses, rationalizations, etc. Therefore, this type of cognition may emerge as a by-product of initiating sexual aggression. This theory suggests that there may be distinct cognitions that are related to sexually aggressive behaviours.

As mentioned previously, the term rape cognition is vague and often described as encompassing distinct types of cognitive constructs that researchers have noted may be more distinct than similar (e.g., Gannon & Polaschek, 2006; Gannon, Ward, Collie, 2007; Mann & Beech, 2003; Maruna & Mann, 2006; Ward et al., 2006). As such, researchers often discuss rape cognition in different ways. For example, the term has been used interchangeably with a variety of other terms, including irrational attitudes, maladaptive beliefs, cognitive products, thinking errors, excuses, justifications, minimizations, rationalizations, and perceptions and judgments (e.g., Abel, Becker, & Cunningham-Rathner, 1984; Murphy, 1990; Nichols & Molinder, 1984; Pollock & Hashmill, 1991; Prentky & Knight, 1991; Segal & Stermac, 1990; Ward, Keenan, & Hudson, 2000). Thus, the concept of rape cognition seems to lack clarity and precision in the criminological literature.

In line with this, Nunes and colleagues (Nunes, Hermann, Maimone, & Woods, 2014; Nunes et al., 2015) have argued that there is a discrepancy in how the term *attitudes* is defined in the criminological and social psychological literature. For example, social psychologists typically define attitudes as evaluations of psychological objects (Ajzen, 2001; Eagly & Chaiken, 1993; Fazio, 2007). Notwithstanding, in the criminological literature, “attitudes” is often used as a synonym for various cognitions, including excuses, justifications, rationalizations, neutralizations, and moral disengagement (e.g., Burt, 1980; Field, 1978; Ward et al., 2000). More specifically, Nunes et al. (2015) conducted an exploratory factor analysis (EFA) on data obtained from 660 heterosexual male university students to determine whether items from the RAPE Scale, assessing rape cognition (Bumby, 1996), and a semantic differential scale, assessing evaluations toward rape, formed distinct or overlapping factors. Results demonstrated that items from both scales loaded onto separate factors, suggesting that the RAPE Scale may not be assessing evaluations (i.e., attitudes) toward rape. However, the literature often assumes that rape cognition measures are assessing evaluations, among other cognitions. Thus, researchers have recently highlighted the importance of—and begun to work towards—greater clarity and precision in the conceptualization and measurement of such cognitions (e.g., Beech, Bartels, & Dixon, 2013; Gannon & Polaschek, 2006; Gannon et al., 2007; Helmus et al., 2013; Hermann et al., 2012; Mann & Beech, 2003; Maruna & Mann, 2006; Ward, Gannon, & Keown, 2006; Ward, Hudson, Johnston, & Marshall, 1997).

One approach to better understand the underlying elements of rape cognition is to qualitatively organize offenders’ statements or scale items into distinct groups. For example, Polaschek and Ward (2002) derived five core themes (i.e., implicit theories) from existing rape cognition measures: (1) *women are unknowable* theory postulates that women are biologically

and socially different from men and that these differences cannot be readily understood by men, which serves to inhibit development of a realistic complex understanding of women's beliefs and desires; (2) *women as sex objects* theory assumes that women will constantly desire sex, even if it is coerced or violent. This type of thinking may lead to misattributing sexual intent to their nonsexual behaviour (e.g., a friendly smile) and facilitate sexual aggression towards women; (3) *male sex drive is uncontrollable* theory postulates that men's sex drive is inherently uncontrollable and that women play a large role in its loss of control; thereby, attributing blame to the victim or external factors (e.g., availability of alcohol); (4) *entitlement* is the theory that men should have their needs (including sexual) met on demand; therefore, men may believe that they are entitled to have sex with whomever they desire, whether or not it is consensual; and (5) *dangerous world* is a theory based on core beliefs that the world is essentially a hostile and uncaring place where others are out to harm, exploit, and degrade and deceive in order to promote their own interests. It often works in tandem with the *entitlement* theory to justify and support exploitative and harmful behaviour towards others. Taken together, Ward and colleagues suggest that rape cognition may consist of distinct themes that may lead to sexual aggression.

Likewise, other qualitative research has found that offenders' statements can be also organized into categories. For example, Scully and Marolla (1984) interviewed 114 convicted rapists and found evidence of five rape cognition themes: (1) *women as seductresses* theme refers to the belief that raped women are victims of their own seduction because women are supposed to be coy about their sexual availability, and thus, mitigating the perpetrators' responsibility for rape; (2) *women mean "yes" when they say "no"* theme refers to the rationalization that women secretly want to be raped, which is evidenced when they do not resist

attacks; (3) *most women eventually relax and enjoy it* theme reflects the belief that, not only are women willing, but also enjoy themselves during rape, and therefore, minimal harm was done; (4) *nice girls don't get raped* theme reflects the belief that it is the victim's fault for placing herself in a situation to be raped; and (5) *only a minor wrongdoing* theme refers to the belief that rapists' behaviours should not be considered as rape by attempting to discredit and blame the victim. Thus, evidence from theory and qualitative research seem to suggest that rape cognition likely reflects distinct underlying constructs.

Quantitative research is another approach to better understand the underlying elements of rape cognition. Consistent with theory and qualitative research, factor analyses of various self-report rape cognition scales generally suggest that they are multidimensional. For example, Field (1978) developed the Attitudes Toward Rape questionnaire, which consists of 32 items rated on a 6-point Likert scale. Field (1978) subsequently conducted a principle components analysis (PCA) on the measure and found that the items loaded onto eight factors, suggesting that this measure contains distinct constructs. The eight factors were *Woman's Responsibility in Rape Prevention*, *Sex as Motivation for Rape*, *Severe Punishment for Rape*, *Victim Precipitation of Rape*, *Normality of Rapists*, *Power as Motivation for Rape*, *Favorable Perception of a Woman After Rape*, and *Resistance as Woman's Role During Rape*.

Moreover, Briere et al. (1985) used 52 male university students to conduct a PCA of Burt's (1980) Rape Myth Acceptance Scale (RMAS), which consists of 19 items rated on a 5- or 7-point Likert scale. The authors found four independent factors: *Disbelief to Rape Claims* (six items), *Victim Responsible for Rape* (nine items), *Rape Reports as Manipulation* (two items), and *Rape Only Happens to Certain Kinds of Women* (one item). One item (Item 3 "One reason that women falsely report a rape is that they frequently have a need to call attention to themselves.")

did not load significantly on any factor. Similarly, Uji, Shono, Shikai, & Kitamura (2007) conducted an EFA on the RMAS and extracted two factors based on the scree plot, where one item (Item 2 “Any female can get raped.”) did not load significantly on either factor. However, the researchers noted that the differences between these factors were not interpretable; and hence, they concluded that a single factor solution (excluding Item 2) would be more appropriate. Nonetheless, these studies demonstrate that the RMAS contains multiple factors.

More recently, Hermann et al. (2012) used 280 adult male sex offenders to conduct an EFA of the RAPE Scale (Bumby, 1996), which consists of 36 statements rated on a 4-point Likert scale. The EFA yielded two distinct factors, both of which were also found to be distinct from items more clearly reflecting evaluations of rape (Nunes et al., 2015), suggesting that the RAPE Scale is also multidimensional. The researchers labeled the first factor *Excusing Rape* (20 items) and noted that this factor contained items that seem to serve the common function of mitigating rapists’ responsibility or guilt for rape by questioning the credibility of victims’ accusations, attributing rape to the complicity of victims, and attributing responsibility for the offense to high sex drive, sexual deprivation, and childhood sexual victimization. The second factor was labeled *Justifying Rape* (16 items) and the researchers noted that items from this factor seem to minimize the perceived wrongfulness or harmfulness of rape by reflecting sentiments of sexual entitlement, an adversarial approach to sexual relationships, hostility towards women, and minimizing harm to victims. Along with the studies above, this study demonstrates that self-reported measures of rape cognition are assessing distinct underlying constructs.

Although empirical evidence demonstrates that commonly used measures of rape cognition may be assessing distinct underlying constructs, such measures (e.g., RAPE Scale) are

often used to assess a general construct (e.g., rape cognition, cognitive distortions, etc.). To address this shortcoming, using structural equation modeling, Payne et al. (1999) developed the Illinois Rape Myth Acceptance Scale (IRMAS), which consists of seven distinct subscales based on empirical evidence: (1) *She Asked for It* subscale reflects cognitions related to the idea that some women ask to be assaulted; (2) *It Wasn't Really Rape* subscale reflects the belief that if the woman was not physically injured or resisting, then it is not rape; (3) *He Didn't Mean To* reflects cognitions that seem to exonerate perpetrators from accountability; (4) *She Wanted It* explores the cognition that some women secretly want to be raped; (5) *She Lied* reflects cognitions related to victim fabrication; (6) *Trivial Event* reflects cognitions that assert that rape is not really a serious crime; and (7) *Deviant Event* explores distorted cognitions about scenarios that may lead to rape. According to Payne et al. (1999), each IRMAS subscale may assess a type of cognition that functions to neutralize sexual aggression in a distinct way. For example, the belief that rape is a trivial act allows a perpetrator to deny that injury was inflicted, but does not include a victim-blaming or responsibility-denying component. Thus, the distinct IRMAS subscales may provide a way for researchers to investigate whether distinct cognitive constructs have unique relationships with, and provide additional information to predict, future sexual aggression.

Although empirical results have demonstrated that the underlying constructs within measures are distinct, it remains unclear whether such constructs between measures are comparable. For example, Hermann et al. (2012) noted that the Excusing Rape factor found in their study may map onto Polaschek and Ward's (2002) *women are sex objects* implicit theory and that items in the Justifying Rape factor may reflect the rape cognition theme *women mean "yes" when they say "no"* in Scully and Marolla's (1984) study. However, the researchers did not compare these factors with factors found in other quantitative research. According to

Polaschek and Ward (2002), items from rape cognition scales seem to reflect five underlying cognitive constructs. Therefore, theoretically, factor analyses may result in considerable overlap between measures. For example, upon closer inspection, some RMAS items that comprised Briere et al.'s (1985) Disbelief to Rape Claims factor (e.g., "When women go around braless or wearing short skirts and tight tops, they are just asking for trouble." and "Many women have an unconscious wish to be raped, and may then unconsciously set up a situation in which they are likely to be attacked.") appear similar to some items from the IRMAS subscales She Asked For It (e.g., "A woman who 'teases' a man deserves anything that might happen."), She Wanted It (e.g., "Many women secretly desire to be raped.") and Deviant Event (e.g., "It is usually only women who dress suggestively that are raped."). In addition, some RAPE Scale items in the Excusing Rape factor from Hermann et al.'s (2012) study (e.g., "Many women have a secret desire to be forced into having sex.") also seem similar to the example items above. Further, these items seem to collectively reflect Polaschek and Ward's (2002) *women as sex objects* implicit theory. Therefore, it seems that similar factors can be found across factor analyses and these factors should theoretically map onto one of Polaschek and Ward's (2002) implicit theories.

In contrast, some items do not appear to resemble items from other scales. For example, some items from Payne et al.'s (1999) Trivial Event subscale (e.g., "If a woman isn't a virgin, then it shouldn't be a big deal if her date forces her to have sex." and "Being raped isn't as bad as being mugged and beaten.") do not appear to be similar to items from other scales. Furthermore, these items do not seem to reflect any of Polaschek and Ward's (2002) implicit theories, but may map onto Scully and Marolla's (1984) *guilty of a minor wrongdoing* theme. Thus, it is possible that some measures may be assessing additional constructs that other measures have

inadvertently omitted and that such constructs may reflect cognitions beyond those proposed by Polaschek and Ward (2002). It is important not only to examine the distinction within measures but also between measures, as this would provide some evidence of whether measures are interchangeable or if some measures do not include certain relevant constructs.

To summarize, qualitative and quantitative research are two common approaches used to better understand the underlying elements of rape cognition. Both approaches have illustrated that rape cognition may reflect distinct themes and measures may differ on which themes they assess. According to Polaschek and Ward (2002), rape cognition items seem to reflect five underlying themes. Therefore, it is possible that there may be considerable overlap between rape cognition measures. Although quantitative research has found that rape cognition measures are multidimensional, no studies to date have addressed the overlap between measures. Thus, further research is needed to examine whether there are distinct constructs within and between measures of rape cognition. This would provide some evidence of which constructs are more prevalent in available rape cognition measures.

### **Relationships Between Underlying Constructs of Rape Cognition and Sexual Aggression**

In addition to the possibility that rape cognition measures may be assessing similar (or different) underlying constructs, researchers have suggested that the distinct constructs of rape cognition may be differentially related to sexual aggression (e.g., Hermann et al., 2012; Maruna & Mann, 2006). In other words, some underlying cognitions may have a stronger relationship with, and provide additional information to predict, sexually aggressive behaviours. Generally, there are three ways to investigate the different relationships between cognitive constructs and sexually aggressive behaviours. First, studies can examine the magnitude of relationships using correlations. For example, Mouilso and Calhoun (2013) conducted a study to explore the pattern

of correlations among IRMAS subscales and perpetration status. They found that perpetration status (i.e., rape perpetrators, sexual assault perpetrators, and nonperpetrators), as measured by the Sexual Experiences Survey (SES; Koss, Gidycz, & Wisniewski, 1987), differed on all IRMAS subscales (partial  $\eta^2 = .05$ ). More specifically, rape perpetrators (i.e., perpetrating attempted or completed vaginal or anal intercourse, oral-genital contact, or penetration with an object by use of force, use of threat of force, or if the victim was unable to give consent due to the use of drugs or alcohol) scored higher than nonperpetrators on all IRMAS subscales, demonstrating that all constructs that comprise of the IRMAS are associated with self-reported sexually aggressive behaviours. However, it is unclear whether some constructs have a stronger association with sexually aggressive behaviours, as the researchers did not conduct effect size analyses.

Furthermore, Hermann et al. (2012) examined the relationship between factors on the RAPE Scale and estimated risk of sexual recidivism as measured by the Static-99 (Hanson & Thornton, 1999) and Stable-2000 (Hanson, Harris, Scott, & Helmus, 2007) in a sample of rapists. The Excusing Rape factor was not significantly related to the Static-99 ( $r = .08$ ), but was moderately related to the Stable-2000 ( $r = .31$ ). The Justifying Rape factor, on the other hand, had a small non-significant relationship with the Static-99 ( $r = .21$ ) and a large significant relationship with the Stable-2000 ( $r = .52$ ). Given that both factors showed at least some relationship with both risk measures, but one factor demonstrated stronger relationships, this seems to suggest that some constructs may have a stronger relationship with sexual recidivism risk than others. It is further possible, then, that some cognitions may be more important for understanding sexually aggressive behaviours than others.

A second way to investigate the different relationships between cognitive constructs and sexually aggressive behaviours is to examine whether factors are uniquely associated with sexually aggressive behaviours using partial correlations. For example, Nunes et al. (2015) found that the Evaluation of Rape Scale and the RAPE Scale were both independently associated with self-reported past sexually aggressive behaviours (*partial r* = .18 and .19, respectively) and self-reported future likelihood of sexually aggressive behaviours (*partial r* = .23 and .27, respectively), demonstrating that both constructs are important to understand sexual aggression. Third, studies can examine whether some factors provide additional information to explain sexually aggressive behaviours above and beyond other factors. For example, in addition to the finding that the Justifying Rape factor had a stronger relationship with sexual recidivism risk, Hermann et al. (2012) found that the same factor added 6.08% more explained variance above the Excusing Rape factor, demonstrating that some constructs may provide additional information when predicting future sexually aggressive behaviours. Findings from these studies suggest that some underlying constructs may be more important for understanding sexual aggression.

As noted above, some factors found across measures seem to be comparable and reflect the same underlying constructs. If this were true, then we would expect that the same factors would have similar relationships with outcome variables. For example, similar factors from both Briere et al.'s (1985) study (i.e., Disbelief of Rape Claims) and Payne et al.'s (1999) study (i.e., She Asked For It) were significantly related to outcome variables (i.e., sexual inhibitions and sexual aggression, respectively). However, the Excusing Rape factor in Hermann et al.'s (2012) study was not strongly related to the Static-99.

There are two possible explanations for this discrepancy among studies. First, it is possible that these factors actually do not reflect the same underlying construct as hypothesized above. For example, it is possible that the Excusing Rape factor more likely resembles Victim Responsible for Rape (Briere et al., 1984) factor, both of which were not related to some outcome variables. The second and possibly more probable explanation is that studies differed on their outcome measures. For example, the outcome measure in Mouilso and Calhoun's (2013) study was self-reported past sexually aggressive behaviours. On the other hand, although outcome variables in Briere et al.'s (1985) study were sexual variables, they did not measure sexual aggressive behaviours specifically. Further, Hermann et al. (2012) measured estimated risk of sexual recidivism as the outcome, rather than an indicator of behaviour (i.e., self-reported sexually aggressive behaviours). Thus, it is possible that factors across measures that appear to be assessing the same underlying construct would have similar relationships with outcome measures if examined with the same outcome of interest (e.g., past or future likelihood of sexually aggressive behaviours).

As evidenced above, some underlying constructs seem to have a stronger relationship with, and provide additional information to predict, sexually aggressive behaviours. If not all constructs are independently related to sexually aggressive behaviours, then it is possible that some measures may contain redundant information. Therefore, if some measures have inadvertently omitted key factors, then this would provide a sense of whether some measures may be superior to others when assessing cognitions that are most related to sexually aggressive behaviours or whether measures may be interchangeable and provide the same information when assessing such cognitions.

Taken together, not only has research demonstrated that there are distinct constructs being assessed within measures, some studies have also demonstrated that such constructs may have unique relationships with, and provide additional information to predict, sexually aggressive behaviours. Additionally, it is possible that some measures may be assessing more relevant constructs than other measures, which would indicate that such measures may be better to use when assessing cognitions that are most related to sexually aggressive behaviours.

### **Conclusion**

In conclusion, the concept of rape cognition has been widely but inconsistently used to encompass potentially distinct underlying constructs. Theoretical models on the causes of rape suggest that rape cognition is one factor—among others—that may lead to the development of sexual aggression. Empirical evidence, however, has not demonstrated a causal link between rape cognition and sexual aggression. One proposed explanation for this variability among studies is the lack of distinction between different types of rape cognition.

Relatedly, more recent theoretical models have posited that rape cognition can be classified by theme and some cognitions may have meaningfully different relationships with sexually aggressive behaviours. A review of the sexual aggression literature suggests that rape cognition encompasses distinct underlying constructs such that studies exploring the factor structures of existing measures have found that they tend to assess more than one underlying construct. However, no attempt has been made to connect factors across measures. Given that available self-report measures of rape cognition do not distinguish between distinct cognitive constructs, it is likely that measures differ in which constructs they assess. Moreover, studies have demonstrated that distinct constructs may have independent relationships with sexually aggressive behaviours, suggesting that some measures may contain constructs that are not as

important to understanding sexual aggression. Thus, it is important to determine whether distinct constructs are being assessed both within and between measures, and to examine the extent to which each construct is uniquely related to sexually aggressive behaviours.

Therefore, the primary purpose of the present study was to factor analyze three commonly used self-reported measures of rape cognition in one exploratory factor analysis (EFA), which will not only allow for an examination of distinctions within measures, but also between measures. The secondary purpose was to examine the extent to which factor(s) from the EFA are related self-reported sexually aggressive behaviours, as assessed by the SES (Koss et al., 2007). Given that the current study was primarily to explore the underlying processes and did not set out to test any hypotheses or to confirm the factorial structures of combined items from these scales, the current study used EFA instead of confirmatory factor analysis (CFA) as the statistical method. According to Tabachnick and Fidell (2012), CFA uses the dataset as an empirical covariance matrix from which the model produces an estimated population covariance matrix to examine whether it would be consistent with the sample or observed covariance matrix. In other words, CFA tests specific hypotheses about the factorial structure of observed variables. As highlighted above, there are large inconsistencies in the literature regarding the factor structure of rape cognition measures. As such, it would be unclear for which factor structure (e.g., 1-factor or 7-factor structures) a CFA in the current study should test. To my knowledge, a CFA would only be appropriate once the factor structure of these rape cognition measures are refined and clarified. Therefore, the appropriate approach for the current study was EFA because I am attempting to identify what the factor structure of these scales might be, rather than confirm a clear a priori hypothesis about what it should be.

## Method

### Participants

Participants were 347 men from the community recruited through Qualtrics from an online panel of participants (see Appendix A for recruitment notice). The online panel partners that Qualtrics is partnered with are responsible for recruiting participants from their online panels to participate in research (Qualtrics, 2014). The study was limited to adult men living in North America. The study was also limited to heterosexual participants because the measures used to assess sexual aggression were specifically designed to assess sexually aggressive behaviours perpetrated by men against women. Therefore, including only heterosexual participants would minimize the possibility that alternative explanations, such as a lack of experience or interest in sex with women, could account for any results in the current study. Participants received \$2.00 for participating in this study. Participants were excluded from the EFA if they were missing data on any of the rape cognition scale items ( $n = 81$ ), under the age of 18 ( $n = 12$ ), non-heterosexual ( $n = 65$ ), female or missing data on this item ( $n = 14$ ), failed at least one of the quality control questions ( $n = 76$ ), or reported they could not understand written English or were missing data on this item ( $n = 31$ ). Of note, the inclusion criteria are not mutually exclusive. One hundred and ninety one participants were included in the EFA after excluding participants who did not meet the above requirements. Among those who were included in the EFA, the age group with the highest frequency was between 40 and 49 years old (22.5%,  $n = 43$ ), the majority of participants identified as White (78.5%,  $n = 150$ ), approximately half were married (51.8%,  $n = 99$ ), and almost a quarter were attending college or university (24.6%,  $n = 47$ ) (see Table 1).

Of the 191 participants included in the EFA, 29 were further excluded in order to run correlation analyses because they were missing data on the SES-TV-R or P-SES-TV-R

measures. Therefore, the final sample consisted of 162 participants. The age group with the highest frequency was between 40 and 49 years old (21.0%,  $n = 34$ ), the majority of participants identified as White (78.4%,  $n = 127$ ), almost half were married (49.4%,  $n = 80$ ), and less than a quarter were attending college or university (21.0%,  $n = 34$ ) (see Table 1).

Table 1  
*Demographic Characteristics of Community Men Included in The EFA and Correlation Analyses*

<b>Demographic Characteristics</b>	<b>EFA (<math>n = 191</math>)</b>		<b>Correlation (<math>n = 162</math>)</b>	
	<b>%</b>	<b><math>n</math></b>	<b>%</b>	<b><math>n</math></b>
<b>Age</b>				
18-19	2.6	5	1.9	3
20-24	11.0	21	11.1	18
25-29	11.0	21	11.7	19
30-34	22.5	43	20.4	33
35-39	14.7	28	15.4	25
40-49	19.9	38	21.0	34
50-59	12.0	23	12.4	20
60 and over	6.3	12	6.2	10
<b>Race<sup>a</sup></b>				
White	78.5	150	78.4	127
Black	8.9	17	8.6	14
Asian	3.7	7	3.1	5
Hispanic/Latino	7.3	14	8.0	13
Arab	0.5	1	0.6	1
Other	0.5	1	0.6	1
<b>Attending College or University?</b>	24.6	47	21.0	34
<b>Relationship Status</b>				
Married	51.8	99	49.4	80
Single	33.0	63	34.0	55
Living With Romantic Partner	8.4	16	9.3	15
Divorced/Separated	5.8	11	6.8	11
Other	1.1	2	0.6	1

Note. <sup>a</sup>  $n = 1$  missing data.

Of the total of 162 participants, 22 (13.6%) reported they had perpetrated some form of sexually aggressive behaviour since they were 16 years old as measured by the SES-TV-R past sexual aggression measure. Additionally, 26 (16.1%) reported some likelihood of future sexually aggressive behaviour as measured by the P-SES-TV-R.

## Measures

**Demographic questionnaire.** Participants were asked a number of questions pertaining to their demographic information, such as age, gender, race, education, currently relationship status, as well as other information relevant to participation in the study, such as sexual orientation and ability to understand written English (Appendix B).

**Rape Myth Acceptance Scale (RMAS).** The RMAS (Burt, 1980) is a widely used measure in the sexual aggression literature (e.g., Allen, Emmers, Gebhardt, & Giery, 1995; Briere et al., 1985; Emmers-Sommer, Pauley, Hanzal, & Triplett, 2006). It is a 19-item self-report measure designed to assess an individual's levels rape myth acceptance regarding both perpetrators and victims of sexual assault (Burt, 1980). Eleven out of 19 items are measured on a 7-point Likert scale from *strongly agree* to *strongly disagree*, two items are measured on a 5-point Likert scale from *almost all* to *almost none*, and five items are measured on a 5-point Likert scale from *always* to *never*. The scale has been shown to be reliable (Cronbach's alpha = .875, Burt, 1980; .849, Krahe, 1988; .874, Margolin, Miller, & Moran, 1989).

Although research has revealed that the scale is related to sexually aggressive behaviours (e.g., Muehlenhard & Linton, 1987; Spence, Losoff, & Robbins, 1991), Bumby (1996) noted that nearly one-third of the items on the RMAS do not specifically assess rape myths or cognitive distortions. Rather, they seem to be related to whether rape allegations are believable when the accusers differ in age, race, gender, and familiarity. For example, consider the following statement: "A person comes to you and claims they were raped. How likely would you be to believe their statement if the person were a black woman?" Interestingly, the RAPE scale did not correlate with Burt's (1980) RMAS ( $r = .12$ , n.s.) in Bumby's (1996) study, perhaps demonstrating that not all items in the RMAS are measuring rape cognition. Relatedly, other

researchers have used modified or shortened versions of the scale to reflect only rape myth acceptance (e.g., Emmers-Sommer et al., 2006; Fonow, Richardson, & Wemmerus, 1992; Jenkins & Dambrot, 1987; Krahe, 1988; Mayerson & Taylor, 1987). Therefore, the current study included only the first 11 items from Burt's (1980) original scale (Appendix C), which is a version used by most researchers. Two changes were made to this scale prior to launching the survey. First, items from the RMAS in the original scale are typically rated from *strongly agree* to *strongly disagree*. In the current study, this was reverse scored (i.e., from *strongly disagree* to *strongly agree*) in order to keep the response options consistent across items from all measures included in this study. Second, items in the original scale were typically rated on a 7-point Likert scale. In the current study, items were rated on a 4-point Likert scale. Thus, participants rated each RMAS item on a 4-point Likert scale, from *strongly disagree* to *strongly agree*. This was to control for the possibility that items with the same response scale would cluster together. A total score was computed by summing responses from each of the 11 items. Total scores ranged from 11 to 77, with higher scores indicating greater acceptance of rape myths. Of note, unlike Bumby's (1996) study, including only the first 11 items of the RMAS resulted in a correlation of .92 with the RAPE Scale, suggesting that the last eight items may not reflect rape cognition.

**The RAPE Scale.** The RAPE Scale (Bumby, 1996) is a 36-item self-report measure designed to assess cognitive distortions regarding sexual assault of women (Appendix D). For each statement, participants are asked to rate how much they agree with the statement on a 4-point Likert scale from *strongly disagree* to *strongly agree*. This rating scale was maintained in the current study. The responses are then summed to generate a total score, with higher scores indicating a higher acceptance of rape cognition (Bumby, 1996).

The RAPE Scale scores have demonstrated excellent reliability (Cronbach's alpha = .96, Bumby, 1996; .96 in Hermann et al., 2012). In addition, Bumby (1996) found that the test-retest correlation was excellent across a 2-week interval ( $r = .86$ ). Bumby (1996) assessed validity by correlating the RAPE Scale with the Cognitive Distortions/Immaturity ( $r = .33, p < .05$ ) and Justification ( $r = .34, p < .05$ ) scales of the Multiphasic Sex Inventory (Nichols & Molinder, 1984). These significant correlations—albeit low to moderate—provide evidence of the scale's convergent validity. Further, the RAPE Scale was not significantly related to measures of socially desirable responding in Bumby's (1996) study ( $r = -.02, p > .05$ ) and Hermann et al.'s (2012) study ( $r = .04, p > .05$ ), demonstrating that socially desirable responding is not an issue with this scale.

**Illinois Rape Myth Acceptance Scale (IRMAS).** The IRMAS (Payne et al., 1999) is a 45-item self-report measure designed to assess endorsement of rape cognition (Appendix E). The statements can be divided into seven subscales (i.e., *She Asked For It, It Wasn't Really Rape, He Didn't Mean To, She Wanted It, She Lied, Trivial Event, and Deviant Event*). Responses are scored on a 7-point Likert scale, from *strongly disagree* to *strongly agree*. Scores are then summed to generate a total score, ranging from 45 to 315, where higher scores indicate greater endorsement of rape cognition. In addition, responses to items in each subscale are summed to generate subscale scores, where higher scores indicate greater endorsement of a specific type of rape cognition. The IRMAS total and subscale scores have demonstrated acceptable to excellent reliability (Cronbach's alpha = .91 for the total score and .68 to .85 for the subscales; Mouilso & Calhoun, 2013). Given that participants rated items from the other two measures in the current study on a 4-point Likert scale, participants also rated items from the IRMAS (Appendix E) on a 4-point Likert scale so that the rating scales were the same across

measures. In addition, Payne et al. (1999) created the short form of the IRMAS (i.e., IRMA-SF) in order to shorten the length of the scale as time constraints may limit the use of the full scale. They noted that the short form differed from the full scale in that it was designed to assess only general rape cognition and not any specific types of rape cognition components (Appendix E).

**Sexual Experiences Survey-Tactics Version Revised (SES-TV-R).** Sexually aggressive behaviour will be measured using the revised version of the ‘Tactics First’ Sexual Experience Survey (SES-TF; Abbey, Parkhill, & Koss, 2005). The original SES was developed by Koss and colleagues (Koss & Gidycz, 1985; Koss, Gidycz, & Wisniewski, 1987; Koss & Oros, 1982) and researchers have revised the scale numerous times since then (see Koss et al., 2007). The SES measures are widely used in the sexual aggression literature (e.g., Abbey & McAuslan, 2004; Abbey et al., 2012; Cue Davis, Gilmore, Stappenbeck, Balsan, George, & Norris, 2014; DeGue, DiLillo & Scalora, 2010; Gidycz, Warkentin, & Orchowski, 2007; Thompson et al., 2010). In particular, the SES-TF asks participants to self-report the frequency (never to 3 times or more) of their participation in a variety of sexual behaviours (e.g., kissing, fondling, oral sex, anal sex, object insertion, and vaginal sex) by using any of the following sexually aggressive tactics since the age of 14: (a) arguments and pressure, (b) lies or false promises, (c) guilt or displeasure, (d) giving a woman drugs or alcohol, (e) taking advantage of a woman when she is incapacitated due to drugs or alcohol, and/or (f) physical force. Each item is typically rated on a 4- or 6-point Likert scale from *never* (0) to *three/five* times or more (3 or 5).

Recently, Hermann, Nunes, and Maimone (2015) revised the SES-TF into the SES-TFR, which has since been further modified into the Tactics Version Revised (SES-TV-R; White, 2015). The SES-TV-R was used in the current study (Appendix F). There were five important revisions made in the SES-TFR (Hermann et al., 2015) that were also adopted by the SES-TV-R

(White, 2015). First, they included a wider response scale, ranging from 0 (*never*) to 9 (*nine times or more*). A wider response scale would minimize the concern that a narrow response scale may lead to underreporting of sexually aggressive behaviours. For instance, participants who have engaged in sexually aggressive behaviours three or more times may feel uncomfortable reporting this on a scale where three is the highest response option. On the other hand, they may feel more comfortable if there is a wider range of response options, thereby making their response appear less extreme. Second, they asked participants to recall behaviour since the age of 16 rather than age 14, given that the legal age of consent for sexual activity in Canada is 16. Third, they included a clear definition of “woman.” Specifically, the definition that participants read was “by ‘woman’ we mean any female close to your age or older at the time of the sexual experience.” Fourth, the researchers modified the SES-TF such that the sexual acts ‘anal sex’ and ‘inserting an object into her’ are treated as separate behaviours. Last, they used the weighted scoring method developed Cue Davis et al. (2014). In addition to these revisions, White (2015) included additional tactics (see Appendix F).

The SES-TF (Abbey et al., 2005) has demonstrated excellent internal consistency in samples of sex offenders and community men (e.g.,  $\alpha = .92$  and  $.91$ , respectively; Widman, Olson, & Bolen, 2013). Similarly, the SES-TV-R demonstrated excellent internal consistency in a student sample (e.g.,  $\alpha = .91$ ; White, 2015). In the current study, the SES-TV-R demonstrated excellent internal consistency in a community sample (e.g.,  $\alpha = .96$ ). Moreover, self-reported measures of delinquent and criminal behaviour are considered to be reasonably accurate, valid, and capture the majority of all offences (see Piquero et al. [2014] and Thornberry & Krohn [2000] for overview). Self-reported measures of sexually aggressive behaviours have also been

shown to align with independent indicators of these behaviours, such as official criminal records (Weinrott & Saylor, 1991; Pham, Nunes, & Maimone, 2015).

**Proclivity: Sexual Experience Survey-Tactics Version Revised.** The SES-TV-R has also been adapted to assess participant's proclivity (P-SES-TV-R) of sexual aggression (Hermann et al., 2015) and was used in the current study (Appendix F). For each SES-TV-R item, participants were asked how likely they would be to engage in each sexually aggressive behaviour, rather than the frequency of sexually aggressive behaviour. Participants were asked to self-report their proclivity of engaging in a number of sexual behaviours (e.g., sexual touching, oral sex, anal sex, vaginal intercourse, etc.) using any of the following sexually aggressive tactics: (a) arguments and pressure, (b) lies or false promises, (c) guilt or displeasure, (d) giving a woman drugs or alcohol, (e) taking advantage of a woman when she is incapacitated due to drugs or alcohol, and/or (f) physical force. Each item was rated on a 7-point Likert scale from *very unlikely* to *very likely*. A total score was computed by taking the sum of all of the items. The P-SES-TV-R has demonstrated excellent internal consistency in student and community samples (e.g.,  $\alpha = .94$  and  $.96$ , respectively; Hermann, 2015).

**Quality control questions.** Participants were asked to complete control questions to ensure that they were paying attention throughout the survey. The questions were randomly distributed throughout the survey and were used to screen out participants who were not attending to or understanding the survey items (see Participants section). For example, participants were asked, "Please respond to this question by selecting Strongly disagree" (Appendix I). Those who failed to respond correctly to all of the quality control questions were excluded from further analyses.

## **Procedure**

Prior to launching the survey, ethics approval was obtained from Carleton University's Ethics Committee. Following this approval, community men were recruited through Qualtrics from an online panel. Participants were emailed a link to participate. Prior to participation, all participants were presented with a consent form outlining the possible risks and benefits of taking part in the study (see Appendix G). After agreeing to the consent form, interested participants were given instructions outlining how to proceed through the survey. The instructions also reminded participants that they were free to skip any questions that may make them uncomfortable and that they were free to stop the survey at any time without risk of penalty (i.e., not getting paid the \$2.00). Participants were presented with a "Withdraw" button at the end of every survey page, should participants wish to exit the survey early. If clicked, participants were redirected to the debriefing form (Appendix H) before exiting the survey. After they were presented with instructions, participants were asked to complete the demographics questionnaire (Appendix B). Following this, participants were asked to complete the RMAS, RAPE Scale, IRMAS, SES-TV-R, and P-SES-TV-R in a random order. Items within each rape cognition scale were also presented in a random order. Four quality control questions (Appendix I; one for each rape cognition scale and the SES measure) were randomly distributed throughout the survey to identify participants who were not paying attention to the assigned tasks and were simply clicking through the survey without carefully reading the items. Those who did not respond correctly to at least one of the quality control questions were subsequently excluded from analyses. After participants completed the measures (or if they withdrew from the survey), they were presented with the debriefing form (Appendix H).

### Statistical Analyses

An EFA was used to examine the factor structure of combined items from the RMAS, RAPE Scale, and IRMAS. The goal of EFA is to reveal any latent variables (or underlying processes; i.e., factors) that cause the measured variables (or items) to covary. In other words, the EFA would uncover whether these self-report rape cognition scales are assessing more than one distinct cognitive construct.

All items from the RMAS, RAPE Scale, and IRMAS were included in the EFA. The EFA began by analyzing a correlation matrix of the measured items to reveal any underlying processes in the scales (Floyd & Widaman, 1995). Factor analysis research in the social sciences often analyzes Pearson's product-moment correlation matrices. However, Pearson's correlations produce biased estimates when measured items are ordinal and particularly when data are not normally distributed (Brown, 2006; Holgado-Tello, Chacon-Moscoco, Barbero-Garcia, & Vila-Abad, 2010; O'Connor, 2009). In contrast, a polychoric correlation is used when the variables are continuous and linearly related but are divided into a series of categories (i.e., Likert-type scale data; Flora & Curran, 2004; Holgado-Tello et al., 2010). Therefore, the current study factor analyzed polychoric correlation matrices among all items from the RMAS, RAPE Scale, and IRMAS.

**Factor extraction.** All EFA-related analyses were conducted using MPlus Version 7.4 (Muthen & Muthen, 2015). Factors were extracted using the weighted least square (WLSMV) estimator method because it is recommended for EFA of ordinal data (e.g., Muthen & Muthen, 2015). The WLSMV estimator is relatively robust against violations of normality (e.g., Flora & Curran, 2004) and performs well regardless of ceiling and floor effects in ordinal data with sample sizes as small as 200 (Brown, 2006).

**Factor retention.** Once factors were extracted, the number of factors to be retained was determined. Given that using multiple retention methods is preferable (Henson & Roberts, 2006), factor retention in the current study was based on four factor retention methods: (a) scree plot; (b) Kaiser's criterion, which is to keep the number of factors with eigenvalues greater than 1.00; (c) parallel analysis, which compares eigenvalues from the original dataset to those from a number of randomly generated datasets; and (d) Velicer's minimum average partial (MAP) test, which bases factor retention on the amount of systematic variance, relative to unsystematic variance, present in the correlation matrix after each factor has been extracted.

**Factor rotation.** After selecting which factors to retain, the next step was to rotate factors to increase interpretability. Factor rotation is a technique used to discriminate between factors by computing the degree to which variables load onto these factors (Field, 2013; Tabachnick & Fidell, 2012). Two rotation techniques are available to rotate factors: orthogonal and oblique. Orthogonal rotation methods do not allow factors to correlate, whereas oblique methods do (Costello & Osborne, 2005; Fabrigar, Wegener, MacCallum, & Strahan, 1999; Russell, 2002). Given that most psychological factors are related to some extent (Schmitt, 2011), oblique rotation methods were used in the current study, because if the factors are truly correlated, then not allowing them to correlate would produce unrealistic factor structures (Schmitt, 2011).

**Factor structure fit.** The overall factor structure fit was assessed using fit indices. First, the root mean square error of approximation (RMSEA) assesses the lack of fit in a factor structure relative to a perfect structure (Tabachnick & Fidell, 2007). Second, the comparative fit index (CFI) assesses the factor structure fit relative to a baseline model in which there are no relationships between items (Brown, 2006). Third, the standardized root mean square residual

(SRMR) is the average difference between the original correlations in the input matrix and correlations predicted by the factor structure (Brown, 2006). General rules regarding cutoff values for the RMSEA, CFI, and SRMR are no greater than .06 (Hu & Bentler, 1999), .95 or greater (Brown, 2006), and no greater than .08 (Hu & Bentler, 1999; Schmitt, 2011), respectively. However, there is much debate about the validity of these cut-off values (e.g., Schmitt, 2011) and, therefore, they were only used as guidelines.

**Standardized factor loadings.** Items have conventionally been classified into their respective factors using the magnitude of factor loadings. For example, items with factor loadings of .30 to .40 or greater are said to meaningfully load onto a particular factor (Cudeck & O'Dell, 1994; Schmitt & Sass, 2011). In addition to this rule of thumb, standardized factor loadings can be used to assess whether an item significantly loads onto a particular factor (Cudeck & O'Dell, 1994; Schmitt, 2011; Schmitt & Sass, 2011). For example, a significant factor loading is determined by investigating whether the standardized factor loading significantly differs from zero. To determine the significance and protect against Type 1 error, a correction procedure for correlated factors is used to compute the appropriate  $\alpha$  level (see Cudeck & O'Dell, 1994; Schmitt, 2011). The z-score associated with the determined  $\alpha$  level is then used as the critical point for determining significance.

## Results

Descriptive statistics and internal consistency for each measure are presented in Table 2. All measures of rape cognition and sexually aggressive behaviour (past and future likelihood) had excellent internal consistency, ranging from .87 to .99.

Table 2  
*Internal Consistency and Descriptive Statistics for the Total Score, Rape Cognition Scales and Indicators of Sexually Aggressive Behaviour*

Measures	$\alpha$	$M (SD)$	Range
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Total Score (86 – 344)	.99	152.45 (42.88)	89 to 334
RMAS (1 – 44)	.87	20.06 (5.17)	13 to 43
RAPE Scale (1 – 144)	.96	62.62 (17.89)	35 to 135
IRMAS (1 – 160)	.97	71.41 (20.95)	40 to 156
SES-TV-R (0 – 189)	.96	2.07 (11.41)	0 to 90
P-SES-TV-R (21 – 126)	.96	22.91 (7.51)	21 to 75

*Note.* Cronbach's Alpha for the Illinois Rape Myth Acceptance Scale (IRMAS) was computed with filler items (items 6, 11, 21, 32, and 40) removed. Total Score is the sum of all items included in the factor. RMAS = *Rape Myth Acceptance Scale*; SES-TV-R = *Sexual Experiences Survey – Tactics Version – Revised*; P-SES-TV-R = *Proclivity – Sexual Experiences Survey – Tactics Version – Revised*. Possible range for each measure is indicated in parentheses.

### Exploratory Factor Analysis

**Data screening.** Given that MPlus version 7.4 (Muthen & Muthen, 2015) cannot run if any cell is left blank (i.e., missing values) in the Statistical Package for the Social Sciences (SPSS) version 23, all empty cells were recoded to 9999 prior to exporting data from SPSS to MPlus. Of note, EFA results were comparable when maximum likelihood was used to handle missing data in MPlus. It was therefore concluded that missing data did not affect the current results; thus, listwise deletion was used in the EFA in order to keep the original data. For a detailed description of missing data analyses, see Pearson's Correlation section below.

An exploratory factor analysis was conducted on 86 items from the RMAS (Burt, 1980), RAPE Scale (Bumby, 1996), and IRMAS (Payne et al., 1999). Many of the items were not normally distributed; however, no items were excluded or transformed given that polychoric correlations are robust against violations of normality (Flora & Curran, 2004) and the WLSMV estimator performs well regardless of ceiling and floor effects with small sample sizes (Brown, 2006). Most correlations ranged from .30 to .80, suggesting that the matrix was factorable.

Prior to examining the factor structure of the EFA, multicollinearity was examined using the polychoric correlation matrix produced by MPlus version 7.4. Guidelines vary regarding the size of correlation that would indicate multicollinearity. Generally, correlation coefficients .8 or higher cause concern regarding multicollinearity (Field, 2013; Tabachnick & Fidell, 2012). In

the current study, only two items (Item 12 “Victims of rape are usually a little bit to blame for what happens”) and (Item 21 “Women who get raped will eventually forget about it and get on with their lives”) of the RAPE Scale had a polychoric correlation above .85 (i.e.,  $r = 1.00$ ). Item 12 was subsequently removed because Item 21 seems to be an evaluation of rape and was, in my opinion, less represented overall, as opposed to Item 12, which seems to be a general belief about victims. Of note, results remained the same when Item 21 was removed instead.

**Factor structure.** As mentioned previously, the scree plot (Figure 1), Kaiser’s criterion, parallel analysis, and the MAP test were used to determine the appropriate number of factors to retain. Unfortunately, all tests suggested a different number of factors to retain. For example, parallel analysis suggested retaining two factors<sup>1</sup>, the MAP test suggested retaining two to three factors, and the scree plot and Kaiser’s criterion suggested retaining 8 to 14 factors. Both Kaiser’s criterion and the scree plot are known for overfactoring; thus, the results of the parallel analysis and MAP test were given the most weight because these methods are the least subjective. It should be noted, however, that parallel analysis and MAP test procedures used a Pearson’s  $r$  correlation matrix instead of a polychoric correlation matrix, which, as mentioned earlier, is not ideal for ordinal data. Indeed, studies have found that the use of the MAP test is less accurate when based on Pearson’s  $r$  correlations rather than polychoric correlations for ordinal data (Garrido, Abad, & Ponsoda, 2011). Specifically, for data conditions similar to the ones in the current study, the MAP test tended to overestimate the number of factors to retain<sup>2</sup>.

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<sup>1</sup> This was true for both the computer-generated randomly distributed data and the randomly sorted original data.

<sup>2</sup> Although Garrido et al. (2011) generally found that the MAP test based on Pearson’s  $r$  correlations tended to underestimate the number of factor to retain on average, it should be noted that the following combination of conditions lead to overestimation: high factor loadings (.70),

On the other hand, for parallel analysis, Cho, Li, and Bandalos (2009) found similar results using both Pearson's  $r$  and polychoric correlation matrices. Therefore, less statistical weight was placed on results of the MAP test compared to parallel analysis. Given that parallel analysis suggested retaining two factors, which overlapped with the suggested two to three factors from the MAP test, the 2-factor model was chosen for closer examination.

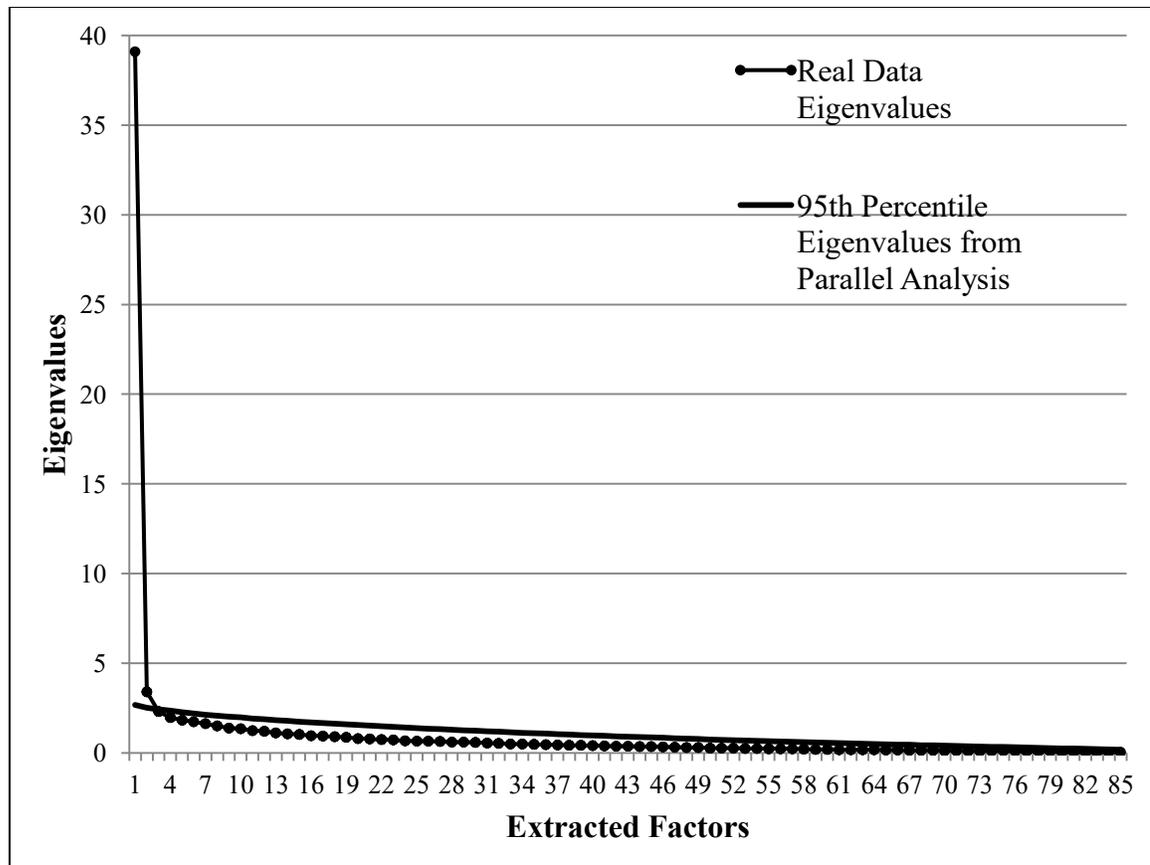


Figure 1. Scree Plot With Parallel Analysis Using the 95<sup>th</sup> Percentile Eigenvalues

Model fit statistics were used to assess the 2-factor structure. The model demonstrated a good fit with a RMSEA of .033 (90% CI [.030, .037]), CFI of .969, and SRMR of .056.

However, upon closer examination, all but five items significantly loaded onto Factor 1 (see

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large number of variables per factor, and greatest level of skewness for categorical variables ( $\pm 2$ ; the level typically observed in real data sets).

Table 3) and most items that significantly loaded onto Factor 2 also significantly loaded onto Factor 1 (i.e., cross-loading), suggesting that a 1-factor solution may be more appropriate for the current data. The model fit statistics for a 1-factor model also demonstrated a good fit with a RMSEA of .038 (90% CI [.034, .041]), CFI of .960, and SRMR of .065. Thus, one factor from the EFA was retained, which accounted for 45.47% of the variance (see Table 4 also for the prerotation eigenvalues). However, it is important to note that all other models (up to 14) were also examined (see Table 5 for fit statistics). As can be seen in Table 5, there was little improvement from model to model with respect to fit statistics, suggesting that model fit did not significantly differ between models. Ultimately, a 1-factor model fit best.

Table 3

*Rotated Factor Loadings and Standardized Rotated Loadings For Items From All Scales*

RMAS Item	Rotated Factor Loading (Standardized Rotated Factor Loading)	
	Factor 1	Factor 2
1. A woman who goes to the home or apartment of a man on their first date implies that she is willing to have sex.	<b>.78 (20.96)</b>	.01 (0.18)
2. Any female can get raped.	<b>-.64 (-8.14)</b>	<b>.32 (4.71)</b>
3. One reason that women falsely report a rape is that they frequently have a need to call attention to themselves.	<b>.52 (5.77)</b>	.28 (3.60)
4. Any healthy woman can successfully resist a rapist if she really wants to.	<b>.79 (21.17)</b>	-.05 (-0.83)
5. When women go around braless or wearing short shirts and tight tops, they are just asking for trouble.	<b>.70 (9.63)</b>	.21 (3.45)
6. In the majority of rapes, the victim is promiscuous or has a bad reputation.	<b>.82 (25.04)</b>	.03 (0.51)
7. If a girl engages in necking or petting and she lets things get out of hand, it is her own fault if her partner forces sex on her.	<b>.85 (30.61)</b>	-.01 (-0.28)
8. Women who get raped while hitchhiking get what they deserve.	<b>.87 (26.44)</b>	-.12 (-2.21)

9. A woman who is stuck-up and thinks she is too good to talk to guys on the street deserves to be taught a lesson.	<b>.92 (30.60)</b>	-.18 (-3.04)
10. Many women have an unconscious wish to be raped, and may then unconsciously set up a situation in which they are likely to be attacked.	<b>.78 (12.82)</b>	.16 (2.39)
11. If a woman gets drunk at a party and has intercourse with a man she's just met there, she should be considered "fair game" to other males at the party who want to have sex with her too, whether she wants it or not.	<b>.90 (20.60)</b>	-.22 (-4.26)

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RAPE Item

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1. Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress.	<b>.60 (7.78)</b>	.23 (3.32)
2. Women who get raped probably deserved it.	<b>.95 (18.55)</b>	<b>-.32 (-5.37)</b>
3. Women generally want sex no matter how they can get it.	<b>.74 (13.42)</b>	.12 (1.85)
4. Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex.	<b>.83 (25.56)</b>	-.11 (-1.78)
5. If a woman does not resist strongly to sexual advances, she is probably willing to have sex.	<b>.68 (11.25)</b>	.16 (2.56)
6. Women often falsely accuse men of rape.	<b>.44 (4.12)</b>	<b>.41 (5.86)</b>
7. A lot of women who get raped had "bad reputations" in the first place.	<b>.77 (22.00)</b>	-.02 (-0.30)
8. If women did not sleep around so much, they would be less likely to get raped.	<b>.86 (27.74)</b>	-.10 (-1.92)
9. If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually.	<b>.77 (19.40)</b>	.04 (0.74)
10. When women wear tight clothes, short skirts, and no bra or underwear, they are asking for sex.	<b>.79 (20.11)</b>	.03 (0.53)
11. A lot of women claim they were raped just because they want attention.	<b>.63 (6.87)</b>	<b>.29 (3.84)</b>
13. If a man has sex with a woman before, then he should be able to have sex with her any time he wants.	<b>.87 (23.32)</b>	<b>-.19 (-3.76)</b>
14. Just fantasizing about forcing someone to have sex isn't all that bad since no one is really being hurt.	<b>.40 (5.12)</b>	.10 (1.19)
15. Women who go to bars a lot are mainly looking to	<b>.66 (11.76)</b>	.12 (2.12)

have sex.		
16. A lot of times when women say “no” they are just playing hard to get, and really mean “yes.”	<b>.69 (10.21)</b>	.19 (2.89)
17. Part of a wife’s duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood.	<b>.77 (21.33)</b>	-.03 (-0.46)
18. Often a woman reports rape long after the fact because she gets mad at the man she had sex with and is just trying to get back at him.	<b>.54 (4.78)</b>	<b>.41 (5.31)</b>
19. As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad.	<b>.89 (30.80)</b>	-.08 (-1.20)
20. When a woman gets raped more than once, she is probably doing something to cause it.	<b>.77 (15.34)</b>	.14 (2.69)
21. Women who get raped will eventually forget about it and get on with their lives.	<b>.70 (12.53)</b>	.12 (2.11)
22. On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually.	<b>.86 (31.99)</b>	.10 (-1.78)
23. I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.	<b>.79 (16.68)</b>	.09 (1.52)
24. When women act like they are too good for men, most men probably think about raping the women to put them in their place.	<b>.70 (12.32)</b>	.11 (1.73)
25. I believe that society and the courts are too tough on rapists.	<b>.77 (19.27)</b>	-.11 (-1.95)
26. Most women are sluts and get what they deserve.	<b>.88 (27.09)</b>	-.14 (-2.84)
27. Before the police investigate a woman’s claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is.	<b>.67 (8.97)</b>	<b>.24 (3.83)</b>
28. Generally, rape is not planned - a lot of times it just happens.	.22 (1.92)	<b>.39 (4.65)</b>
29. If a person tells himself that he will never rape again, then he probably won’t.	<b>.63 (11.45)</b>	.03 (0.38)
30. A lot of men who rape do so because they are deprived of sex.	.43 (3.43)	.49 (6.58)
31. The reason a lot of women say “no” to sex is because they don’t want to seem loose.	<b>.59 (7.18)</b>	.23 (3.13)

32. If a woman goes to the home of a man on the first date, she probably wants to have sex with him.	<b>.66 (10.26)</b>	.18 (2.98)
33. Many women have a secret desire to be forced into having sex.	<b>.70 (7.84)</b>	.29 (3.48)
34. Most of the men who rape have stronger sexual urges than other men.	<b>.58 (7.38)</b>	<b>.26 (4.13)</b>
35. I believe that any woman can prevent herself from being raped if she really wants to.	<b>.71 (17.06)</b>	.01 (0.18)
36. Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child.	<b>.71 (15.39)</b>	.02 (0.39)

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 IRMAS Item
 

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1. If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.	<b>.71 (14.30)</b>	.10 (1.80)
2. Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."	<b>.71 (13.17)</b>	.15 (2.73)
3. When men rape, it is because of their strong desire for sex.	.46 (3.30)	<b>.53 (6.94)</b>
4. If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.	<b>.82 (26.95)</b>	-.02 (-0.49)
5. Women who are caught having an illicit affair sometimes claim that it was rape.	<b>.46 (4.53)</b>	<b>.34 (4.80)</b>
7. Many so-called rape victims are actually women who had sex and "changed their minds" afterwards.	<b>.62 (6.88)</b>	<b>.31 (4.53)</b>
8. Many women secretly desire to be raped.	<b>.73 (13.30)</b>	.10 (1.40)
9. Rape mainly occurs on the "bad" side of town.	<b>.79 (20.53)</b>	.02 (0.26)
10. Usually, it is only women who do things like hang out in bars and sleep around that are raped.	<b>.82 (22.46)</b>	.01 (0.11)
12. If a woman doesn't physically fight back, you can't really say that it was rape.	<b>.84 (27.11)</b>	-.02 (-0.39)
13. Men from nice middle-class homes almost never rape.	<b>.77 (20.62)</b>	-.08 (-1.46)
14. Rape isn't as big a problem as some feminists would like people to think.	<b>.75 (19.15)</b>	-.09 (-1.43)
15. When women go around wearing low-cut tops or short skirts, they're asking for trouble.	<b>.79 (14.93)</b>	.16 (3.04)
16. Rape accusations are often used as a way of getting	.44 (3.47)	<b>.47 (6.06)</b>

back at men.		
17. A rape probably didn't happen if the woman has no bruises or marks.	<b>.80 (21.46)</b>	.03 (0.51)
18. Many women find being forced to have sex very arousing.	<b>.61 (6.80)</b>	<b>.30 (4.05)</b>
19. If a woman goes home with a man she doesn't know, it is her own fault if she is raped.	<b>.83 (26.74)</b>	-.02 (-0.44)
20. Rapists are usually sexually frustrated individuals.	<b>.45 (3.88)</b>	<b>.41 (6.06)</b>
22. It is usually only women who dress suggestively that are raped.	<b>.74 (14.61)</b>	.11 (1.76)
23. Some women prefer to have sex forced on them so they don't have to feel guilty about it.	<b>.76 (11.34)</b>	.18 (2.66)
24. If the rapist doesn't have a weapon, you really can't call it rape.	<b>.93 (20.25)</b>	<b>-.26 (-4.75)</b>
25. When a woman is a sexual tease, eventually she is going to get into trouble.	<b>.54 (7.07)</b>	.20 (2.78)
26. Being raped isn't as bad as being mugged and beaten.	<b>.86 (19.32)</b>	<b>-.19 (-3.87)</b>
27. Rape is unlikely to happen in the woman's own familiar neighborhood.	<b>.79 (21.45)</b>	-.01 (0.14)
28. In reality, women are almost never raped by their boyfriends.	<b>.73 (16.43)</b>	-.12 (-2.55)
29. Women tend to exaggerate how much rape affects them.	<b>.86 (32.21)</b>	-.06 (-1.30)
30. When a man is very sexually aroused, he may not even realize that the woman is resisting.	<b>.64 (9.84)</b>	.17 (2.89)
31. A lot of women lead a man on and then they cry rape.	<b>.60 (6.17)</b>	<b>.33 (4.62)</b>
33. A lot of times, women who claim they were raped just have emotional problems.	<b>.63 (6.89)</b>	<b>.31 (4.38)</b>
34. If a woman doesn't physically resist sex - even when protesting verbally - it really can't be considered rape.	<b>.79 (22.26)</b>	-.05 (-0.93)
35. Rape almost never happens in the woman's own home.	<b>.79 (23.45)</b>	-.13 (-2.56)
36. A woman who "teases" men deserves anything that might happen.	<b>.86 (31.64)</b>	-.02 (-0.34)
37. When women are raped, it's often because the way they said "no" was ambiguous.	<b>.75 (13.27)</b>	.14 (2.26)
38. If a woman isn't a virgin, then it shouldn't be a big	<b>.86 (21.06)</b>	-.18 (-3.24)

deal if her date forces her to have sex.		
39. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.	<b>.55 (5.89)</b>	<b>.32 (5.07)</b>
41. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.	<b>.76 (14.18)</b>	.15 (2.78)
42. Rape happens when a man's sex drive gets out of control.	.44 (3.60)	<b>.46 (6.45)</b>
43. A woman who goes to the home or apartment of a man on the first date is implying that she wants to have sex.	<b>.76 (17.56)</b>	.04 (0.68)
44. Many women actually enjoy sex after the guy uses a little force.	<b>.60 (6.42)</b>	<b>.31 (3.81)</b>
45. If a woman claims to have been raped but has no bruises or scrapes, she probably shouldn't be taken too seriously.	<b>.84 (27.53)</b>	-0.00 (-0.09)

*Note.* For the standardized score, the critical z-score was 3.62,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ). RMAS = *Rape Myth Acceptance Scale*; IRMAS = *Illinois Rape Myth Acceptance Scale*.

Table 4

*Eigenvalues and Proportion of Variance Explained for the Retained Factor*

Factors	Initial Eigenvalue	Proportion of Variance Explained Prerotation	95 <sup>th</sup> Percentile Eigenvalues
1	39.10	45.47%	2.68
2	3.40	3.90%	2.52
3	2.31 <sup>a</sup>		2.43
4	1.96		2.35
5	1.83		2.26
6	1.74		2.20
7	1.63		2.13
8	1.51		2.08
9	1.38		2.02
10	1.34		1.98
11	1.23		1.92
12	1.20		1.88
13	1.12		1.83
14	1.06		1.78
15	1.02		1.74

*Note.* The proportion of variance explained applies to the unrotated factor structure solution. <sup>a</sup> The point at which the parallel analysis 95<sup>th</sup> percentile eigenvalue exceeds the initial eigenvalue. Only the results for the raw data permutations ( $n = 1,000$  data sets) 95<sup>th</sup> percentile eigenvalues are presented in the table as the same results were obtained when computer-generated normally distributed data were used ( $n = 5,000$  data sets).

Table 5  
*Model Fit Statistics For Models 1 to 14*

Model	RMSEA (90% CI)	CFI	SRMR
1	.038 (.034, .041)	.960	.065
2	.033 (.030, .037)	.969	.056
3	.030 (.026, .033)	.976	.051
4	.028 (.024, .032)	.979	.047
5	.027 (.023, .031)	.981	.045
6	.027 (.023, .031)	.981	.042
7	.027 (.023, .031)	.982	.040
8	.028 (.024, .032)	.981	.037
9	.028 (.023, .032)	.982	.035
10	.028 (.024, .032)	.982	.033
11	.028 (.023, .032)	.983	.032
12	.027 (.023, .032)	.984	.030
13	.027 (.023, .032)	.984	.029
14	.027 (.022, .032)	.985	.027

*Note.* RMSEA (Root Mean Square Error of Approximation) should be less than .06, CFI (Comparative Fit Index) should be greater than .95, and SRMR (Standardized Root Mean Square Residual) should be less than .08 to indicate good fit.

To interpret the factor structure, rotated factors were examined for factor loadings greater than .40 (Stevens, 2002), the standardized factor loadings were examined for values that significantly differed from zero, and the factor structure loadings were examined to see with which factor each item most strongly correlated. All items had rotated factor loadings greater than .40 (see Table 6), significant standardized factor scores, and high correlations on the factor. Thus, all items were retained and included in the factor.

Table 6  
*Rotated Factor Loadings and Standardized Rotated Loadings For Items From All Scales*

RMAS Item	Rotated Factor Loading (Standardized Rotated Factor Loading)
1. A woman who goes to the home or apartment of a man on their first date implies that she is willing to have sex.	<b>.78 (26.85)</b>
2. Any female can get raped.	<b>-.51 (-9.96)</b>
3. One reason that women falsely report a rape is that they frequently have a need to call attention to themselves.	<b>.63 (15.76)</b>

4. Any healthy woman can successfully resist a rapist if she really wants to.	<b>.77 (24.02)</b>
5. When women go around braless or wearing short shirts and tight tops, they are just asking for trouble.	<b>.78 (26.37)</b>
6. In the majority of rapes, the victim is promiscuous or has a bad reputation.	<b>.83 (34.28)</b>
7. If a girl engages in necking or petting and she lets things get out of hand, it is her own fault if her partner forces sex on her.	<b>.84 (35.67)</b>
8. Women who get raped while hitchhiking get what they deserve.	<b>.83 (28.71)</b>
9. A woman who is stuck-up and thinks she is too good to talk to guys on the street deserves to be taught a lesson.	<b>.87 (32.68)</b>
10. Many women have an unconscious wish to be raped, and may then unconsciously set up a situation in which they are likely to be attacked.	<b>.83 (32.29)</b>
11. If a woman gets drunk at a party and has intercourse with a man she's just met there, she should be considered "fair game" to other males at the party who want to have sex with her too, whether she wants it or not.	<b>.82 (27.23)</b>

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**RAPE Item**


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1. Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress.	<b>.69 (17.65)</b>
2. Women who get raped probably deserved it.	<b>.84 (30.07)</b>
3. Women generally want sex no matter how they can get it.	<b>.78 (25.53)</b>
4. Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex.	<b>.79 (24.64)</b>
5. If a woman does not resist strongly to sexual advances, she is probably willing to have sex.	<b>.74 (24.39)</b>
6. Women often falsely accuse men of rape.	<b>.61 (14.22)</b>
7. A lot of women who get raped had "bad reputations" in the first place.	<b>.76 (24.84)</b>
8. If women did not sleep around so much, they would be less likely to get raped.	<b>.82 (31.44)</b>
9. If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually.	<b>.78 (25.93)</b>
10. When women wear tight clothes, short skirts, and no bra or underwear, they are asking for sex.	<b>.80 (30.48)</b>
11. A lot of women claim they were raped just because they want attention.	<b>.74 (22.69)</b>

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| 13. If a man has sex with a woman before, then he should be able to have sex with her any time he wants.   | <b>.81 (26.34)</b> |
| 14. Just fantasizing about forcing someone to have sex isn't all that bad since no one is really being hurt.   | <b>.43 (7.87)</b>  |
| 15. Women who go to bars a lot are mainly looking to have sex.   | <b>.70 (19.45)</b> |
| 16. A lot of times when women say "no" they are just playing hard to get, and really mean "yes."   | <b>.76 (24.39)</b> |
| 17. Part of a wife's duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood.  | <b>.76 (23.75)</b> |
| 18. Often a woman reports rape long after the fact because she gets mad at the man she had sex with and is just trying to get back at him.                               | <b>.70 (18.59)</b> |
| 19. As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad.   | <b>.86 (33.90)</b> |
| 20. When a woman gets raped more than once, she is probably doing something to cause it.   | <b>.82 (31.77)</b> |
| 21. Women who get raped will eventually forget about it and get on with their lives.   | <b>.75 (22.17)</b> |
| 22. On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually.                                       | <b>.82 (30.81)</b> |
| 23. I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.   | <b>.81 (30.59)</b> |
| 24. When women act like they are too good for men, most men probably think about raping the women to put them in their place.  | <b>.74 (21.25)</b> |
| 25. I believe that society and the courts are too tough on rapists.  | <b>.73 (19.01)</b> |
| 26. Most women are sluts and get what they deserve.  | <b>.82 (29.79)</b> |
| 27. Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is. | <b>.76 (23.71)</b> |
| 28. Generally, rape is not planned - a lot of times it just happens.   | <b>.38 (6.29)</b>  |
| 29. If a person tells himself that he will never rape again, then he probably won't.   | <b>.63 (13.66)</b> |
| 30. A lot of men who rape do so because they are deprived of sex.  | <b>.64 (15.42)</b> |
| 31. The reason a lot of women say "no" to sex is because they don't want to seem loose.  | <b>.67 (17.98)</b> |
| 32. If a woman goes to the home of a man on the first date, she  | <b>.72 (22.23)</b> |

probably wants to have sex with him.	
33. Many women have a secret desire to be forced into having sex.	<b>.81 (29.35)</b>
34. Most of the men who rape have stronger sexual urges than other men.	<b>.68 (17.55)</b>
35. I believe that any woman can prevent herself from being raped if she really wants to.	<b>.71 (20.76)</b>
36. Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child.	<b>.71 (20.88)</b>

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 IRMAS Item
 

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1. If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.	<b>.74 (23.18)</b>
2. Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."	<b>.76 (25.49)</b>
3. When men rape, it is because of their strong desire for sex.	<b>.68 (16.74)</b>
4. If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.	<b>.80 (28.17)</b>
5. Women who are caught having an illicit affair sometimes claim that it was rape.	<b>.59 (13.91)</b>
7. Many so-called rape victims are actually women who had sex and "changed their minds" afterwards.	<b>.74 (22.13)</b>
8. Many women secretly desire to be raped.	<b>.76 (23.40)</b>
9. Rape mainly occurs on the "bad" side of town.	<b>.79 (26.17)</b>
10. Usually, it is only women who do things like hang out in bars and sleep around that are raped.	<b>.82 (31.09)</b>
12. If a woman doesn't physically fight back, you can't really say that it was rape.	<b>.83 (32.58)</b>
13. Men from nice middle-class homes almost never rape.	<b>.74 (19.24)</b>
14. Rape isn't as big a problem as some feminists would like people to think.	<b>.71 (19.45)</b>
15. When women go around wearing low-cut tops or short skirts, they're asking for trouble.	<b>.85 (39.26)</b>
16. Rape accusations are often used as a way of getting back at men.	<b>.63 (14.93)</b>
17. A rape probably didn't happen if the woman has no bruises or marks.	<b>.81 (29.14)</b>
18. Many women find being forced to have sex very arousing.	<b>.73 (21.44)</b>
19. If a woman goes home with a man she doesn't know, it is her	<b>.82 (32.67)</b>

own fault if she is raped.	
20. Rapists are usually sexually frustrated individuals.	<b>.62 (14.21)</b>
22. It is usually only women who dress suggestively that are raped.	<b>.78 (27.73)</b>
23. Some women prefer to have sex forced on them so they don't have to feel guilty about it.	<b>.82 (32.26)</b>
24. If the rapist doesn't have a weapon, you really can't call it rape.	<b>.84 (29.03)</b>
25. When a woman is a sexual tease, eventually she is going to get into trouble.	<b>.62 (15.20)</b>
26. Being raped isn't as bad as being mugged and beaten.	<b>.79 (24.08)</b>
27. Rape is unlikely to happen in the woman's own familiar neighborhood.	<b>.78 (23.68)</b>
28. In reality, women are almost never raped by their boyfriends.	<b>.68 (17.54)</b>
29. Women tend to exaggerate how much rape affects them.	<b>.84 (32.13)</b>
30. When a man is very sexually aroused, he may not even realize that the woman is resisting.	<b>.71 (18.78)</b>
31. A lot of women lead a man on and then they cry rape.	<b>.73 (21.97)</b>
33. A lot of times, women who claim they were raped just have emotional problems.	<b>.75 (24.37)</b>
34. If a woman doesn't physically resist sex - even when protesting verbally - it really can't be considered rape.	<b>.76 (22.83)</b>
35. Rape almost never happens in the woman's own home.	<b>.74 (21.88)</b>
36. A woman who "teases" men deserves anything that might happen.	<b>.85 (37.03)</b>
37. When women are raped, it's often because the way they said "no" was ambiguous.	<b>.80 (28.35)</b>
38. If a woman isn't a virgin, then it shouldn't be a big deal if her date forces her to have sex.	<b>.80 (21.88)</b>
39. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.	<b>.67 (17.75)</b>
41. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.	<b>.81 (31.48)</b>
42. Rape happens when a man's sex drive gets out of control.	<b>.63 (14.94)</b>
43. A woman who goes to the home or apartment of a man on the first date is implying that she wants to have sex.	<b>.77 (25.96)</b>
44. Many women actually enjoy sex after the guy uses a little force.	<b>.72 (22.23)</b>
45. If a woman claims to have been raped but has no bruises or	<b>.83 (31.44)</b>

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scrapes, she probably shouldn't be taken too seriously.

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*Note.* For the standardized score, the critical z-score was 3.44,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ). RMAS = *Rape Myth Acceptance Scale*; IRMAS = *Illinois Rape Myth Acceptance Scale*.

A 1-factor structure in the current study seems to contradict past research in the literature (e.g., Briere et al., 1985; Hermann et al., 2012). Thus, to investigate whether results may have been influenced by the small sample size, four additional EFAs that included items from the RMAS, RAPE Scale, and IRMAS (including the IRMA-SF [short form]) separately were conducted. A 1-factor model emerged from all four EFAs, including the IRMA-SF (see Appendices J – M), suggesting that sample size may not have significantly affected results in the current study. This will be further addressed in the discussion.

### **Pearson's Correlation**

**Data screening.** Data screening analyses necessary to run correlation analyses were conducted using the SPSS version 23 for Windows.

**Missing data.** Prior to conducting any missing data analyses, participants who did not fulfill the inclusion criteria as well as those who responded incorrectly to any of the quality control questions were excluded from the dataset (see Participants section above). This resulted in a total of 216 participants included in the missing data analyses. T-tests were performed to examine whether participants missing data and those with complete scores were significantly different on relevant variables such as age, rape cognition, and sexual aggression. Missing data analyses indicated that participants with missing values ( $n = 27$ , 12.5%) on the SES-TV-R had significantly higher Total Scores than those with complete scores on the SES-TV-R ( $t(189) = 3.86, p < .001$ ). Similarly, those missing values on the P-SES-TV-R ( $n = 25$ , 11.6%) also had significantly higher Total Scores than those with complete scores on the P-SES-TV-R ( $t(189) = 2.82, p < .05$ ). All other tests were non-significant, indicating that the data were missing at

random. Of note, results were comparable after multiple imputations was used to impute values for missing data. Thus, listwise deletion was used on all subsequent analyses in order to maintain the original data.

**Outliers.** Univariate and bivariate outliers for all variables of interest (i.e., Total Score, RMAS, RAPE Scale, IRMAS, SES-TV-R, and P-SES-TV-R total scores) were screened before statistical analyses. To screen for univariate outliers, z-scores were examined to determine whether any scores exceeded  $\pm 3.29$ . Any z-scores that exceeded this cut-off were modified to the next lowest or highest value of that variable. To screen for bivariate outliers, Mahalanobis distance values were examined. Mahalanobis values indicated that there were too many bivariate and multivariate outliers, particularly for the SES-TV-R and P-SES-TV-R scores, which also suggests that normality may be violated. Therefore, the two SES scores were dichotomized into ‘yes’ or ‘no’ past sexual aggression and ‘yes’ or ‘no’ likelihood of future sexual aggression. Once dichotomized, this assumption was met for both variables. The dichotomized SES variables were used in all subsequent analyses.

**Normality, linearity, and homoscedasticity.** Skewness and kurtosis values were used to assess the normality assumption for each variable. Variables were considered significantly skewed and/or kurtotic if z-scores exceeded  $\pm 3.29$ . All variables (Total Score, RMAS, RAPE Scale, and IRMAS total scores, and dichotomized SES-TV-R and P-SES-TV-R scores) met the normality assumption. Moreover, scatterplots were examined to determine whether the variables were linear and homoscedastic. Given that all variables were normal, these variables also met the linearity and homoscedasticity assumptions.

After assumptions were met, Pearson’s correlation coefficients were used to examine the relationship between the retained factor (i.e., Total Score) and past and future likelihood of

sexual aggression (see Table 7). Pearson's correlation was used instead of polychoric correlation in this case because the SES total scores are continuous. The Total Score was computed by summing all items included in the factor. The Total Score and all rape cognition scale totals were significantly associated with past sexually aggressive behaviours ( $r$ 's = .24 – .29,  $p$ 's < .001) and future likelihood of sexually aggressive behaviour ( $r$ 's = .25 – .29,  $p$ 's < .001), demonstrating that those who were/are more sexually aggressive tend to endorse more rape cognitions. In addition, I explored the relationship between each IRMAS subscale score and past and future likelihood of sexual aggression to examine whether the subscale scores have greater relationships with sexual aggression than the general construct (see Table 8). Of the seven subscales, the relationships between six subscales (i.e., *She asked for it*, *It wasn't really rape*, *He didn't mean to*, *She lied*, *Rape is a trivial event*, and *Rape is a deviant event*) and past sexually aggressive behaviour ( $r$ 's = .18 – .27,  $p$ 's < .05) did not exceed the relationship between the IRMAS total score and past sexually aggressive behaviour. Furthermore, the relationship between five subscales (i.e., *She asked for it*, *It wasn't really rape*, *He didn't mean to*, *She lied*, and *Rape is a trivial event*) and future likelihood of sexually aggressive behaviour ( $r$ 's = .21 – .25,  $p$ 's < .001) did not exceed the relationship between the IRMAS total score and future likelihood of sexually aggressive behaviour ( $r = .29, p < .001$ ).

Table 7  
*Pearson's Correlations Between the Total Score, Rape Scale Totals, and Indicators of Sexually Aggressive Behaviour Scale Totals*

	1	2	3	4	5	6
1. Total Score	-	.95*	.99*	.99*	.29*	.28*
2. RMAS Total		-	.93*	.92*	.24*	.25*
3. RAPE Total			-	.97*	.29*	.29*
4. IRMAS Total				-	.29*	.29*
5. SES-TV-R					-	.72*
6. P-SES-TV-R						-

*Note.* Total Score is the sum of all items included in the factor. RMAS = *Rape Myth Acceptance Scale*; IRMAS = *Illinois Rape Myth Acceptance Scale*; SES-TV-R = *Sexual Experiences Survey – Tactics Version – Revised*; P-SES-TV-R = *Proclivity – Sexual Experiences Survey – Tactics Version – Revised*. \*  $p < .001$ .

Table 8

*Pearson's Correlations Between IRMAS Total and Subscale Scores, and Indicators of Sexually Aggressive Behaviour Scale Totals*

	1	2	3	4	5	6	7	8	9	10
1. IRMAS Total	-	.93**	.86**	.78**	.85**	.86**	.85**	.88**	.29**	.29**
2. SA Subscale		-	.81**	.69**	.72**	.78**	.75**	.77**	.27**	.24**
3. NR Subscale			-	.54**	.70**	.69**	.82**	.74**	.23**	.21**
4. MT Subscale				-	.61**	.62**	.51**	.66**	.26**	.25**
5. WI Subscale					-	.73**	.71**	.68**	.33**	.32**
6. LI Subscale						-	.69**	.68**	.20**	.22**
7. TE Subscale							-	.74**	.18*	.21**
8. DE Subscale								-	.27**	.30**
9. SES-TV-R									-	.72**
10. P-SES-TV-R										-

*Note.* IRMAS = *Illinois Rape Myth Acceptance Scale*; SA = *She asked for it*; NR = *It wasn't really rape*; MT = *He didn't mean to*; WI = *She wanted it*; LI = *She lied*; TE = *Rape is a trivial event*; DE = *Rape is a deviant event*; FI = *filler item (not scored)*; SES-TV-R = *Sexual Experiences Survey – Tactics Version – Revised*; P-SES-TV-R = *Proclivity – Sexual Experiences Survey – Tactics Version – Revised*.

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

### Discussion

The purpose of the current study was to attempt to replicate and extend past research findings by examining whether currently used measures of rape cognition are assessing distinct underlying constructs and whether such constructs are associated with sexual aggression. In the published literature, rape cognition is often measured and discussed as a unitary construct (e.g., Basow & Minieri, 2011; Bouffard & Bouffard, 2011; Hermann et al., 2012). However, both theory and research have suggested that rape cognition may consist of distinct types of cognitive constructs. On the contrary, an exploratory factor analysis of the above scales revealed a 1-factor model in the current study, suggesting that all three scales are measuring the same underlying construct. Nevertheless, these results are inconsistent with some previous studies exploring the factor structure of each of these scales independently. For example, Briere et al. (1985) factor analyzed Burt's RMAS and found four distinct factors. Likewise, Hermann et al. (2012) found two distinct factors that comprised the RAPE Scale, suggesting that these scales are measuring distinct cognitive constructs. However, the current results suggest that, when combined, these measures are assessing the same underlying construct, which is consistent with results from Nunes et al. (2016) (discussed later). There are three possible explanations for the current findings.

First, it is possible that the EFA detected a super latent construct of rape cognition rather than subordinate types. As mentioned earlier, Payne et al. (1999) found seven subscales that consist of the IRMAS through structural equation modeling. Three competing models of rape myth acceptance (i.e., Unidimensional, Multidimensional, and Hierarchical) were subsequently constructed to identify the model that fit best with the data. Results showed that neither the Unidimensional model nor the Multidimensional model was well supported by the data. Instead,

Payne et al. (1999) suggested that the results indicate that a more accurate conceptualization must recognize rape cognition (or rape myth acceptance) as a cohesive construct on its own (e.g., a general component), with the incremental utility of distinct components (e.g., seven distinct rape myth components/subscales). Therefore, the EFA in the current study may have detected a general component of rape myths, resulting in only one interpretable factor.

Payne and colleagues suggested that it might be insufficient to view rape myth acceptance either as a unitary construct—as is generally assumed in the literature—or as a set of distinct and unrelated components. They further suggested that it would be better to conceptualize this general construct as also consisting of distinct yet related sub-constructs. However, the researchers did not explain any practical differences between interpreting this construct as a unitary construct or a super latent construct. For example, would it change optimal use of the IRMAS measure in its relationship with past and future likelihood of sexual aggression? As shown in Table 8, the correlations between each of the seven IRMAS subscale scores and past and future likelihood of sexually aggressive behaviours generally did not exceed the correlation between the total score and sexual aggression, suggesting that it may not be necessary to conceptualize the general construct as a super latent factor as opposed to a unitary factor in order to better understand and/or predict sexually aggressive behaviours. More specifically, if the sub-constructs do not provide additional information in a practical sense, then it may not make a difference to view the super latent factor as different from a unitary construct. Future research is needed to further examine this hypothesis as this is beyond the scope and main purposes of the current study.

The second explanation for the current findings is that, given that most estimation methods require the correlation matrix to be a positive definite (i.e., all eigenvalues are positive;

Wothke, 1993), the current data could have resulted in a correlation matrix that is a non-positive definite (NPD; i.e., negative eigenvalues exist in the matrix). Some possible causes of NPD noted by Wothke (1993) are extreme bivariate or multivariate collinearity among observed variables and small sample sizes, which could lead to sampling variation. Given that bivariate collinearity in the current study was screened for and corrected, it is possible that multivariate collinearity (i.e., a third variable that influenced the relationship between two variables) existed and affected the results. Unlike bivariate collinearity, multivariate collinearity may not be visually obvious. In such cases, Wothke (1993) noted that sequential analysis of the covariance matrix (i.e., adding one variable at a time and computing the determinant) should assist to isolate the problem. This was not done in the current study because it was not necessary from an exploratory standpoint to enter one item at a time into the EFA. Moreover, Wothke (1993) suggested that sample size could have caused the data to be NPD. Specifically, when sample size is small, a sample correlation matrix may be NPD due to sampling fluctuation (Anderson & Gerbing, 1984). Given the small sample size, this could have caused the correlation matrix in the current study to contain negative eigenvalues. However, Muthen and Kaplan (1985, 1992) noted that sampling variation could also occur with large sample sizes. Nevertheless, together, these issues may explain the mixed findings between the current study and some past studies. Thus, a general suggestion is to increase sample size and screen for multicollinearity in order to prevent NPD in future studies.

Last, it is possible that these are true results from the current data. As mentioned previously, although Uji et al. (2007) found more than one factor that comprised Burt's (1980) RMAS, they noted that the second factor was not interpretable, and concluded that a 1-factor solution would be more appropriate for their data. Likewise, factor retention methods in the

current study indicated that at least two factors existed among the combined rape cognition items, but the differences between the factors were not interpretable; thus, a 1-factor solution seemed more appropriate. Moreover, Nunes et al. (2016) conducted an EFA of the RAPE Scale and the Evaluation of Rape Scale and found that items from both scales loaded onto distinct factors. Importantly, they found that the RAPE Scale items loaded primarily onto one factor (i.e., Factor 2), suggesting that these items are measuring the same underlying construct. It is possible, then, that the current findings are not the result of errors or biases in the data, but are true results. Notwithstanding, other studies have found multiple factor solutions for these scales (e.g., Briere et al., 1985; Hermann et al., 2012), suggesting large inconsistencies in the literature. To my knowledge, this is the first study of its kind. Therefore, additional research is needed to explore whether these results would be replicated with a larger sample size.

Other limitations in the current study should be noted. First, as mentioned above, one important limitation is the small sample size. Although there are no specific rules or guidelines to specify the required number of participants, it is commonly suggested that factor analyses should have at least 300 cases (e.g., Comrey & Lee, 1992; Tabachnick & Fidell, 2012). However, the minimum number of participants required for EFAs is not consistent across studies. For example, MacCallum et al. (1999) show that samples in the range of 100-200 are acceptable with well-determined factors (i.e., most factors defined by many indicators with loadings  $<.80$ ). Indeed, Guadagnoli and Velicer (1988) found that if a factor has four or more loadings greater than  $.6$ , then it is reliable regardless of sample size. Further, they found that factors with 10 or more loadings greater than  $.40$  are reliable if sample size is at least 150. As can be seen in Table 4, all factor loadings were greater than  $.40$ , indicating that the factor is reliable despite the small sample size. Nevertheless, a larger sample size would have perhaps

provided more power to detect additional (or subordinate) factors. In an attempt to explore whether sample size was a significant issue in the current study, four EFAs were conducted using items from each scale separately, including the short form of the IRMAS. Results indicated that, even when the number of items to be factor analyzed was small (i.e., 11 to 45), only one interpretable factor emerged each time, suggesting that the small sample size in the current study may not sufficiently explain the results obtained.

Second, missing data analyses indicated that Total Scores were significantly different between participants missing data on either or both self-reported sexual aggression scales (i.e., SES-TV-R and P-SES-TV-R) and those with complete values on these scales. This suggests that data in the current study were missing in some systematic way, compromising the validity of conclusions that can be drawn from this study.

Third, although the decision to change all response scales to a 4-point Likert scale was to prevent items with the same response scale from clustering together, this number of points was chosen arbitrarily and does not mean that a 4-point scale was the best choice. Given that previous studies have used the original response scales for these rape cognition measures, it is possible that findings in the current study were inconsistent with past research because the response scales were different. Thus, it is possible that a wider response scale may have changed results in the current study.

It is important to note that even though the EFA could not detect more than one interpretable factor in the current study, the factor was still equally associated with both past and future likelihood of sexual aggression. This suggests that, even though we did not find specific types of cognitive constructs, a general construct is still significantly related to past sexual aggression, and may predict future sexually aggressive behaviours. Therefore, as discussed

above, it may not be necessary from a practical point of view to distinguish between specific types of cognitive constructs to predict future sexually aggressive behaviours.

Given the limitations in the current study, these results should not be taken to conclude that rape cognition scales assess the same general underlying construct, and should be interpreted with caution. Past theory and research have suggested that rape cognition may consist of distinct types of cognitive constructs, which could have meaningfully different relationships with sexual aggression (e.g., related vs. causal). This suggestion may still be valid, but further research is needed to determine whether specific types of cognitions exist within and between self-reported measures of rape cognition. Nevertheless, the super latent construct is related to past and future sexual aggression in the current study, suggesting that distinguishing among subordinate types of rape cognitions may not significantly provide additional information to understand sexual aggression. Given that this is the first study to examine whether similar constructs are assessed both between and within measures, it is difficult to precisely identify and control for potential limitations in the study. Therefore, future research should utilize a larger sample size and screen for potential bivariate and multivariate collinearity in order to provide more insight for the current findings. Additionally, given that the relationships between the rape cognition measures (including the Total Score) and self-reported sexual aggression were relatively equal in the current study, future research could perhaps reduce the number of items from all three measures to contain a more optimal subset of items while retaining the relationship with sexual aggression. Provided that these are true results, identification of a smaller subset of optimal, representative items would be beneficial in terms of consistency and efficiency for researchers and clinicians.

### References

- Abbey, A., & McAuslan, P. (2004). A longitudinal examination of male college students' perpetration of rape. *Journal of Consulting and Clinical Psychology, 72*, 747-756.
- Abbey, A., McAuslan, P., Zawacki, T., Clinton, A. M., Buck, P. O. (2001). Attitudinal, experiential, and situational predictors of rape perpetration. *Journal of Interpersonal Violence, 16*(8), 784-807.
- Abbey, A., Parkhill, M. R., & Koss, M. P. (2005). The effects of frame of reference on responses to questions about sexual assault victimization and perpetration. *Psychology of Women Quarterly, 29*, 364-373.
- Abbey, A., Wegner, R., Pierce, J., & Jacques-Tiura, A. J. (2012). Patterns of sexual aggression in a community sample of young men: Risk factors associated with persistence, desistance, and initiation over a 1-year interval. *Psychology of Violence*. Advanced online publication. doi: 10.1037/a0026346
- Abel, G., Becker, J.V., & Cunningham-Rathner, J. (1984). Complications, consent and cognitions in sex between children and adults. *International Journal of Law and Psychiatry, 7*, 89-103.
- Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology, 52*, 27-58.  
doi:10.1146/annurev.psych.52.1.27
- Anderson, J. C., & Gerbing, D. W. (1984). The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika, 49*, 155-73.
- Bartels, R. M. & Gentry, R. (2015, October). The influence of rape cognitions on memory recall. In C. A. Hermann (Chair) *Rape--supportive Cognition and Sexual Aggression Against*

- Adults*. Symposium conducted at the 34th Annual Research and Treatment Conference of the Association for the Treatment of Sexual Abusers, Montreal, Quebec, Canada.
- Basow, A., S., & Minieri, A. (2011). "You owe me": Effects of date cost, who pays, participant gender, and rape myth beliefs on perceptions of rape. *Journal of Interpersonal Violence, 26*, 479-497. doi: 10.1177/0886260510363421
- Beech, A., Bartels, R. M., & Dixon, L. (2013). Assessment and Treatment of Distorted Schemas in Sexual Offenders. *Trauma, Violence, & Abuse, 14*, 54-66. doi: 10.1177/1524838012463970
- Beech, A., Fisher, D., & Ward, T. (2005). Sexual murderers' implicit theories. *Journal of Interpersonal Violence, 20*, 1366-1389. doi:10.1177/0886260505278712
- Bernat, J. A., Stolp, S., Calhoun, K. S., & Adams, H. E. (1997). Construct validity and test-retest reliability of a date rape decision latency measure. *Journal of Psychopathology and Behavioral Assessment, 19*, 315-330. doi:10.1007/BF02229024
- Blake, E. & Gannon, T. A. (2010). The implicit theories of rape-prone men: An information-processing investigation. *International Journal of Offender Therapy and Comparative Criminology, 54*, 895-914. doi: 10.1177/0306624X09347732
- Blumenthal, S., Gudjonsson, G., & Burns, J., (1999). Cognitive distortions and blame attribution in sex offenders against adults and children. *Child Abuse & Neglect, 23*, 129-143.
- Bohner, G., Jarvis, C., Eyssel, F., & Siebler, F. (2005). The causal impact of rape myth acceptance on men's rape proclivity: Comparing sexually coercive and noncoercive men. *European Journal of Social Psychology, 35*, 819-828.
- Bohner, G., Reinhard, M-A., Rutz, S., Sturm, S., Kerschbaum, B., & Effler, D. (1998). Rape myths as neutralizing cognitions: Evidence for a causal impact of anti-victim attitudes on

- men's self-reported likelihood of raping. *European Journal of Social Psychology*, 28, 257-268.
- Bouffard, L. A., & Bouffard, J. A. (2011). Understanding men's perceptions of risks and rewards in a date rape scenario. *International Journal of Offender Therapy and Comparative Criminology*, 55, 626-645. doi: 10.1177/0306624X10365083
- Boyce, J., Cotter, A., & Perreault, C. (2013). Police-reported crime in Canada, 2013. *Statistics Canada: Juristat, Catalogue number 85-002-X*.
- Brennan, S., & Taylor-Butts, A. (2008). Rape in Canada: 2004 and 2007. Canadian Centre for Justice Statistics Profile Series (No. 19). Statistics Canada, Catalogue No. 85F0033M. Ottawa, Ontario.
- Briere, J., Malamuth, N., & Check, J. V. P. (1985). Sexuality and rapebeliefs. *International Journal of Women's Studies*, 8, 398-403.
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford Press.
- Bumby, K. (1996). Assessing the cognitive distortions of child molesters and rapists: Development and validation of the MOLEST and RAPE Scales. *Sexual Abuse: A Journal of Research and Treatment*, 8, 37-54. doi: 10.1007/BF02258015
- Burt, M. R. (1980). Cultural myths and supports for rape. *Journal of Personality and Social Psychology*, 38, 217-230.
- Calhoun, K. S., Bernat, J. A., Clum, G. A., & Frame, C. L. (1997). Sexual coercion and attraction to sexual aggression in a community sample of young men. *Journal of Interpersonal Violence*, 12, 392-406.

- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation, 10*, 1-9.
- Cudeck, R., & O'Dell, L. L. (1994). Applications of standard error estimates in unrestricted factor analysis: Significance tests for factor loadings and correlations. *Psychological Bulletin, 115*, 475-487.
- Cue Davis, K. C., Gilmore, A. K., Stappenbeck, C. A., Balsan, M. J., George, W. H., & Norris, J. (2014). How to score the Sexual Experiences Survey? A comparison of nine methods. *Psychology of Violence, 4*, 445-461. doi: 10.1037/a0037494
- DeGue, S., & DiLillo, D. (2004). Understanding perpetrators of nonphysical sexual coercion: Characteristics of those who cross the line. *Violence and Victims, 19*, 673-688. doi: 10.1891/vivi.19.6.673.66345
- DeGue, S., DiLillo, D., & Scalora, M. (2010). Are all perpetrators alike? Comparing risk factors for sexual coercion and aggression. *Sexual Abuse: A Journal of Research and Treatment, 22*, 402-426. doi: 10.1177/1079063210372140
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*, 272-299.
- Fazio, R. H. (2007). Attitudes as object-evaluation associations of varying strength. *Social Cognition, 25*(5), 603-637. doi:10.1521/soco.2007.25.5.603

- Feelgood, S., Cortoni, F., Thompson, A. (2005). Sexual coping, general coping and cognitive distortions in incarcerated rapists and child molesters. *Journal of Sexual Aggression, 11*, 157-170. doi: 10.1080/13552600500073657
- Field, H. S. (1978). Attitudes toward rape: A comparative analysis of police, rapists, crisis counsellors, and citizens. *Journal of Personality and Social Psychology, 36*, 156-179.
- Fisher, D., & Beech, A. R. (2007). Implicit theories of rapists and sexual murderers. In T. A. Gannon, T. Ward, A. R. Beech, & D. Fisher (Eds.), *Aggressive offenders' cognition* (pp. 31-51). Chichester, UK: Wiley.
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods, 9*, 466-491. doi:10.1037/1082-989X.9.4.466
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment, 7*, 286-299.  
doi:10.1037/1040-3590.7.3.286
- Gannon, T. A., & Polaschek, D. L. L. (2006). Cognitive distortions in child molesters: A re-examination of key theories and research. *Clinical Psychology Review, 26*, 1000-1019.  
doi:10.1016/j.cpr.2005.11.010
- Gannon, T. A., Ward, T., & Collie, R. (2007). Cognitive distortions in child molesters: Theoretical and research developments over the past two decades. *Aggression and Violent Behavior, 12*, 402-416. doi:10.1016/j.avb.2006.09.005
- Garrido, L. E., Abad, F. J., & Ponsoda, V. (2011). Performance of Velicer's minimum average partial factor retention method with categorical variables. *Educational and Psychological Measurement, 71*, 551-570.

Geer, J. H., Estupinan, L. A., & Manguno-Mire, G. M. (2000). Empathy, social skills, and other relevant cognitive processes in rapists and child molesters. *Aggression and Violent Behavior, 5*, 99–126.

Gidycz, C. A., Warkentin, J. B., Orchowski, L. M., & Edwards, K. M. (2011).

College men's perceived likelihood to perpetrate sexual aggression. *Journal of Aggression, Maltreatment & Trauma, 20*, 260-279. doi: 10.1080/10926771.2011.562480

Hall, G. C. & Hirschman, R. (1991). Toward a theory of sexual aggression: A quadripartite model. *Journal of Consulting and Clinical Psychology, 59*, 662-669.

Hanson, R. K., Harris, A. J. R., Scott, T.-L., & Helmus, L. (2007). *Assessing the risk of sexual offenders on community supervision: The Dynamic Supervision Project* (Corrections Research User Report No. 2007-05). Ottawa, Ontario, Canada: Public Safety Canada.

Hanson, R. K., & Morton-Bourgon, K. E. (2004). *Predictors of sexual recidivism: An updated meta-analysis* (Corrections User Report No. 2004-02). Ottawa, Canada: Public Safety Canada.

Hanson, R. K., & Thornton, D. (1999). *Static-99: Improving actuarial risk assessments for sex offenders* (User Report 2003-01). Ottawa, Canada: Department of the Solicitor General of Canada.

Hartley, C. C. (1998). How incest offenders overcome internal inhibitions through the use of cognitions and cognitive distortions. *Journal of Interpersonal Violence, 13*, 25-39.

Helmus, L., Hanson, R. K., Babchishin, K. M., & Mann, R. E. (2013). Attitudes supportive of sexual offending predict recidivism: A meta-analysis. *Trauma, Violence, & Abuse, 14*, 34-53.

Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research:

Common errors and some comment on improved practice. *Educational and Psychological Measurement*, *66*, 393-416. doi:10.1177/0013164405282485

Hermann, C. A., Babchishin, K. M., Nunes, K. L., Leth-Steensen, C., & Cortoni, F. (2012).

Factor structure of the Bumby RAPE scale. *Criminal Justice and Behavior*, *39*, 869-886. doi: 10.1177/0093854812436802

Holgado-Tello, F. P., Chacón-Moscoso, S., Barbero-García, I., & Vila-Abad, E. (2010).

Polychoric versus Pearsons correlations in exploratory and confirmatory factor analysis of ordinal variables. *Quality and Quantity*, *44*, 153-166. doi:10.1007/s11135-008-9190-y

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis:

Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1-55. doi:10.1080/10705519909540118

Koss, M. P., Abbey, A., Campbell, R., Cook, S., Norris, J., Testa, M....White, J. (2007).

Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. *Psychology of Women Quarterly*, *31*, 357-370. doi: 10.1111/j.1471-6402.2007.00385.x

Koss, M. P., & Gidycz, C. A. (1985). Sexual Experiences Survey: Reliability and validity.

*Journal of Consulting and Clinical Psychology*, *53*, 422-423. doi: 10.1037/0022-006X.53.3.422

Koss, M. P., Gidycz, C. A., & Wisniewski, N. (1987). The scope of rape: Incidence and

prevalence of sexual aggression and victimization in a national sample of higher

- education students. *Journal of Consulting and Clinical Psychology*, *55*, 162–170.  
doi:110.1037//0022-1006X.1055.1032.1162
- Koss, M. P., & Oros, C. J. (1982). Sexual Experiences Survey: A research instrument investigating sexual aggression and victimization. *Journal of Consulting and Clinical Psychology*, *50*, 455-457. doi: 10.1037/0022-006X.50.3.455
- Lanier, C. A. (2001). Rape-accepting attitudes: Precursors to or consequences of forced sex. *Violence Against Women*, *7*, 876-885. doi: 10.1177/10778010122182802
- Lisak, D., & Miller, P. M. (2002). Repeat rape and multiple offending among undetected rapists. *Violence and Victims*, *17*, 73-84.
- Loh, C., Didycz, C. A., Lobo, T. R., & Luthra, R. (2005). A prospective analysis of rape perpetration: Risk factors related to perpetrator characteristics. *Journal of Interpersonal Violence*, *20*, 1325-1348. doi: 10.1177/0886260505278528
- Lonsway, K. A., & Fitzgerald, L. F. (1994). Rape myths: In review. *Psychology of Women Quarterly*, *18*, 133-164. doi: 10.1111/j.1471-6402.1994.tb00448.x
- MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, *4*, 84-99.
- Maimone, S. A., Hermann, C. A., Atlas, M., Berliant, J., & Nunes, K. L. (2013, November). Implicit and explicit attitudes, rape outcome expectancies, and sexual aggression. In C. A. Hermann (Chair) *Implicit and Explicit Cognition Associated with Rape*. Symposium conducted at the 32nd Annual Research and Treatment Convention of the Association for the Treatment of Sexual Abusers, Chicago, Illinois.
- Malamuth, N. M. (1986). Predictors of naturalistic sexual aggression. *Journal of Personality and Social Psychology*, *50*, 953-962. doi:10.1037/0022-3514.50.5.953

Malamuth, N. M. (1981). Rape proclivity among males. *Journal of Social Issues, 37*, 138-157.

Malamuth, N. M., Sockloskie, R. J., Koss, M. P., & Tanaka, J. S (1991). Characteristics of aggressors against women: Testing a model using a national sample of college students. *Journal of Consulting and Clinical Psychology, 59*(5), 670-681.

Mann, R. E., & Beech, A. R. (2003). Cognitive distortions, schemas, and implicit theories. In T. Ward, D. R. Laws, & S. M. Hudson (Eds.), *Sexual deviance: Issues and controversies* (pp. 135–153). Thousand Oaks, CA: Sage.

Mann, R. E., Hanson, R. K., & Thornton, D. (2010). Assessing risk for sexual recidivism: Some proposals on the nature of psychologically meaningful risk factors. *Sexual Abuse: A Journal of Research and Treatment, 22*, 191-217. doi:10.1177/1079063210366039

Maruna, S. & Mann, R. E. (2006). A fundamental attribution error? Rethinking cognitive distortions. *Legal and Criminological Psychology, 11*, 155-177. doi: 10.1348/135532506X114608

Mouilso, E. R. & Calhoun, K. S. (2013). The role of rape myth acceptance and psychology in rape perpetration. *Journal of Aggression, Maltreatment, & Trauma, 22*, 159-174. doi: 10.1080/10926771.2013.743937

McGrath, R., Cumming, G., Burchard, B., Zeoli, S., & Ellerby, L. (2010). *Current practices and emerging trends in sexual abuser management: The Safer Society 2009 North American Survey*. Brandon, VT: Safer Society Press.

Murphy, W.D. (1990). Assessment and modification of cognitive distortions in sex offenders. In W.L. Marshall, D.R. Laws & H.E. Barbaree (Eds.), *Handbook of rape: Issues, theory and treatment of offenders*. New York: Plenum Press.

- Muthén, B. & Kaplan, D. (1985). A comparison of some methodologies for the factor analysis of non-normal Likert variables. *British Journal of Mathematical and Statistical Psychology*, 38, 171-89.
- Muthén, L. K., & Muthén, B. O. (2015). *MPlus user's guide*. Los Angeles, CA: Muthén and Muthén.
- Nichols, H. & Molinder, I. (1984). *Manual for the Multiphasic Sex Inventory*. Tacoma, WA: Crime and Victim Psychology Specialists.
- Nisbett, R. E., & Ross, L. (1980). *Human inferences: Strategies and shortcomings of social judgment*. Englewood Cliffs, NJ: Prentice Hall.
- Nunes, K. L., Hermann, C. A., Maimone, S., & Woods, M. (2014). Thinking clearly about violent cognitions: Attitudes may be distinct from other cognitions. *Journal of Interpersonal Violence*. Advance online publication. doi: 10.1177/0886260514540329
- Nunes, K. L., Hermann, C. A., White, K., Pettersen, C., & Bumby, K. (2015). Attitude may be everything, but is everything an attitude? Cognitive distortions may not be evaluations of rape. Accepted for publication in *Sexual Abuse: A Journal of Research and Treatment*.
- Ó Ciardha, C., & Ward, T. (2013). Theories of cognitive distortions in sexual offending: What the current research tells us. *Trauma, Violence, & Abuse*, 14, 5-21. doi: 10.1177/1524838012467856
- O'Connor, B. (2009). *Cautions regarding item-level factor analysis*. Retrieved from <https://people.ok.ubc.ca/briocconn/nfactors/itemanalysis.html>
- Olver, M. E., Wong, S. C. P., Nicholaichuk, T., & Gordon, A. (2007). The validity and reliability of the Violence Risk Scale—Sexual Offender version: Assessing sex offender

- risk and evaluating therapeutic change. *Psychological Assessment*, *19*, 318–329.  
doi:10.1037/1040-3590.19.3.318
- Payne, D. L., Lonsway, K. A., & Fitzgerald, L. F. (1999). Rape myth acceptance: Exploration of its structure and its measurement using the Illinois Rape Myth Acceptance Scale. *Journal of Research in Personality*, *33*, 27-68.
- Pervan, S. & Hunter, M. (2007). Cognitive distortions and social self-esteem in sexual offenders. *Applied Psychology in Criminal Justice*, *3*, 75-91.
- Pham, A. T., Maimone, S., Nunes, K. L., Kostiuk, N., Babchishin, K. M., Malcom, J. R., Hermann, C. A., & Jung, S. (2015, June). Can sexual offender risk assessment instruments be accurately scored from self-report information alone? In K. L. Nunes (Chair) Examining Violent Behaviour with Virtual Reality, Self-Report, and Vignettes. Symposium conducted at the 3rd North American Correctional and Criminal Justice Psychology Conference, Ottawa, ON.
- Piquero, A. R., Schubert, C. A., & Brame, R. (2014). Comparing official and self-report records of offending across gender and race/ethnicity in a longitudinal study of serious youthful offenders. *Journal of Research in Crime and Delinquency*, *51*, 526-556. doi: 10.1177/0022427813520445
- Polaschek, D. L. L., & Ward, T. (2002). The implicit theories of potential rapists: What our questionnaires tell us. *Aggression and Violent Behavior*, *7*, 385-406. doi:10.1016/S1359-1789(01)00063-5
- Polluck, N. L. & Hashmall, J. M. (1991). The excuses of child molesters. *Behavioral Sciences and the Law*, *9*, 53-59.

- Prentky, R. A. & Knight, R. A. (1991). Identifying critical dimensions for discriminating among rapists. *Journal of Consulting and Clinical Psychology, 59*, 643-661.
- Qualtrics (2014). *Panel Book 2014*. Provo, Utah: Qualtrics Labs, Inc.
- Resick, P. A. (1993). The psychological impact of rape. *Journal of Interpersonal Violence, 8*, 223-255. doi: 10.1177/088626093008002005
- Russell, D. W. (2002). In search of underlying dimensions: The use and abuse of factor analysis in personality and social psychology bulletin. *Personality and Social Psychology Bulletin, 28*, 1629-1646. doi:10.1177/014616702237645
- Schmitt, T. A. (2011). Current methodological considerations in exploratory and confirmatory factor analysis. *Journal of Psychoeducational Assessment, 29*, 304-321.  
doi:10.1177/0734282911406653
- Scott, M. B., & Lyman, S. M. (1968). Accounts. *American Sociological Review, 33*, 46-62.
- Scully, D., & Moralla, J. (1984). Convicted rapists' vocabulary of motive: Excuses and justifications. *Social Problems, 31*, 530-544.
- Segal, Z. V. & Stermac, L. E. (1990). The role of cognition in rape. In W. L. Marshall, D. R. Laws & H. E. Barbaree (Eds), *Handbook of rape* (pp. 161-174). New York: Plenum.
- Seto, M. C. & Lalumiere, M. L. (2010). What is so special about male adolescent sexual offending? A review and test of explanations through meta-analysis. *Psychology Bulletin, 136*, 526-575.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson Education.
- Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson Education.

- Thompson, M. P., Koss, M. P., Kingree, J. B., Goree, J., & Rice, J. (2010). A prospective meditational model of sexual aggression among college men. *Journal of Interpersonal Violence, 26*, 2716-2734.
- Thornberry, T. P., & Krohn, M. D. (2000). The self-report method for measuring delinquency and crime. In D. Duffee, R. D. Crutchfield, S. Mastrofski, L. Mazerolle, D. McDowall, and B. Ostrom (Eds.), *Criminal Justice 2000: Innovations in Measurement and Analysis*. Washington, DC: National Institute of Justice.
- Uji, M., Shono, M., Shikai, N., & Kitamura, T. (2007). Rape myth scale: Factor structure and relationship with gender egalitarianism among Japanese professionals. *Psychiatry and Clinical Neurosciences, 61*, 392-400.
- Ward, T. (2000). Sexual offenders' cognitive distortions as implicit theories. *Aggression and Violent Behaviour, 5*, 491-507.
- Ward, T., & Beech, A. (2005). An integrated theory of sexual offending. *Aggression and Violent Behavior, 11*, 44-63.
- Ward, T., Gannon, T. A., & Keown, K. (2006). Beliefs, values, and action: The judgment model of cognitive distortions. *Aggression and Violent Behavior, 11*, 323-340.  
doi:10.1016/j.avb.2005.10.003
- Ward, T., Hudson, S. M., Johnston, L., & Marshall, W. L. (1997). Cognitive distortions in sex offenders: An integrative review. *Clinical Psychology Review, 17*, 479-507. doi:  
10.1016/S0272-7358(97)81034-3

- Ward, T., Keenan, T., & Hudson, S. M. (2000). Understanding cognitive, affective, and intimacy deficits in sexual offenders: A developmental perspective. *Aggression and Violent Behavior, 5*, 41-62.
- Wegner, R., Abbey, A., Pierce, J., Pegram, S. E., & Woerner, J. (2015). Rape perpetrators' justifications for their actions: Relationships to rape supportive attitudes, incident characteristics, and future perpetration. *Violence Against Women, 21*, 1-20.
- Weinrott, M. R., & Saylor, M. (1991). Self-report of crimes committed by sex offenders. *Journal of Interpersonal Violence, 6*, 286-300. doi: 10.1177/088626091006003002
- Widman, L., & Olson, M. (2013). On the relationship between automatic attitudes and self-reported sexual assault in men. *Archives of Sexual Behavior, 42*, 813-823. doi: 10.1007/s10508-012-9970-2
- Wothke, W. (1993). Nonpositive definite matrices in structural modeling. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 256-93). Newbury Park, CA: Sage.

## **Appendix A**

### **Recruitment Notice – Community Men**

Researchers at Carleton University WANT your help! We are conducting a survey to test our methods for conducting research online. You will be asked to complete some questionnaires about your demographic information, e-mail address, name, and some personal non-identifying information (e.g., relationship status, birth month, etc). This survey will take approximately 45 minutes to complete. Your responses to these questions will be confidential.

#### **Potential Negative Consequences to Participating:**

There are no negative consequences to participating in this study. The types of questions you will be asked are clearly identified in the consent form to permit you the opportunity to refuse to participate, skip any questions you do not wish to answer, or withdraw participation. If you do participate and become disturbed by the study, you will be directed to various sources of support in the debriefing form.

If you would like to participate, please click on the link below:

<http://www.carleton.ca/acbrlab/>

This study has received clearance by the Carleton University Psychology Research Ethics Board  
(Reference #11-xxx, insert your ethics reference number once obtained)

**Appendix B**  
**Demographic Questionnaire**

How old are you (years)?

What is your gender?

1. Male
2. Female
3. Other

What is your sexual orientation?

1. Heterosexual
2. Homosexual
3. Bisexual
4. Other

What race do you identify with? (White, Black, Asian, Aboriginal, East Indian, Hispanic/Latino, Arab, Other)

1. White
2. Black
3. Asian
4. Aboriginal
5. East Indian
6. Hispanic/Latino
7. Arab
8. Other

Do you understand written English?

1. Yes
2. No

Are you currently attending college or university? (yes/no)

1. Yes
2. No

What is your current relationship status?

1. Married
2. Single
3. Divorced/Separated
4. Living with partner
5. Other

**Appendix C**  
**Rape Myth Acceptance Scale (RMAS)**

**Original Response Scale:**

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

**Response Scale Presented to Participants In The Current Study:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<i><b>Strongly Disagree</b></i>			<i><b>Strongly Agree</b></i>

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Number	Item
1.	A woman who goes to the home or apartment of a man on their first date implies that she is willing to have sex.
2.	Any female can get raped.
3.	One reason that women falsely report a rape is that they frequently have a need to call attention to themselves.
4.	Any healthy woman can successfully resist a rapist if she really wants to.
5.	When women go around braless or wearing short shirts and tight tops, they are just asking for trouble.
6.	In the majority of rapes, the victim is promiscuous or has a bad reputation.
7.	If a girl engages in necking or petting and she lets things get out of hand, it is her own fault if her partner forces sex on her.
8.	Women who get raped while hitchhiking get what they deserve.
9.	A woman who is stuck-up and thinks she is too good to talk to guys on the street deserves to be taught a lesson.
10.	Many women have an unconscious wish to be raped, and may then unconsciously set up a situation in which they are likely to be attacked.
11.	If a woman gets drunk at a party and has intercourse with a man she's just met there, she should be considered "fair game" to other males at the party who want to have sex with her too, whether she wants it or not.

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## Appendix D

### The RAPE Scale

**Original Response Scale (also used in the current study):**

1	2	3	4
<i>Strongly Disagree</i>			<i>Strongly Agree</i>

Number	Item
1.	Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress.
2.	Women who get raped probably deserved it.
3.	Women generally want sex no matter how they can get it.
4.	Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex.
5.	If a woman does not resist strongly to sexual advances, she is probably willing to have sex.
6.	Women often falsely accuse men of rape.
7.	A lot of women who get raped had “bad reputations” in the first place.
8.	If women did not sleep around so much, they would be less likely to get raped.
9.	If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually.
10.	When women wear tight clothes, short skirts, and no bra or underwear, they are asking for sex.
11.	A lot of women claim they were raped just because they want attention.
12.	Victims of rape are usually a little bit to blame for what happens.
13.	If a man has sex with a woman before, then he should be able to have sex with her any time he wants.
14.	Just fantasizing about forcing someone to have sex isn’t all that bad since no one is really being hurt.
15.	Women who go to bars a lot are mainly looking to have sex.
16.	A lot of times when women say “no” they are just playing hard to get, and really mean “yes.”
17.	Part of a wife’s duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood.
18.	Often a woman reports rape long after the fact because she gets mad at the man she had sex with and is just trying to get back at him.
19.	As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad.
20.	When a woman gets raped more than once, she is probably doing something to cause it.
21.	Women who get raped will eventually forget about it and get on with their lives.

22. On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually.
  23. I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.
  24. When women act like they are too good for men, most men probably think about raping the women to put them in their place.
  25. I believe that society and the courts are too tough on rapists.
  26. Most women are sluts and get what they deserve.
  27. Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is.
  28. Generally, rape is not planned - a lot of times it just happens.
  29. If a person tells himself that he will never rape again, then he probably won't.
  30. A lot of men who rape do so because they are deprived of sex.
  31. The reason a lot of women say "no" to sex is because they don't want to seem loose.
  32. If a woman goes to the home of a man on the first date, she probably wants to have sex with him.
  33. Many women have a secret desire to be forced into having sex.
  34. Most of the men who rape have stronger sexual urges than other men.
  35. I believe that any woman can prevent herself from being raped if she really wants to.
  36. Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child.
-

## Appendix E

## Illinois Rape Myth Acceptance Scale (IRMAS)

## Original Response Scale:

1	2	3	4	5	6	7
<i>Strongly Disagree</i>						<i>Strongly Agree</i>

## Response Scale Presented to Participants In The Current Study:

1	2	3	4
<i>Strongly Disagree</i>			<i>Strongly Agree</i>

Subscale	Number	Item
SA*	1.	If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.
WI*	2.	Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."
MT	3.	When men rape, it is because of their strong desire for sex.
TE*	4.	If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.
LI	5.	Women who are caught having an illicit affair sometimes claim that it was rape.
FI	6.	Newspapers should not release the name of a rape victim to the public.
LI	7.	Many so-called rape victims are actually women who had sex and "changed their minds" afterwards.
WI*	8.	Many women secretly desire to be raped.
DE	9.	Rape mainly occurs on the "bad" side of town.
DE	10.	Usually, it is only women who do things like hang out in bars and sleep around that are raped.
FI*	11.	Most rapists are not caught by the police.
NR*	12.	If a woman doesn't physically fight back, you can't really say that it was rape.
DE*	13.	Men from nice middle-class homes almost never rape.
TE	14.	Rape isn't as big a problem as some feminists would like people to think.
SA	15.	When women go around wearing low-cut tops or short skirts, they're asking for trouble.
LI*	16.	Rape accusations are often used as a way of getting back at men.
NR	17.	A rape probably didn't happen if the woman has no bruises or marks.

- WI 18. Many women find being forced to have sex very arousing.
- SA 19. If a woman goes home with a man she doesn't know, it is her own fault if she is raped.
- MT 20. Rapists are usually sexually frustrated individuals.
- FI\* 21. All women should have access to self-defense classes.
- DE\* 22. It is usually only women who dress suggestively that are raped.
- WI 23. Some women prefer to have sex forced on them so they don't have to feel guilty about it.
- NR\* 24. If the rapist doesn't have a weapon, you really can't call it rape.
- SA 25. When a woman is a sexual tease, eventually she is going to get into trouble.
- TE 26. Being raped isn't as bad as being mugged and beaten.
- DE\* 27. Rape is unlikely to happen in the woman's own familiar neighborhood.
- DE 28. In reality, women are almost never raped by their boyfriends.
- TE\* 29. Women tend to exaggerate how much rape affects them.
- MT 30. When a man is very sexually aroused, he may not even realize that the woman is resisting.
- LI\* 31. A lot of women lead a man on and then they cry rape.
- FI\* 32. It is preferable that a female police officer conduct the questioning when a woman reports a rape.
- LI 33. A lot of times, women who claim they were raped just have emotional problems.
- NR 34. If a woman doesn't physically resist sex - even when protesting verbally - it really can't be considered rape.
- DE 35. Rape almost never happens in the woman's own home.
- SA\* 36. A woman who "teases" men deserves anything that might happen.
- SA\* 37. When women are raped, it's often because the way they said "no" was ambiguous.
- TE 38. If a woman isn't a virgin, then it shouldn't be a big deal if her date forces her to have sex.
- MT 39. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.
- FI 40. This society should devote more effort to preventing rape.
- SA\* 41. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.
- MT\* 42. Rape happens when a man's sex drive gets out of control.
- SA 43. A woman who goes to the home or apartment of a man on the first date is implying that she wants to have sex.
- WI 44. Many women actually enjoy sex after the guy uses a little force.
- NR 45. If a woman claims to have been raped but has no bruises or scrapes, she probably shouldn't be taken too seriously.

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*Note.* \* Indicates Illinois Rape Myth Acceptance-Short Form (IRMA-SF) items; SA = *She asked for it*; NR = *It wasn't really rape*; MT = *He didn't mean to*; WI = *She wanted it*; LI = *She lied*; TE = *Rape is a trivial event*; DE = *Rape is a deviant event*; FI = filler item (not scored).

**Appendix F****Sexual Experiences Survey-Tactics Version Revised (SES-TV-R)****Proclivity: Sexual Experiences Survey-Tactics Version Revised (P-SES-TV-R)****Instructions:****We are now going to ask you some questions about:**

- (a) your **past** experiences with different types of sexual behaviour (Never, Once, Twice, Three Times, Four Times, Five Times, Six Times, Seven Times, Eight Times, Nine Times or More), and
- (b) how **likely** you would be to do these different sexual behaviours in the future (Very Unlikely, Unlikely, Somewhat unlikely, Undecided, Somewhat likely, Likely, Very Likely)

**Please answer the following questions by choosing an answer from the drop down menus for each item.**

**In the questions below, by "woman" we mean any female 16 years old or older, or a female under 16 if she was less than 5 years younger than you at the time of the sexual contact (for example, you were 17 and she was 15).**

**SES-TV-R Response Scale**

How many times SINCE YOU WERE 16 years old...

0 = *Never* to 9 = *9 times or more*

**P-SES-TV-R Response Scale**

How **LIKELY** would you be to do the behaviour below?

1 = *Not at all likely* to 7 = *Very likely*

**SES-TV-R Behaviours and Tactics**

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*Have you made a woman believe—without actually saying it—that you would make something bad happen to her reputation, finances, employment, or relationships with people she cares about, in order to...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*Have you directly said to a woman that you would make something bad happen to her reputation, finances, employment, or relationships with people she cares about, in order to...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*Have you made it so a woman can't get away from you (for example, blocking the doorway, taking her keys, following her everywhere, not leaving her room), in order to...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*Have you scared a woman by yelling, swearing, or showing you were angry (for example, breaking stuff, punching the wall), in order to...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*When a woman was passed out from drugs or alcohol or too drunk or high to agree to/or stop what was happening, have you done the following...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*Have you given a woman drugs or pressured her to drink alcohol so that she passed out or got too drunk or high to agree to/or stop what was happening, in order to...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*Have you threatened to physically harm a woman or someone she cares about, in order to...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

**[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?]**

*Have you used physical force on a woman (for example, holding her down, pinning her arms, or using a weapon), in order to...*

1. Try to kiss, sexually touch, or make her have some sort of sex (oral, vaginal, or anal) with you when she didn't want to, but for some reason it didn't happen?
2. Kiss and/or sexually touch her when she didn't want to?
3. Make her have some sort of sex with you (oral, vaginal, or anal) when she didn't want to?
4. Take sexual pictures or videos of her when she didn't want to?

## **Appendix G**

### **Consent Form**

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A consent form tells you what you will be asked to do as a participant and allows you to make an informed decision about whether you would like to participate or not. Consent forms also list any potential negative effects of participation and tell you whom to contact if you have any questions or concerns that cannot be answered by the researcher after the study is completed.

**Present study:** Sexual Behaviours Survey 2015

**Research personnel:** This study is being conducted by Anna Pham (M.A. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261, AnhTPham@cmail.carleton.ca), under the supervision of Dr. Kevin Nunes (Associate Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; kevin.nunes@carleton.ca).

**Concerns:** If you have any questions or concerns about this study please contact Anna Pham or Kevin Nunes. If you have any ethical concerns about this research, please contact Dr. Shelley Brown (Chair, Carleton Research Ethics Board-B, shelley.brown@carleton.ca, 613-520-2600, ext. 1505) or the Carleton University Research Office at ethics@carleton.ca.

**Purpose:** The purpose of this study is to find out what men think about sexual assault and their past experiences with a range of sexual behaviours that can be aggressive or non-aggressive.

**Task requirements:** Participation in this study consists of one session of approximately 45 minutes. You will be asked to complete an online survey, which will consist of some questions about your opinions and experiences with non-aggressive and aggressive sexual behaviour with women. Your responses to these measures will be completely anonymous.

**Benefits/compensation:** You will receive \$2.00 for participating in this study.

**Potential risk/discomfort:** Because some of the questions ask about sexually aggressive behaviour, some people may find them offensive or embarrassing. You are free to skip questions and stop answering questions at any time, and exit the study **without penalty**. In other words, the \$2.00 will be granted to you for starting the survey, regardless of whether or not you answer all of the survey questions.

**Anonymity/confidentiality.** You will not be asked to provide any information that could be used to identify you or connect you with your survey responses; therefore, your answers will remain anonymous. In other words, no one will know how you responded to the survey. The information you provide will only be used for research and teaching purposes. A copy of the dataset will be kept for 10 years after the completion of the study.

The company through which we run this survey is called Qualtrics and it is located in the United States. Data will be collected using an anonymous link, meaning Qualtrics will not retain any identifying information about participants (e.g., Internet Protocol [IP] addresses). Although Qualtrics has access to IP addresses when participants submit their survey responses, the IP addresses are discarded and cannot be connected with survey responses. Qualtrics is subject to the United States Patriot Act, which is an anti-terrorism act that would allow law enforcement officials to seek a court order that would allow them to view the data collected. This means that if law enforcement were interested in the data collected in this survey they could possibly seek and obtain a court order, for anti-terrorism purposes, for the survey data. As noted above, the data are anonymous; thus, at most law enforcement would be able to see the responses given, but not link them to any one participant.

**Right to withdraw.** Your participation in this study is **entirely voluntary**. If at any point during the study you do not wish to continue, you have the right to skip questions, or to withdraw without penalty. In other words, the full \$2.00 will be granted to you for starting the survey, whether or not you answer all the questions or complete the survey. An option to withdraw from the survey will be presented at the bottom of each page of the survey. If you wish to withdraw at any point, select the withdraw option and the researchers will not use your data. However, note that it is not possible to withdraw your data after you have completed the survey because your

responses are anonymous and the researchers will not be able to identify which responses were yours.

This study has been approved by the Carleton University Research Ethics Board - B (16-073).

Click “I Agree” to indicate that you understand the information above and would like to participate in this study or “I Disagree” if you do not want to do the survey.

## **Appendix H**

### **Debriefing Form**

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*Thank you very much for participating in my study. Without your participation, this research would not have been possible. I hope the following information answers any questions and concerns you may have.*

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#### **What Are We Trying to Learn in this Research?**

In the measures you completed, everyone answers the same questions regarding their own thoughts about, and experiences with, sexual aggression. We are looking to see if there is a relationship between how men think about sexually aggressive behaviour and their experiences with sexual aggression.

#### **Why Is This Important to Scientists or the General Public?**

Sexual assault is a serious crime that results in many negative consequences for victims. To conduct high quality research on sexual assault we need to understand how our measures are related to one another and whether they measure similar or different aspects of sexual assault.

Research on sexual aggression is important because it helps us to understand why people engage in sexually aggressive behaviour. This kind of information can help to create more effective prevention and treatment programs for people who are sexually aggressive.

#### **What are our Hypotheses and Predictions?**

We expect the questionnaires to measure separate but related cognitions about sexual assault.

#### **Is There Anything I Can Do if I Found This Experiment to be Emotionally Draining?**

If you experience any distress (e.g., feeling sad or mad) as a result of this study, please seek help from one of the following resources as soon as possible:

**Canadian Resources:**

Carleton University Health and Counselling Services: 613-520-6674

Distress Centre of Ottawa and Region: 613-238-3311

Ottawa Police Service Victim Crisis Unit: 613- 236-1222, ext. 5822

Mental Health Crisis Service: (613) 722-6914; 1-866-996-0991

The Men's Project: 1-877-677-6532

List of a variety of resources: <http://www.carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

**What is sexual assault?**

Sexual assault usually involves verbal threats or physical force in order to carry out sexual acts or to get sexual pleasure. Forcing a woman to do sexual things, such as have sex, when she does not want to is a crime that causes serious problems for both the man and the woman. For the man, one of the main problems is going to prison. For the woman, some of the problems that are linked with being sexually assaulted are anxiety, depression, and relationship problems, not to mention worries about sexually transmitted infections and pregnancy. In sum, forcing sexual activity on a woman against her will not only hurts her, but can also hurt the man.

**Please follow the links below for more information about sexual violence, violence, and trauma from the American Psychological Association:**

<http://www.apa.org/topics/sexual-abuse/index.aspx>

<http://www.apa.org/topics/trauma/index.aspx>

<http://www.apa.org/topics/violence/>

**For more information about the negative effects of sexual assault, please follow the following link:**

<http://www.rainn.org/get-information/effects-of-sexual-assault>

**For more information about different types of sexual assault, please follow the following link:**

<http://www.rainn.org/get-information/types-of-sexual-assault>

**For further information about mental health please see:**

Canadian Mental Health Association: <http://www.cmha.ca/mental-health/>

### **Where Can I Learn More?**

Below is some information where you can learn more about rape cognition and sexually aggressive behaviour.

You can also visit our website that provides more information about who we are as researchers and some of our recent research: <http://www.carleton.ca/acbrlab/>

She asked for it: The impact of rape myths: <http://www.psychologytoday.com/blog/in-love-and-war/201211/she-asked-it-the-impact-rape-myths>

Common rape myths debunked: <http://www.wavaw.ca/mythbusting/rape-myths/>

Statistics on sexual assault in Canada:

<http://www.statcan.gc.ca/pub/85f0033m/2008019/hl-fs-eng.htm>

Information about sexual offenders: [http://www.csom.org/pubs/needtoknow\\_fs.pdf](http://www.csom.org/pubs/needtoknow_fs.pdf)

### **What if I Have Questions Later?**

The present study is being conducted by Anna Pham (M.A. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261) under the supervision of Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin\\_nunes@carleton.ca](mailto:kevin_nunes@carleton.ca)). If you have any questions or concerns about this study please contact Anna Pham or Kevin Nunes. If you are concerned about the ethics of this study, please contact Dr. Shelley Brown (Chair, Carleton Research Ethics Board-B, [shelley.brown@carleton.ca](mailto:shelley.brown@carleton.ca), 613-520-2600, ext. 1505) or the Carleton University Research Office at [ethics@carleton.ca](mailto:ethics@carleton.ca).

This study has been approved by the Carleton University Research Ethics Board - B (16-073).

Thank you very much for making this research possible

**Appendix I****Quality Control Questions to Identify Non-Accurate Responders**

1. Please respond to this question by selecting Strongly agree.
2. Please respond to this question by selecting Disagree.
3. Please respond to this question by selecting Agree.
4. Please respond to by selecting “Seven times” from the dropdown list.

## Appendix J

**Rotated Factor Loadings and Standardized Rotated Loadings for the Rape Myth  
Acceptance Scale (RMAS)**

Item	Rotated Factor Loading (Standardized Rotated Factor Loading) Factor 1
1. A woman who goes to the home or apartment of a man on their first date implies that she is willing to have sex.	<b>.73 (20.70)</b>
2. Any female can get raped.	<b>-.50 (-9.87)</b>
3. One reason that women falsely report a rape is that they frequently have a need to call attention to themselves.	<b>.59 (13.17)</b>
4. Any healthy woman can successfully resist a rapist if she really wants to.	<b>.78 (24.44)</b>
5. When women go around braless or wearing short shirts and tight tops, they are just asking for trouble.	<b>.74 (20.61)</b>
6. In the majority of rapes, the victim is promiscuous or has a bad reputation.	<b>.81 (29.65)</b>
7. If a girl engages in necking or petting and she lets things get out of hand, it is her own fault if her partner forces sex on her.	<b>.88 (40.96)</b>
8. Women who get raped while hitchhiking get what they deserve.	<b>.84 (30.05)</b>
9. A woman who is stuck-up and thinks she is too good to talk to guys on the street deserves to be taught a lesson.	<b>.84 (27.65)</b>
10. Many women have an unconscious wish to be raped, and may then unconsciously set up a situation in which they are likely to be attacked.	<b>.84 (32.27)</b>
11. If a woman gets drunk at a party and has intercourse with a man she's just met there, she should be considered "fair game" to other males at the party who want to have sex with her too, whether she wants it or not.	<b>.84 (30.15)</b>

*Note.* For the standardized score, the critical z-score was 2.84,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ).

## Appendix K

## Rotated Factor Loadings and Standardized Rotated Loadings for the RAPE Scale

## A 2-Factor Model

Item	Rotated Factor Loading (Standardized Rotated Factor Loading)	
	Factor 1	Factor 2
1. Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress.	<b>.69 (16.26)</b>	.06 (0.83)
2. Women who get raped probably deserved it.	<b>.76 (9.21)</b>	<b>.45 (6.43)</b>
3. Women generally want sex no matter how they can get it.	<b>.80 (27.69)</b>	-.02 (-0.32)
4. Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex.	<b>.76 (13.49)</b>	.36 (4.06)
5. If a woman does not resist strongly to sexual advances, she is probably willing to have sex.	<b>.74 (22.54)</b>	.00 (0.06)
6. Women often falsely accuse men of rape.	<b>.65 (10.09)</b>	<b>-.34 (-5.18)</b>
7. A lot of women who get raped had “bad reputations” in the first place.	<b>.74 (11.22)</b>	<b>.31 (4.89)</b>
8. If women did not sleep around so much, they would be less likely to get raped.	<b>.78 (14.45)</b>	<b>.26 (4.29)</b>
9. If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually.	<b>.79 (25.32)</b>	.00 (-0.06)
10. When women wear tight clothes, short skirts, and no bra or underwear, they are asking for sex.	<b>.78 (19.65)</b>	.16 (2.66)
11. A lot of women claim they were raped just because they want attention.	<b>.76 (20.36)</b>	-.13 (-1.85)
13. If a man has sex with a woman before, then he should be able to have sex with her any time he wants.	<b>.77 (13.45)</b>	<b>.29 (4.81)</b>
14. Just fantasizing about forcing someone to have sex isn't all that bad since no one is really being hurt.	<b>.46 (8.43)</b>	-.04 (-0.42)
15. Women who go to bars a lot are mainly looking to have sex.	<b>.72 (20.41)</b>	.00 (-0.08)
16. A lot of times when women say “no” they are just playing hard to get, and really mean “yes.”	<b>.78 (21.14)</b>	-.14 (-2.20)
17. Part of a wife's duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood.	<b>.74 (15.66)</b>	.18 (3.00)
18. Often a woman reports rape long after the fact because she gets mad at the man she had sex with and is just trying to get back at him.	<b>.75 (13.53)</b>	<b>-.31 (-4.98)</b>
19. As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad.	<b>.85 (20.28)</b>	.19 (2.77)

20. When a woman gets raped more than once, she is probably doing something to cause it.	<b>.81 (26.70)</b>	.04 (0.59)
21. Women who get raped will eventually forget about it and get on with their lives.	<b>.75 (23.10)</b>	-.06 (-0.85)
22. On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually.	<b>.80 (15.88)</b>	<b>.25 (4.15)</b>
23. I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.	<b>.83 (32.70)</b>	-.04 (-0.72)
24. When women act like they are too good for men, most men probably think about raping the women to put them in their place.	<b>.72 (14.79)</b>	.14 (1.80)
25. I believe that society and the courts are too tough on rapists.	<b>.70 (14.11)</b>	.12 (1.80)
26. Most women are sluts and get what they deserve.	<b>.77 (15.68)</b>	.14 (2.10)
27. Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is.	<b>.78 (23.62)</b>	-.13 (-1.90)
28. Generally, rape is not planned - a lot of times it just happens.	<b>.46 (6.31)</b>	<b>-.33 (-4.27)</b>
29. If a person tells himself that he will never rape again, then he probably won't.	<b>.64 (13.68)</b>	.00 (-0.04)
30. A lot of men who rape do so because they are deprived of sex.	<b>.66 (14.72)</b>	-.13 (-1.85)
31. The reason a lot of women say "no" to sex is because they don't want to seem loose.	<b>.70 (18.35)</b>	-.13 (-1.62)
32. If a woman goes to the home of a man on the first date, she probably wants to have sex with him.	<b>.71 (19.05)</b>	-.04 (-0.57)
33. Many women have a secret desire to be forced into having sex.	<b>.83 (31.28)</b>	-.08 (-1.03)
34. Most of the men who rape have stronger sexual urges than other men.	<b>.68 (15.35)</b>	-.12 (-1.72)
35. I believe that any woman can prevent herself from being raped if she really wants to.	<b>.71 (21.44)</b>	-.02 (-0.25)
36. Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child.	<b>.72 (17.55)</b>	.16 (1.96)

*Note.* For the standardized score, the critical z-score was 2.98,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ).

**A 1-Factor Model**

Item	Rotated Factor Loading (Standardized Rotated Factor Loading) Factor 1
1. Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress.	<b>.70 (17.49)</b>
2. Women who get raped probably deserved it.	<b>.84 (17.82)</b>
3. Women generally want sex no matter how they can get it.	<b>.79 (26.84)</b>
4. Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex.	<b>.80 (25.88)</b>
5. If a woman does not resist strongly to sexual advances, she is probably willing to have sex.	<b>.74 (23.36)</b>
6. Women often falsely accuse men of rape.	<b>.60 (13.87)</b>
7. A lot of women who get raped had “bad reputations” in the first place.	<b>.79 (26.10)</b>
8. If women did not sleep around so much, they would be less likely to get raped.	<b>.82 (31.36)</b>
9. If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually.	<b>.78 (25.64)</b>
10. When women wear tight clothes, short skirts, and no bra or underwear, they are asking for sex.	<b>.80 (29.77)</b>
11. A lot of women claim they were raped just because they want attention.	<b>.74 (22.46)</b>
13. If a man has sex with a woman before, then he should be able to have sex with her any time he wants.	<b>.82 (29.67)</b>
14. Just fantasizing about forcing someone to have sex isn't all that bad since no one is really being hurt.	<b>.45 (8.41)</b>
15. Women who go to bars a lot are mainly looking to have sex.	<b>.71 (19.88)</b>
16. A lot of times when women say “no” they are just playing hard to get, and really mean “yes.”	<b>.76 (24.18)</b>
17. Part of a wife's duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood.	<b>.77 (24.55)</b>
18. Often a woman reports rape long after the fact because she gets mad at the man she had sex with and is just trying to get back at him.	<b>.70 (18.71)</b>
19. As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad.	<b>.87 (35.47)</b>
20. When a woman gets raped more than once, she is probably doing something to cause it.	<b>.81 (29.33)</b>
21. Women who get raped will eventually forget about it and get on with their lives.	<b>.74 (21.56)</b>
22. On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in	<b>.84 (33.60)</b>

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return sexually.	
23. I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.	<b>.82 (31.74)</b>
24. When women act like they are too good for men, most men probably think about raping the women to put them in their place.	<b>.73 (20.34)</b>
25. I believe that society and the courts are too tough on rapists.	<b>.71 (17.32)</b>
26. Most women are sluts and get what they deserve.	<b>.79 (20.59)</b>
27. Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is.	<b>.76 (24.15)</b>
28. Generally, rape is not planned - a lot of times it just happens.	<b>.41 (7.13)</b>
29. If a person tells himself that he will never rape again, then he probably won't.	<b>.64 (13.59)</b>
30. A lot of men who rape do so because they are deprived of sex.	<b>.64 (15.10)</b>
31. The reason a lot of women say "no" to sex is because they don't want to seem loose.	<b>.68 (19.10)</b>
32. If a woman goes to the home of a man on the first date, she probably wants to have sex with him.	<b>.70 (19.59)</b>
33. Many women have a secret desire to be forced into having sex.	<b>.82 (30.22)</b>
34. Most of the men who rape have stronger sexual urges than other men.	<b>.66 (15.85)</b>
35. I believe that any woman can prevent herself from being raped if she really wants to.	<b>.71 (20.66)</b>
36. Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child.	<b>.75 (23.51)</b>

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*Note.* For the standardized score, the critical z-score was 3.38,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ).

## Appendix L

**Rotated Factor Loadings and Standardized Rotated Loadings for the Illinois Rape Myth  
Acceptance Scale (IRMAS)**

## A 2-Factor Model

Item	Rotated Factor Loading (Standardized Rotated Factor Loading)	
	Factor 1	Factor 2
1. If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.	<b>.67 (10.39)</b>	.13 (1.95)
2. Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."	<b>.64 (10.26)</b>	.21 (3.06)
3. When men rape, it is because of their strong desire for sex.	.00 (-0.01)	<b>.86 (32.45)</b>
4. If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.	<b>.74 (14.52)</b>	.02 (0.33)
5. Women who are caught having an illicit affair sometimes claim that it was rape.	<b>.36 (3.76)</b>	.32 (3.34)
7. Many so-called rape victims are actually women who had sex and "changed their minds" afterwards.	<b>.53 (7.44)</b>	<b>.29 (4.16)</b>
8. Many women secretly desire to be raped.	<b>.61 (8.18)</b>	.19 (2.29)
9. Rape mainly occurs on the "bad" side of town.	<b>.76 (12.04)</b>	.07 (0.84)
10. Usually, it is only women who do things like hang out in bars and sleep around that are raped.	<b>.75 (10.57)</b>	.06 (0.72)
12. If a woman doesn't physically fight back, you can't really say that it was rape.	<b>.89 (19.97)</b>	-.05 (-0.90)
13. Men from nice middle-class homes almost never rape.	<b>.77 (17.96)</b>	-.01 (-0.25)
14. Rape isn't as big a problem as some feminists would like people to think.	<b>.83 (15.34)</b>	-.11 (-1.63)
15. When women go around wearing low-cut tops or short skirts, they're asking for trouble.	<b>.61 (8.94)</b>	<b>.27 (3.46)</b>
16. Rape accusations are often used as a way of getting back at men.	<b>.34 (4.31)</b>	<b>.43 (5.42)</b>
17. A rape probably didn't happen if the woman has no bruises or marks.	<b>.81 (13.43)</b>	.02 (0.26)
18. Many women find being forced to have sex very arousing.	<b>.49 (6.59)</b>	<b>.33 (4.16)</b>
19. If a woman goes home with a man she doesn't know, it is her own fault if she is raped.	<b>.78 (11.33)</b>	.03 (0.37)
20. Rapists are usually sexually frustrated individuals.	.02 (0.25)	<b>.73 (11.74)</b>
22. It is usually only women who dress suggestively that	<b>.69 (10.34)</b>	.17 (2.02)

are raped.		
23. Some women prefer to have sex forced on them so they don't have to feel guilty about it.	<b>.68 (11.29)</b>	.21 (2.30)
24. If the rapist doesn't have a weapon, you really can't call it rape.	<b>1.02 (20.45)</b>	-.22 (-3.04)
25. When a woman is a sexual tease, eventually she is going to get into trouble.	<b>.31 (3.57)</b>	<b>.40 (4.55)</b>
26. Being raped isn't as bad as being mugged and beaten.	<b>.96 (21.26)</b>	<b>-.22 (-3.68)</b>
27. Rape is unlikely to happen in the woman's own familiar neighborhood.	<b>.74 (11.30)</b>	.06 (0.68)
28. In reality, women are almost never raped by their boyfriends.	<b>.72 (12.19)</b>	-.03 (-0.40)
29. Women tend to exaggerate how much rape affects them.	<b>.90 (19.70)</b>	-.08 (-1.41)
30. When a man is very sexually aroused, he may not even realize that the woman is resisting.	<b>.42 (5.12)</b>	<b>.40 (4.95)</b>
31. A lot of women lead a man on and then they cry rape.	<b>.47 (6.53)</b>	<b>.35 (4.68)</b>
33. A lot of times, women who claim they were raped just have emotional problems.	<b>.52 (7.65)</b>	<b>.34 (4.87)</b>
34. If a woman doesn't physically resist sex - even when protesting verbally - it really can't be considered rape.	<b>.77 (15.59)</b>	.01 (0.22)
35. Rape almost never happens in the woman's own home.	<b>.79 (15.50)</b>	-.06 (-0.92)
36. A woman who "teases" men deserves anything that might happen.	<b>.78 (14.57)</b>	.10 (1.56)
37. When women are raped, it's often because the way they said "no" was ambiguous.	<b>.70 (11.70)</b>	.17 (2.53)
38. If a woman isn't a virgin, then it shouldn't be a big deal if her date forces her to have sex.	<b>.97 (19.25)</b>	-.21 (-2.78)
39. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.	<b>.36 (4.22)</b>	<b>.44 (5.39)</b>
41. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.	<b>.60 (8.12)</b>	<b>.27 (3.53)</b>
42. Rape happens when a man's sex drive gets out of control.	.03 (0.35)	<b>.78 (11.20)</b>
43. A woman who goes to the home or apartment of a man on the first date is implying that she wants to have sex.	<b>.61 (8.87)</b>	.18 (2.25)
44. Many women actually enjoy sex after the guy uses a little force.	<b>.49 (6.03)</b>	<b>.35 (3.98)</b>
45. If a woman claims to have been raped but has no bruises or scrapes, she probably shouldn't be taken too seriously.	<b>.87 (16.31)</b>	-.07 (-0.94)

*Note.* For the standardized score, the critical z-score was 3.41,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ).

**A 1-Factor Model**

Item	Rotated Factor Loading (Standardized Rotated Factor Loading) Factor 1
1. If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.	<b>.76 (24.70)</b>
2. Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."	<b>.79 (29.05)</b>
3. When men rape, it is because of their strong desire for sex.	<b>.69 (18.29)</b>
4. If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.	<b>.79 (28.29)</b>
5. Women who are caught having an illicit affair sometimes claim that it was rape.	<b>.60 (14.41)</b>
7. Many so-called rape victims are actually women who had sex and "changed their minds" afterwards.	<b>.74 (22.77)</b>
8. Many women secretly desire to be raped.	<b>.75 (22.10)</b>
9. Rape mainly occurs on the "bad" side of town.	<b>.81 (29.57)</b>
10. Usually, it is only women who do things like hang out in bars and sleep around that are raped.	<b>.78 (25.67)</b>
12. If a woman doesn't physically fight back, you can't really say that it was rape.	<b>.84 (36.64)</b>
13. Men from nice middle-class homes almost never rape.	<b>.75 (21.30)</b>
14. Rape isn't as big a problem as some feminists would like people to think.	<b>.74 (21.65)</b>
15. When women go around wearing low-cut tops or short skirts, they're asking for trouble.	<b>.81 (30.40)</b>
16. Rape accusations are often used as a way of getting back at men.	<b>.66 (17.34)</b>
17. A rape probably didn't happen if the woman has no bruises or marks.	<b>.82 (30.45)</b>
18. Many women find being forced to have sex very arousing.	<b>.74 (22.38)</b>
19. If a woman goes home with a man she doesn't know, it is her own fault if she is raped.	<b>.80 (29.71)</b>
20. Rapists are usually sexually frustrated individuals.	<b>.61 (14.34)</b>
22. It is usually only women who dress suggestively that are raped.	<b>.81 (32.50)</b>
23. Some women prefer to have sex forced on them so they don't have to feel guilty about it.	<b>.82 (32.53)</b>
24. If the rapist doesn't have a weapon, you really can't call it rape.	<b>.86 (31.12)</b>
25. When a woman is a sexual tease, eventually she is going to get into trouble.	<b>.62 (15.46)</b>
26. Being raped isn't as bad as being mugged and beaten.	<b>.79 (25.13)</b>

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27. Rape is unlikely to happen in the woman's own familiar neighborhood.	<b>.77 (21.98)</b>
28. In reality, women are almost never raped by their boyfriends.	<b>.69 (19.43)</b>
29. Women tend to exaggerate how much rape affects them.	<b>.83 (32.39)</b>
30. When a man is very sexually aroused, he may not even realize that the woman is resisting.	<b>.72 (21.03)</b>
31. A lot of women lead a man on and then they cry rape.	<b>.73 (21.67)</b>
33. A lot of times, women who claim they were raped just have emotional problems.	<b>.77 (26.67)</b>
34. If a woman doesn't physically resist sex - even when protesting verbally - it really can't be considered rape.	<b>.77 (23.99)</b>
35. Rape almost never happens in the woman's own home.	<b>.74 (22.81)</b>
36. A woman who "teases" men deserves anything that might happen.	<b>.84 (36.58)</b>
37. When women are raped, it's often because the way they said "no" was ambiguous.	<b>.82 (32.33)</b>
38. If a woman isn't a virgin, then it shouldn't be a big deal if her date forces her to have sex.	<b>.81 (22.97)</b>
39. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.	<b>.69 (19.73)</b>
41. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.	<b>.81 (30.22)</b>
42. Rape happens when a man's sex drive gets out of control.	<b>.66 (16.98)</b>
43. A woman who goes to the home or apartment of a man on the first date is implying that she wants to have sex.	<b>.73 (22.45)</b>
44. Many women actually enjoy sex after the guy uses a little force.	<b>.75 (25.89)</b>
45. If a woman claims to have been raped but has no bruises or scrapes, she probably shouldn't be taken too seriously.	<b>.81 (29.21)</b>

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*Note.* For the standardized score, the critical z-score was 3.23,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ).

## Appendix M

**Rotated Factor Loadings and Standardized Rotated Loadings for the Illinois Rape Myth  
Acceptance – Short Form (IRMA-SF)**

Item	Rotated Factor Loading (Standardized Rotated Factor Loading) Factor 1
1. If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.	<b>.78 (26.53)</b>
2. Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."	<b>.78 (27.36)</b>
4. If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.	<b>.78 (25.77)</b>
8. Many women secretly desire to be raped.	<b>.75 (22.40)</b>
12. If a woman doesn't physically fight back, you can't really say that it was rape.	<b>.87 (42.80)</b>
13. Men from nice middle-class homes almost never rape.	<b>.76 (21.87)</b>
16. Rape accusations are often used as a way of getting back at men.	<b>.65 (15.40)</b>
22. It is usually only women who dress suggestively that are raped.	<b>.77 (26.02)</b>
24. If the rapist doesn't have a weapon, you really can't call it rape.	<b>.83 (27.14)</b>
27. Rape is unlikely to happen in the woman's own familiar neighborhood.	<b>.77 (21.43)</b>
29. Women tend to exaggerate how much rape affects them.	<b>.84 (31.89)</b>
31. A lot of women lead a man on and then they cry rape.	<b>.71 (19.40)</b>
36. A woman who "teases" men deserves anything that might happen.	<b>.85 (35.54)</b>
37. When women are raped, it's often because the way they said "no" was ambiguous.	<b>.83 (34.03)</b>
39. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.	<b>.69 (19.64)</b>
41. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.	<b>.81 (30.04)</b>
42. Rape happens when a man's sex drive gets out of control.	<b>.63 (14.80)</b>

*Note.* For the standardized score, the critical z-score was 3.35,  $\alpha = 0.0002$ . Bolded values indicated significant loading on the factor ( $p < .0002$ ).