

The Relationship Between Attitudes, Peer Norms, and Sexual Aggression

by

Kristen White

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Abstract

The current study investigated the relationship between attitudes towards sexual aggression, perceived peer norms about sexual aggression and sexually aggressive behaviour. Most of the past research on attitudes towards sexual aggression has used a broad definition of attitudes that does not seem to assess evaluation. Additionally, few studies have examined the combined role of evaluative attitudes and perceived peer norms in sexually aggressive behaviour. The current study found that attitudes, but not peer norms, were consistently associated with sexually aggressive behaviour. Attitudes also mediated the relationship between peer norms and sexual aggression. Lastly, the relationship between attitudes and past sexual aggression depended on norms, and participants with both highly positive attitudes and peer norms about sexual aggression reported the highest levels of sexually aggressive behaviour. These results extend previous research and provide important information regarding the relationship between attitudes, peer norms, and sexual aggression.

Keywords: attitudes, rape, norms, sexual aggression, sexually aggressive behaviour, male college students

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The Relationship Between Attitudes, Perceived Peer Norms, and Sexual Aggression

Sexual assault on college and university campuses is a growing concern as sexual assault can have a devastating impact on victims, potential victims, and the community. Twenty-five thousand five hundred and forty three sexual assaults were reported to Canadian police in 2013 (Boyce, Cotter, & Perreault, 2013). Young women between the ages of 18 and 24 are one of the most at risk groups for sexual assault victimization (Brennan & Taylor-Butts, 2008; Gidycz, et al., 2001), and most will be victimized by someone they know (Paul, Gray, Elhai, & Davis, 2009; Sinha, 2013). Additionally, most perpetrators of sexual assault are men (Sinha, 2013). In an attempt to understand why men engage in sexual aggression, research has focused on identifying the risk factors associated with sexually aggressive behaviour.

Attitudes are often a focus of research on sexual aggression because of their theoretical role in influencing behaviour. Attitudes are most commonly defined as the psychological evaluation (i.e., degree of favor or disfavor) of a particular person, thing, or behaviour (e.g., Azjen, 2001; Eagly & Chaiken, 1993; 2007; Fazio, 2007), and according to Fishbein and Azjen (1975) the “evaluative or affective consistency is what distinguishes between attitude and other concepts” (p. 8). Many theories suggest that attitudes can have a causal influence on behaviour (e.g., theory of planned behaviour, Azjen, 1991; 2001), and meta-analyses have shown that attitudes can be important predictors of behaviour ($r = .52$, 95% CI [.49 to .54], $N = 4,598$; Glasman & Albarracín, 2006; $r = .38$, $k = 88$; Kraus, 1995). In theories of sexual aggression, attitudes are also considered important risk factors for sexually aggressive behaviour (e.g., the hierarchical confluence model, Malamuth, 1986), and empirical research has shown that men with

more negative attitudes towards rape are less likely to report past involvement in sexually aggressive behaviour than men with more positive attitudes towards rape (Bouffard, 2002; Nunes, Hermann, & Ratcliffe, 2013; O'Donohue, McKay, & Schewe, 1996; Nunes, Hermann, White, Pettersen, & Bumby, 2015). Additionally, many prevention programs identify problematic attitudes as important targets for treatment (Gidycz, Orchowski, & Berkowitz, 2011; Vladutiu, Martin, & Macy, 2011).

Although research has provided some evidence for the role of attitudes in sexual aggression, there is inconsistency in how attitudes towards rape are defined in the sexual aggression literature. Recently, Nunes and colleagues have argued that there is a discrepancy in how the term *attitude* is defined in social and forensic psychology (Nunes, Hermann, Maimone, & Woods, 2014; Nunes et al., 2013; Nunes, et al., 2015). In social psychology a cognitive construct must involve some level of evaluation to be considered an attitude. However, in forensic psychology the term attitude is rarely explicitly defined, and the term is often used to refer to a wide range of beliefs that are certainly relevant to crime, but are not limited to evaluations. Studies using these broad definitions of attitudes have provided meaningful information about the cognitions that are associated with sexually aggressive behaviour. However, clearer and more precise definitions of the attitude construct, as it is defined in social psychology, may be helpful in further understanding the role of attitudes in sexually aggressive behaviour. Therefore, more research that specifically assesses how the evaluation of rape is related to sexual aggression is needed.

Perceived peer norms have also been theoretically linked to behaviour (e.g., theory of planned behaviour, Azjen, 1991; 2001). Peer norms refer to behaviour that is

considered normal and acceptable within a peer group and can also be defined as the perceived attitudes of one's peers (e.g., a perception that peers have a positive attitude towards a behaviour would indicate the behaviour is considered acceptable, Azjen, 1991; 2001). People tend to strive to behave in a way that is consistent with the norms of their peer group to avoid social sanctions, and this affects their likelihood of engaging in certain behaviours (Terry & Hogg, 1996; Terry, Hogg, & White, 1999). By this logic, if a man believes his friends do not approve of a behaviour (e.g., sexual aggression) he will be less likely to engage in that behaviour. Research conducted thus far suggests there may be a relationship between perceived peer norms and self-reported sexual aggression. However, the relationship between perceived peer norms and attitudes towards sexual aggression (i.e., evaluation of sexual aggression) has not been examined with a university student sample. Therefore, the current study aims to extend past research by investigating the relationship between attitudes towards sexual aggression, perceived peer norms about sexual aggression, and self-reported sexual aggression in male university students.

Theoretical Relationship Between Attitudes and Behaviour

Many theories and models propose that attitudes are important for explaining behaviour, and this is true for both general and criminal behavior (e.g., risks-needs responsibility model, Andrews & Bonta, 2010). One prominent theory explaining the relationship between attitudes and behaviour is Azjen's theory of planned behavior (TPB, Azjen, 1991; 2001). The theory of planned behaviour states that behaviour is a function of people's attitude towards the behaviour (e.g., how positively they view rape), their perception of the normative attitudes surrounding that behaviour (e.g., how positively they believe others view rape), and their perception of the degree of control they have

over performing the behaviour (e.g., how easy or difficult they expect committing a sexual assault would be). Azjen's concept of perceived behavioral control is very similar to the concept of self-efficacy pioneered by Bandura (1977). Self-efficacy refers to the belief that one can successfully execute a particular behaviour and therefore produce the desired and/or expected outcomes of that behaviour. According to Azjen, attitudes, perceived norms, and perceived behavioural control work together to form behavioural intention, and the stronger one's behavioural intention to engage in a behaviour (rather than abstain from that behaviour), the greater their likelihood of engaging in the corresponding behaviour (Azjen, 1991).

The Hierarchical Confluence Model and TPB

Malamuth's hierarchical confluence model (1986) describes two paths leading to sexual aggression in young men: the *antisocial/impersonal sex* path and the *hostile masculinity* path. Each path consists of a variety of risk factors, and as the number of risk factors increases so does the likelihood of sexual aggression. Additionally, risk factors from each pathway can interact with one another (e.g., sexual promiscuity can interact with hostile masculinity). Risk factors serve a variety of purposes: some are considered motivational (e.g., desire to sexually dominate women), some internal or external inhibitors (e.g., attitudes condoning sexual aggression), while others provide opportunity for sexual assault (e.g., sexual experience) (Malamuth, 1986). Although the hierarchical confluence model and the theory of planned behaviour differ substantially, both models emphasize the importance of cognitive and social factors in determining behaviour.

The risk factors along the *antisocial/impersonal sex* path include an abusive home environment, early delinquent behaviour, association with delinquent peers, antisocial

personality characteristics, and impersonal sexual activity. An abusive home environment where one is exposed to domestic violence or sexual and non-sexual abuse affects norms regarding the use of violence in interpersonal relationships, and stunts one's ability to effectively deal with frustration and disagreements, thereby increasing the likelihood of using coercive tactics to settle disputes (Malamuth, Sockloskie, Koss, & Tanaka, 1991). Abused children then develop relationships with delinquent peers. Association with delinquent peers results in the reinforcement of hostile cognitions (e.g., acceptance of violence against women) and leads to impersonal sexual activity through group norms that use sexual conquests as a way to gain status and self-esteem among peers (Malamuth et al., 1991; Ward, Polaschek, & Beech, 2006). Impersonal sexual activity then ultimately leads to sexual aggression, because men who place a high emphasis on sexuality and have limited interpersonal skills are likely to use coercive tactics to get women to engage in sexual acts (Malamuth et al., 1991).

The risk factors along the *hostile masculinity* path include an aggressive, hostile personality and an approach to sexuality that is characterized by coercive dominance (Ward et al., 2006). Within this pathway men may be exposed to domestic violence or child abuse in the home. Exposure to violence in the home can lead to hostile schema for male-female relationships. It may also lead to feelings of shame and/or inadequacy in relation to sex which can contribute to a need to control intimate partners. As in the antisocial/impersonal sex pathway men along the hostile masculinity path tend to begin associating with delinquent peers who serve to encourage hostile cognitions and schema for the world and women. These hostile cognitions interfere with skills such as managing frustration, delaying gratification, and negotiating disagreements (Malamuth, Heavy, &

Linz, 1996). The lack of problem solving and social skills that are characteristic of this path then increase the likelihood that men will become domineering and coercive when frustrated, especially with women. Men who follow this path hold sexist beliefs regarding sexual and non-sexual violence against women (i.e., acceptance of rape myths etc.), are sexually aroused by aggression, and have a desire to exert dominance and power in sexual interactions, which ultimately results in sexual aggression (Malamuth, Heavy, & Linz, 1996; Malamuth et al., 1991; Malamuth, 1986).

Overall, this theory suggests that men's risk for engaging in sexual aggression is affected by multiple risk factors. Although the hierarchical confluence model is more multifaceted than TPB, some of the factors are similar to those in TPB. Mainly, the idea that anti-social or hostile beliefs relevant to sexual aggression and an association with peers that reinforce these beliefs increase one's risk for sexual aggression is similar to Azjen's theory that people's attitudes towards a behaviour and their perception of their peers' attitudes towards the behaviour ultimately influence behavioural intention, which is the precursor to behaviour. Additionally, each of these models would suggest that multiple factors can interact to produce a higher likelihood of sexually aggressive behaviour. In sum, both the hierarchical confluence model and TPB consider personal cognitions and perceived peer cognitions (i.e., norms) important determinants of behaviour.

The Distinction Between Attitudes and Other Rape Supportive Cognitions

Many studies in the forensic psychology literature have investigated the role of cognitive processes in the initiation and maintenance of sexually aggressive behaviour. Although attitudes are one of the most popular cognitive constructs, a variety of others

are commonly used in sexual aggression research. Some of these other constructs include cognitive distortions, rape myths, and hostility towards women. Nunes et al., (2013; 2015) have questioned and explored the conceptualization and measurement of attitudes and other cognitions surrounding rape. The definitions below are a summary of their findings about the contrasting definitions of attitudes and other cognitive constructs in the various literatures they have explored. Although definitions for different cognitions regarding rape vary, some of the following definitions have been applied to these terms.

Attitudes have been defined as the evaluation of a psychological object; therefore an attitude towards rape would be an evaluation of rape (i.e., how good or bad is rape? e.g., Azjen, 2001; Eagly & Chaiken, 1993; Fazio, 2007). Cognitive distortions have been defined as thoughts and beliefs that are distorted or unrealistic in nature. In terms of sexual aggression, cognitive distortions are often thought to reflect the justifications and excuses used by sexual offenders to continue offending without feelings of guilt or remorse (e.g., believing rape is not that bad if you do not physically injure the victim; Maruna & Mann, 2006). Rape myths have been described as prejudiced, stereotyped, and false beliefs about rape, rape victims, and rapists (e.g., women provoke rape by the way they act or dress; Burt, 1980), while hostility towards women has been defined as a negative, mistrustful disposition towards women (Forbes, Curtis, & White, 2004; e.g., "I feel like many times women flirt with men just to tease or hurt them", Lonsway & Fitzgerald, 1995). Despite these definitions Nunes et al. (2013; 2015) suggest that in forensic psychology it is common for researchers to use measures of cognitive constructs that may assess something in addition to, or instead of, the particular construct they intend to assess. Additionally, many cognitive constructs do not seem to have one

consistent definition. They argue that this lack of consistency in the definition and measurement of cognitive constructs can cause problems because if the labels and definitions applied to different cognitive constructs are not consistent, then it is difficult, if not impossible, to know exactly what the corresponding measures for each construct are assessing (Gannon & Polaschek, 2006; Nunes et al., 2013; Nunes et al., 2015).

The rape related cognitions outlined above are typically measured using self-report scales that ask participants to indicate their level of agreement with statements like, "Many rapes happen because women lead men on" (Rape Myth Scale; Burt, 1980), and, "If a man has had sex with a woman before, then he should be able to have sex with her any time he wants" (RAPE scale; Bumby, 1996). Nunes et al. (2015) argue these statements may reflect rape myths or cognitive distortions, or even an attitude towards rape, though exactly what is being measured is unclear. If someone were to agree with one of the statements would this necessarily mean they have a positive attitude towards rape? Additionally, they propose that the ambiguity in these types of self-report measures makes it difficult to determine exactly what these scales are measuring. They have noted that definitional clarity and measurement precision are crucial to empirical research on these cognitions and their relationships with sexually aggressive behaviour because different cognitions may serve different roles in the offense process (e.g., cognitive distortions may occur post-offense to prevent feelings of guilt; [Maruna & Mann, 2006], whereas attitudes may facilitate sexually aggressive behaviour [Helmus, Hanson, Babschisin, & Mann, 2013]).

A recent study by my colleagues and I suggests that cognitive distortions may, in fact, be distinct from attitudes towards rape (Nunes et al., 2015). We conducted an

exploratory factor analysis on data obtained from 660 heterosexual male undergraduate students to determine whether items from the RAPE scale and a semantic differential scale assessing attitudes towards rape (i.e., evaluation of rape) formed distinct or overlapping factors. We found that items from the RAPE scale and the evaluation of rape scale loaded onto separate factors, suggesting these scales measure distinct constructs. Additionally, regression analyses revealed that both the RAPE scale and the evaluation of rape scale were independently associated with self-reported sexual aggression, and together their association with sexual aggression was significantly stronger than either alone. This evidence suggests that cognitive distortions and attitudes towards rape may be distinct cognitive constructs, and that together they could provide complementary information relevant to sexual aggression.

Empirical Relationship Between Attitudes and Sexual Aggression

Nunes and colleagues (2013; 2015) have argued that most of the existing literature on attitudes and sexual aggression use measures that may not assess evaluations. However, a small number of studies have measured attitudes towards rape more narrowly using self-reported expectations of the consequences (i.e., outcomes) of rape. The rationale behind this approach was outlined in a recent study by Nunes et al. (2013) and is based on Fishbein and Azjen's (1975) expectancy-value model of attitudes, which states that one's attitude towards a behaviour is based on the overall strength of one's evaluation of the outcomes expected to occur as a result of that behaviour: Thus, the more positive the outcome expectancies for a behaviour (i.e., rape), the more positive one's attitude towards that behaviour (Azjen & Fishbein, 1980; Fishbein & Azjen, 1975; Nunes, et al., 2013).

The first study to use this approach was conducted by O'Donohue et al. (1996). They examined the relationship between rape outcome expectancies, self-reported past sexually aggressive behaviour, and self-reported likelihood of future sexually aggressive behaviour with 167 male undergraduate students. Participants were asked to rate the probability that a variety of outcomes (e.g., feeling good, feeling guilty, etc.) listed by the researcher would occur as a direct result of raping a woman. They were then asked to rate the value of each of the outcomes. They found that less negative outcome expectancies for rape were significantly associated with past sexually aggressive behaviour ($r = -.36$) and future likelihood of sexually aggressive behaviour ($r = -.39$). Therefore, men who expected sexual aggression would result in less negative outcomes were more likely to engage in sexual aggression than men who expected sexual aggression would result in more negative outcomes. However, the outcomes of sexual aggression were not generated by participants and most of the outcomes listed were negative (e.g., contracting an STD). Thus, it is impossible to know whether the outcomes listed would have naturally occurred to participants or if the listed outcomes affected their responses.

Bouffard (2002) addressed this problem in his study examining outcome expectancies and sexual aggression with 129 male undergraduate students. Participants read a hypothetical date scenario and estimated their likelihood of engaging in five increasingly coercive sexual acts with the woman in the scenario. Afterwards, participants were asked to create a list of up to seven negative outcomes and up to seven positive outcomes for engaging in each sexually aggressive act. They were then instructed to provide a probability that each outcome would happen (i.e., certainty), indicate how bad it would be if a negative outcome happened (i.e., severity), and how

good it would be if a positive outcome happened (i.e., value). Lastly, they were asked how important each of the positive or negative outcomes was in making their decision (i.e., salience). The results indicated a significant relationship between the certainty ($r = -.25$), severity ($r = -.17$), and salience of negative outcomes ($r = -.21$) and self-reported likelihood of sexual aggression. In other words, a higher perception of the certainty, severity, and salience of negative outcomes for sexual aggression was associated with a lower self-reported likelihood of sexual aggression. Similar results were found for positive outcomes. There was a significant relationship between the value ($r = .21$) and salience ($r = .17$), but not certainty, of positive outcomes and self-reported likelihood of sexual aggression. Therefore, men who believed the outcomes of engaging in sexual aggression would be positive and important in their decision making process reported a greater likelihood of sexual aggression. These results suggest that both positive and negative outcome expectancies for sexual aggression are associated with one's self-reported likelihood of sexual aggression.

Nunes et al. (2013) extended the methodology from previous outcome expectancy studies by instructing male undergraduate students ($N = 86$) to list three possible outcomes of forcing a woman to have sex with them (i.e., rape). Participants then rated each of the self-generated outcomes on an evaluation scale ranging from -3 (*very negative*) to +3 (*very positive*). This approach was advantageous because it allowed the researchers to observe whether participants listed more positive or negative outcomes. The results revealed significant correlations between the evaluation of rape outcomes and both self-reported past ($r = .26$) and future likelihood ($r = .41$) of sexual aggression,

suggesting that more positive evaluations of the expected outcomes of rape are associated with more sexually aggressive behavior.

Lastly, the study by Nunes et al. (2015) investigated the relationship between attitudes towards rape and self-reported sexual aggression in 660 undergraduate students using semantic differential scales that did not assess outcome expectancies. Participants were simply asked to indicate their evaluation of rape along a seven item scale. For each item participants were asked to evaluate rape on a seven point Likert scale with different bipolar anchors (e.g., rape is 1 (*very negative*) to 7 (*very positive*); rape is 1 (*very not fun*) to 7 (*very fun*). Ratings for each of the seven items were then averaged to create one mean attitude towards rape score. Researchers found that participants' attitudes towards rape were significantly and positively related to their self-reported history of sexually aggressive behaviour ($r = .29$) and future likelihood of sexual aggression ($r = .34$). Taken together, the literature reviewed above supports the theoretical link between positive attitudes towards rape and/or sexual aggression and sexually aggressive behaviour.

The Peer Group

When joining a group new members often learn group norms through repeated interactions with other members (Kassin, Fein, & Markus, 2008). Once group norms are learned members tend to behave in ways that are consistent with the behavioral norms of the group (Terry et al., 1999), as going against group norms can result in ridicule or rejection by other group members (Aronson, Wilson, Akert, & Fehr, 2006). Many young men undergo this process as they join groups (e.g., sports teams, fraternities, etc.) during their first years in college (Schwartz & DeKeseredy, 1997).

DeKeseredy's Male Peer Support Model

DeKeseredy's male peer support model (1997) explains that a man's peer group can influence his likelihood of abusing his dating partner (sexually or non-sexually) through the advice they offer when he speaks to them about his dating problems (e.g., a woman willing to participate in sexual touching but not intercourse). The advice given can serve as a deterrent (e.g., suggesting he wait until the woman is ready for intercourse) or encouragement (e.g., suggesting he force the woman into sex) for abusive behaviour (Schwartz & DeKeseredy, 1997). The rationale for this model is that the opinions offered by friends serve as a foundation for norms regarding dating behaviour. If most of the man's friends suggest coercive or abusive solutions to his dating problems, he may begin to believe this is how most men react to similar situations, and consequently, that he should behave the same way. Additionally, peer approval of coercion and aggression in dating relationships communicates to men that such behaviours are not problematic or harmful. Furthermore, research has shown that college men who are sexually aggressive have stronger attachments to male peers who physically, sexually, and psychologically abuse their dating partners than men who are not sexually aggressive (DeKeseredy & Kelly, 1995; see Schwartz & DeKeseredy, 1997 for a review). Overall, this theory suggests that the advice peers offer may influence one's likelihood of engaging in sexually aggressive behaviour indirectly due to the effect this advice has on a person's own attitudes and beliefs about sexual aggression, which will ultimately guide one's behaviour.

Empirical Relationship Between Peer Norms and Behaviour

Peer Pressure and Approval of Criminal Behaviour

Peer pressure refers to the social influence the peer group (or certain individuals within the group) exert(s) over individual members to ensure they conform to the behavioural standards of the group. Peer pressure can include peer approval or encouragement of a given behaviour. In male peer groups, approval of sexual aggression can be communicated indirectly, through language, and jokes that sexually objectify women, or directly, through explicit encouragement of and reinforcement for sexually aggressive behaviour (e.g., congratulating a friend for getting a woman drunk for the purpose of obtaining sex, etc.; Schwartz & DeKeseredy, 1997).

Abbey et al. (2001) found that male college students who reported perpetrating sexual assault had significantly more friends who strongly approved of, and pressured them to, have forced sex than students who did not report perpetrating sexual assault. In addition, peer approval of and pressure to have forced sex was significantly associated with acceptance of verbal pressure to obtain sex ($r = .37$), suggesting a positive relationship between peer norms and personal beliefs about sexual aggression. A more recent study by Franklin, Bouffard, and Pratt (2012) also found that sexually aggressive male college students received significantly more support for sexually abusive behaviour from their peers, and more pressure to have sex than male college students who were not sexually aggressive (Franklin and colleagues' study did not include a measure of personal beliefs).

These results suggest that overall, approval of sexual aggression by one's peer group is associated with personal approval of, and risk of engaging in sexually aggressive

behaviour. Given these findings, one could question whether men with peer groups whose norms are consistent with their personal beliefs about a behaviour are more likely to engage in that behaviour. Megens and Weerman (2010) sought to answer this question by applying it to the study of adolescent delinquency. They too investigated the influence of peer pressure and approval, but also assessed peer participation in delinquent behavior. The design of their study was advantageous in that it involved a longitudinal follow-up in which personal beliefs and peer norms were assessed initially, and delinquent behaviour was assessed one year later. Thus, researchers could ensure that personal beliefs and peer norms preceded behaviour. At the one year follow-up adolescents with peer groups whose norms were consistent (i.e., matched) with their beliefs about delinquency exhibited behaviour that was significantly more consistent with their personal beliefs about delinquency than adolescents with peer groups whose norms were not consistent with their personal beliefs about delinquency.

The evidence seems to suggest that the influence of peer norms on delinquent behaviour may be strongest when peer norms reinforce one's personal beliefs regarding the behaviour in question. Regardless of the valence of the beliefs or norms (i.e., favoring or disfavoring delinquency), the consistency between one's personal beliefs and the norms of their peer group was associated with their subsequent behaviour. Such a finding is useful when considering prevention programs, as having personal beliefs and peer norms that disapprove of sexual aggression may serve as an excellent deterrent for sexually aggressive behaviour. However, these findings should be interpreted with caution considering the study was conducted on adolescents, and thus the results may not apply to young adults (i.e., the age of men in most studies using a college sample).

Additionally, participants were not randomized in this study therefore it is unknown whether personal beliefs or peer norms had any influence on behaviour and whether changing them would change behaviour. Furthermore, although it seems reasonable to believe a study regarding delinquency would apply to sexual offending, sexual offenses were not actually included in the measure of delinquency, so the degree to which these findings apply to sexual offenses is unknown.

Experimental Evidence for the Influence of Norms on Sexual Aggression

Norm manipulation studies allow researchers to determine whether presenting distorted social norms can *cause* an increase or decrease in one's self-reported likelihood of sexual aggression. Bohner, Siebler, and Schmelcher (2006) randomly assigned participants to either none, low, average, or high rape myth acceptance norms while completing a survey. Participants were told the underlined answers on the survey indicated the "average response" for male students that had completed the survey the year before. Afterwards, they answered questions about their rape myth acceptance and their rape proclivity. Norms were significantly and positively associated with self-reported RMA ($r = .46$), and were positively, but not significantly associated with rape proclivity, ($r = .19$; although the authors indicated this relationship was marginally significant at, $p = .08$). The authors conducted a hierarchical regression with norms in the first block and norms and personal rape myth acceptance in the second block. In the first block norms were marginally significantly associated with rape proclivity ($p = .08$). However, in the second block, when considered alongside personal rape myth acceptance, norms were no longer associated with rape proclivity suggesting the relationship between norms and rape proclivity was entirely mediated by personal rape myth acceptance. These results

suggest that norms affected personal beliefs about sexual aggression, which ultimately affected one's self-reported likelihood of engaging in sexually aggressive behaviour. Additionally, when compared to the no feedback norm condition, exposure to high rape myth acceptance norms seemed to result in a higher personal acceptance of rape myths ($r = .26$), and exposure to low rape myth acceptance norms seemed to result in lower personal acceptance of rape myths ($r = .19$).

In the second study, Bohner et al. (2006) presented norms after participants had already indicated their own rape myth acceptance, and before they indicated their rape proclivity. Norms, personal rape myth acceptance, and the interaction between norms and personal rape myth acceptance were significantly and positively associated with self-reported rape proclivity. Further inspection of the interaction indicated that the relationship between norms and self-reported rape proclivity depended on personal rape myth acceptance. More specifically, participants who had a high personal acceptance of rape myths reported the highest rape proclivity in every norm feedback condition, and rape proclivity peaked when these participants were exposed to norms that were also highly accepting of rape myths. Alternatively, men reporting the lowest personal acceptance of rape myths had the lowest level of rape proclivity in every norm feedback condition. Overall, rape proclivity increased as norm feedback conditions endorsed more rape myths and as participants indicated a higher personal acceptance of rape myths. These findings suggest a relationship between norms and rape proclivity that varies as a function of self-reported rape myth acceptance. The highest rape proclivities seem to occur when personal beliefs and norms are extremely supportive of rape (i.e., consistent),

and remains regardless of whether norms are presented before or after participants report their personal rape myth acceptance.

In another norm manipulation study Edwards and Vogel (2013) randomly assigned male participants to one of three norm manipulation conditions; pro-rape norms, neutral norms, or anti-rape norms. In the pro-rape norms condition participants were exposed to messages like, “Most men and women believe if a woman leads a man on, it’s ok for the man to become a bit stronger with her if she tries to duck out of sex at the last minute” (p. 4). In the neutral norms condition participants read messages like, “Most men and women agree using condoms is a smart thing to do to prevent STDs” (p. 4). While participants in the anti-rape norms condition saw messages like, “Most men and women believe if a date changes her mind at any time the right thing to do is stop and respect her wishes” (p. 4). Participants were told that they were evaluating TV and print advertisements. They then watched a brief video clip (without sound) of a young man and woman (strangers) sitting at a bus stop. After watching the video participants were asked to rate the female actor’s sexual intent towards the male actor and answered filler questions about the actors and the product (i.e., soda). Next, participants were told they would be evaluating print advertisements directed at college students to promote knowledge about sexual behaviour. They were then exposed to four posters corresponding to their assigned norm manipulation condition. After exposure to the posters participants answered some filler questions about the posters and read a sexual scenario between two acquaintances. Afterwards, they were asked how likely they would be to force the woman in the scenario into petting, oral sex, or vaginal intercourse if they

were in a situation like the one depicted in the sexual scenario. Previous experience perpetrating sexual aggression was also assessed.

Students exposed to pro-rape or neutral norms indicated a greater likelihood of being sexually aggressive than students in the anti-rape norm condition. Additionally, even when a history of self-reported sexually aggressive behaviour was controlled for there was a significant, positive association between exposure to pro-rape norms and intentions to engage in sexually aggressive behaviour. Overall, the available norm manipulation research suggests that normative beliefs that strongly endorse sexually aggressive behaviour can have a substantial effect on one's self-reported likelihood of sexual aggression, especially when present alongside other risk factors for sexual aggression (i.e., personal beliefs that condone rape).

Longitudinal Studies on Peer Norms and Sexual Aggression

Although norm manipulation studies provide some insight into the possible causal influence of norms on sexually aggressive behaviour, such studies may not capture the effect of interacting with peers one perceives as being highly accepting of sexual aggression over an extended period of time. Longitudinal studies can provide researchers with some insight into the direction of influence between peer norms and sexual aggression, while also assessing change in these constructs over time. Additionally, observational/non-experimental longitudinal studies can provide a more realistic reflection of norms than can usually be manipulated experimentally. This kind of information is useful in determining the effect of repeated interactions with friends who hold certain norms (i.e., positive or negative) about sexual aggression on behaviour.

Thompson, Koss, Kingree, Goree, and Rice (2011) longitudinally examined male undergraduate students in their first year of college to assess whether a variety of variables (including peer norms and a construct they labeled “attitudes”) both directly and indirectly predicted sexual aggression in their second year of college. Perceived peer norms were assessed similarly to previous studies (i.e., peer pressure and approval of forced sex). However, their measure of attitudes assessed one’s belief in what would typically be referred to as rape myths, and will hence be referred to as ‘rape myth acceptance’. They found that perceived peer norms and rape myth acceptance were significantly and positively associated with subsequent sexually aggressive behaviour. Furthermore, acceptance of rape myths mediated the relationship between perceived peer norms and sexual aggression, suggesting, much like the norm manipulation studies, the possibility that peer norms may exert a causal influence on personal beliefs about sexual aggression.

More recently Thompson, Swartout, and Koss (2013) conducted a longitudinal examination of male college students’ sexually aggressive behaviour throughout their entire undergraduate degree. Participants were initially assessed at the end of their first year of university and completed one assessment per year until their final year of university. The study investigated whether a variety of variables including hostile masculinity/rape myth acceptance, and peer norms at the first and last assessment period could predict membership in different sexual aggression trajectories. Peer norms were assessed by asking participants how much their current group of friends approved of and pressured them to engage in a variety of coercive tactics to obtain sex with women. The results showed four different trajectories of sexually aggressive behaviour. The first was

the *low to none trajectory* (most participants fit this trajectory) in which little to no sexually aggressive behaviour was reported across all four years of university. The second was the *increasing trajectory*, in this trajectory participants reported a low to moderate frequency of sexual aggression in first year that consistently increased, and was highest during their fourth year of university. The third trajectory was the *decreasing trajectory*, in this trajectory participants reported a high level of sexual aggression in first year that steadily declined across all subsequent years of university. Lastly, the fourth trajectory was the *high trajectory*; participants in this trajectory reported the highest level of sexual aggression in first year and every subsequent year of university compared to all other trajectories.

Researchers found that low levels of hostile masculinity/rape myth acceptance and peer norms that were not accepting of rape during men's first year of university predicted membership in the decreasing trajectory. High levels of hostile masculinity/rape myth acceptance and peer norms that were accepting of rape in men's fourth year of university predicted membership in the increasing trajectory. Additionally, a high level of hostile masculinity/rape myth acceptance and peer norms that were highly accepting of rape in men's first *and* fourth year of university predicted membership in the high trajectory. Overall, peer norms and personal beliefs about sexual aggression were significantly associated with undergraduate men's risk of engaging in sexual aggression.

In sum, the longitudinal studies that have explored the relationship between personal beliefs, peer norms and sexually aggressive behaviour suggest that both peer norms and beliefs about sexual aggression can be important predictors of sexually aggressive behaviour in male college students. However, research has not yet identified

whether attitudes towards rape would show the same relationship with peer norms and sexually aggressive behaviour as more general beliefs about rape (i.e., hostile masculinity and rape myth acceptance).

Attitudes, Peer Norms, and Sexual Aggression

This literature review has discussed much of the research on attitudes and peer norms separately due to a lack of studies investigating both constructs concurrently. To my knowledge only two studies have examined attitudes (defined as evaluations) and peer norms together. In the first study, Enosh (2007) conducted a cross-sectional investigation examining whether a variety of TPB variables, including attitudes and perceived peer attitudes, could explain both victimization and perpetration of sexual coercion in male and female Israeli high school students (only the results for male students will be reported here). The measure of attitudes used in this study included an evaluative component. Specifically, participants were asked how right or wrong it was to persist with sexual advances towards an unwilling partner. Perceived peer norms were measured by asking how their peers would evaluate the same statement. Perceived peer norms consistently emerged as a significant correlate of male sexual coercion perpetration, while attitudes were not significantly correlated with the perpetration of sexual coercion. These results suggest that perceived peer norms are significantly associated with male sexual coercion.

In a more recent study, Strang and Peterson (2013) assessed whether punishment certainty (i.e., the probability that sexual aggression will result in negative outcomes), and peer approval of sexual aggression were associated with self-reported verbal sexual coercion and/or rape with 120 community men. Men were asked to indicate on a scale

from 0 (*no chance*) to 10 (*definitely happen*) what they believed their chances were of receiving a variety of punishments listed by the researchers if they were to engage in both verbal sexual coercion and rape. Possible punishments ranged from “*friends and family lose respect for you*” to “*you get contacted by police or authorities*”. Peer approval of verbal sexual coercion and rape were assessed with two types of questions. In the first type of question men were asked how their ten closest male friends would perceive finding out that a man they knew had engaged in verbal sexual coercion or raped a woman (i.e., perceived peer attitude towards sexual aggression) on a scale from 0 (*very negatively*) to 10 (*very positively*). The second type of question asked men how many of their ten closest male friends they believed had engaged in verbal sexual coercion or raped a woman on a scale from 0 (*none of my closest ten friends*) to 10 (*all of my closest ten friends*).

They found that men who were less certain they would experience a negative outcome for engaging in verbal sexual coercion (i.e., had less negative or more positive attitudes towards verbal sexual coercion) were significantly more likely to report engaging in verbal sexual coercion ($r = -.28$). However, there was no significant association between negative outcome expectancies for rape and self-reported perpetration of rape. They also found a significant, positive correlation between young men’s perception of peer approval of verbal sexual coercion and their self-reported history of verbal coercion ($r = .73$). The same relationship was found for perceived peer approval of rape and self-reported history of rape ($r = .43$). In other words, men who perceived their friends as being accepting of verbal sexual coercion and/or rape also reported perpetrating these forms of sexual coercion. These results suggest that men’s

perception of their peers' acceptance of sexual aggression is related to their perpetration of both verbal coercion and rape, and partially support the association between attitudes towards sexual aggression and sexually aggressive behaviour.

Conclusion

Taken together, the results of the empirical studies reviewed above support the theoretical link between attitudes towards sexual aggression and sexually aggressive behaviour. Previous studies examining the relative contribution of attitudes and perceived peer norms to sexually aggressive behaviour have typically used a broad definition of attitudes that may not reflect evaluation. The current study will extend previous research by assessing the relationship between attitudes (measured as evaluations), peer norms, and sexual aggression. Furthermore, the potential interaction of attitudes and perceived peer norms and its relationship with sexually aggressive behaviour has not yet been investigated. Theory (i.e., the hierarchical confluence model; Malamuth, 1986) and research (i.e., Megens & Weerman, 2010) suggest the relationship between people's personal cognitions and their behaviour may depend on the norms they are exposed to regarding that behaviour. Therefore, the current research study will investigate whether norms moderate the relationship between attitudes and sexual aggression. Additionally, DeKeseredy's (1997) male peer support model suggests that the norms of one's peers effect one's personal beliefs about sexual aggression, which influence one's decision to engage in sexually aggressive behaviour. However, the potential mediating effect of attitudes in the relationship between norms and sexual aggression has yet to be examined. Therefore, the current study will also investigate whether attitudes mediate the relationship between norms and sexual aggression. Overall, the current study aimed to

further explore the relationship between peer norms and attitudes (i.e., evaluations) about sexually aggressive behaviour. This study represents a step towards a better understanding of the cross-sectional, correlational relationship between attitudes, peer norms, and sexual aggression.

Hypotheses

The following hypotheses were expected for the current study.

1. Attitudes towards sexual aggression will be associated with sexually aggressive behaviour.
2. Peer norms about sexual aggression will be associated with sexually aggressive behaviour.
3. Attitudes towards sexual aggression and perceived peer norms about sexual aggression will each be independently associated with sexual aggression (as assessed by hierarchical regression).
4. Attitudes towards sexual aggression and peer norms about sexual aggression will each explain incremental variance in sexual aggression (as indicated by a significant increase in R^2 when both constructs are included in the model).
5. Peer norms about sexual aggression will moderate the relationship between attitudes and sexual aggression.
6. Attitudes will mediate the relationship between peer norms and sexual aggression.

Methods

Participants. Participants were 197 male undergraduate students from Carleton University who reported a heterosexual orientation, and were able to understand written

English. The study was limited to heterosexual participants because the measures used to assess sexual aggression were specific to sexually aggressive behaviour perpetrated by men against women. Therefore, it was believed that including only heterosexual participants would minimize the possibility that alternative explanations (i.e., lack of experience/interest in sex with women) could account for the study findings. Participants were recruited through the SONA system (see recruiting announcement Appendix A). Participants received a 0.25% credit for participation in this survey. After missing data analyses were completed, and participants with missing data on the variables of interest were excluded the sample size was $N = 171$ (see missing data section below). For the final sample of 171 participants the median participant age category was 19 (28.1%, $n = 48$), the minimum was 17 (1.2%, $n = 2$) and the maximum was 30-39 (2.9%, $n = 5$). Additionally, the majority of participants were Caucasian (62.6%, $n = 107$), and most were either single (61.4%, $n = 105$) or in a romantic relationship (32.7%, $n = 56$). Approximately one quarter of participants (25.15%, $n = 43$) 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 (described below). Additionally, 35.09% ($n = 60$) of participants reported some likelihood of being sexually aggressive in the future as measured by the SES-TV-R likelihood of sexual aggression measure (described below). Only 2.3% ($n = 4$) participants reported some likelihood to rape, while 9.9% ($n = 17$) participants reported some likelihood to rape if they could be assured they would not be caught or punished.

Measures.

Demographic Questionnaire. The demographic questionnaire asked participants to provide information relevant to participation in the study (see Appendix B).

Sexual Experiences Survey-Tactics Version Revised (SES-TV; Abbey et al., 2005). The Sexual Experiences Survey (SES) is a widely used measure of sexual aggression (e.g., Abbey & McAuslan, 2004; Abbey, Wegner, Pierce, & Jacques-Tiura, 2012; DeGue, DiLillo & Scalora, 2010; Gidycz, Warkentin, & Orchowski, 2007; Greene & Davis, 2011; Widman, Olsen, & Bolen, 2013). The SES asks participants to 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), as well as whether they have ever used any aggressive tactics to perform each of the sexual acts (e.g., lies, guilt, drugs/alcohol, threats, and physical force).

The current study used a modified version of the Sexual Experiences Survey-Tactics Version (SES-TV). This version was more similar to another modified version by Hermann, Nunes, and Lorincz (2014) than the original SES-TV (Abbey et al., 2005). The modified version has a wider response scale ranging from 0 (*never*) to 9 (*nine times or more*). The response scale was modified by Hermann, Nunes, and Lorincz (2014) due to a concern that a narrow response scale may influence participant responses in a way that could lead to the underreporting of sexually aggressive behaviours. For instance, participants who have engaged in a sexually aggressive behaviour three or more times may feel uncomfortable reporting this on a scale where three is the highest response option, but may feel more comfortable if there is a wider range of response options, thereby making their response appear less extreme. Additionally, the modified version of

the SES-TV asks about acts of sexual aggression since age 16 rather than age 14. The age was changed because 16 is the legal age of consent for sexual activity in Canada.

The SES-TV was further modified for the current study (see Appendix C) by removing some of the more ambiguous tactics (i.e., verbally pressuring a woman) and adding some tactics that have not been previously assessed (e.g., making it so a woman could not leave). The SES-TV-R was scored using the separated outcomes and tactics scoring by Davis et al. (2014). Using this method each type of sexually aggressive outcome and tactic is assigned a different severity score. Severity scores increase as the type of sexual contact becomes more invasive and the tactic used to attain contact becomes more aggressive. For example, sexual contact achieved by verbal coercion is assigned a severity score of 1, while completed rape by physical force is assigned a severity score of 9 (Davis et al., 2014). Each severity score is then multiplied by its frequency and the products of the frequency X severity scores are summed resulting in one history of sexual aggression score for each participant. The internal consistency of the SES-TV-R was $\alpha = .86$ in the current study.

SES-TV-R Measure of Attitudes Towards Sexual Aggression. A modified version of the SES-TV-R was also adapted to assess attitudes towards sexual aggression (Hermann, et al., 2014). Participants were asked to evaluate each of the behaviour and tactic combinations on a 7-point Likert scale ranging from *very negative* to *very positive* (see Appendix C). An attitude towards sexual aggression score was calculated by averaging participant ratings for all behavior and tactic combinations. Items were not weighted for the SES-TV-R measure of attitudes towards sexual aggression. The internal

consistency of the SES-TV-R measure of attitudes towards sexual aggression was $\alpha = .91$ in the current study.

SES-TV-R Measure of Peer Norms About Sexual Aggression. The SES-TV-R was additionally adapted to assess peer norms about sexual aggression. Participants were asked to indicate how they believed their friends would evaluate the behaviour and tactic combinations within the SES-TV-R on the same Likert scale used for attitudes towards sexual aggression (see Appendix C). A peer norm score was calculated by averaging participant ratings for all behaviour and tactic combinations. Items were not weighted for the SES-TV-R measure of peer norms about sexual aggression. The internal consistency of the SES-TV-R measure of peer norms about sexual aggression was $\alpha = .91$ in the current study.

SES-TV-R Measure of Likelihood of Sexual Aggression. A modified version of the SES-TV-R was adapted to assess participant's likelihood of sexual aggression as well (Hermann, et al., 2014). For each SES-TV-R item participants were asked how likely they would be to engage in each of the behaviour and tactic combinations (see Appendix C). A likelihood of sexual aggression score was calculated by averaging participant ratings for all behaviour and tactic combinations. Items were not weighted for the SES-TV-R measure of likelihood of sexual aggression. The internal consistency of the SES-TV-R measure of likelihood of sexual aggression was $\alpha = .87$ in the current study.

Likelihood to Rape Questions (Berlant, 2012; Malamuth, 1981). Participants were asked the Likelihood to Rape (LR) question, which is a single question that asks participants to indicate their likelihood of raping a woman if they could be assured that they would not be caught or punished, with higher scores indicating a greater likelihood

to rape. Participants indicate their likelihood to rape along a 5-point Likert scale ranging from 1 (*not at all likely*) to 5 (*very likely*). The original LR was used along with a modified version (Berliant, 2012) that asked about one's likelihood to rape, but did not mention whether one would be assured of not being caught or punished (see Appendix D).

Procedure. Prior to launching the survey ethics approval was attained from Carleton University's Ethics Committee. Following this approval a recruitment notice was posted online in SONA describing the study and inviting eligible students to participate (see Appendix A). Interested students were provided a link to the online survey run through the Qualtrics survey tool. Survey responses were completely anonymous and could not be tracked to individual participants. Prior to participation all students were presented with a consent form outlining the possible risks and benefits of taking part in the study (see Appendix E). After agreeing to the consent form interested participants began the study. Afterwards, they were given instructions outlining how to proceed through the survey. The instructions reminded participants that they were free to skip any questions that may make them uncomfortable, and could stop the survey at any time without risk of penalty (i.e., losing the 0.25% credit). At the end of every survey page there was a “withdraw” button that, if clicked, would redirect participants to the debriefing form before exiting the survey (see Appendix F). Participants were asked to complete a demographics questionnaire (see Appendix B). Upon completion of the demographics questionnaire, participants were asked to complete each component of the modified SES-TV-R (i.e., history, future likelihood of sexual aggression, attitudes, and peer norms), and the LR 1 and 2, in a counterbalanced order. Non-accurate responder

questions were used to identify participants who were not paying attention to the assigned tasks and were simply clicking through the survey without reading the items. Non-accurate responder questions were randomly distributed throughout the survey (see Appendix G).

Results

Research questions and statistical analyses.

The research questions and statistical analyses for this study are outlined in the table below. The analyses are described in more detail when explaining the results.

Table 1

Student sample assessing attitudes towards sexual aggression, perceived peer norms about sexual aggression, and self-reported sexually aggressive behaviour

Research Question	Analysis
1. Are attitudes towards sexual aggression related to sexually aggressive behaviour?	Correlations
2. Are perceived peer norms about sexual aggression related to sexually aggressive behaviour?	Correlations
3. Are attitudes towards sexual aggression and perceived peer norms about sexual aggression each independently associated with self-reported sexually aggressive behaviour?	Hierarchical Multiple Regression
4. Do attitudes towards sexual aggression and perceived peer norms about sexual	Hierarchical Multiple Regression

aggression each account for incremental variance in sexually aggressive behaviour beyond what is accounted for by either variable alone?

5. Do peer norms moderate the relationship between attitudes and sexually aggressive behaviour?

Moderated Regression

6. Do attitudes mediate the relationship between peer norms and sexually aggressive behaviour?

Mediated Regression

Data screening. Data screening analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 22 for Windows. All a priori analyses were two-tailed and used an alpha of 0.5.

Missing data. Before missing data analyses were conducted participants who did not fulfil the inclusion criteria and participants who failed to answer non-accurate responder questions correctly were filtered out of the dataset. Therefore, participants who reported a sexual orientation other than heterosexual, female participants, participants who failed to answer all four non-accurate responder questions correctly, and participants who did not understand English were removed from the sample. Filtering out these participants resulted in $N = 197$. Of the 197 participants approximately 13% were missing data on at least one of the variables of interest (LR 1 = 0.5%, $n = 1$; LR 2 = 2 %, $n = 4$; SES-TV-R past total = 2.5%, $n = 5$; SES-TV-R likelihood of sexual aggression total = 5.1%, $n = 10$; SES-TV-R norms total = 4.1%, $n = 8$, SES-TV-R attitudes total = 4.1%, $n = 8$). T-tests were performed to examine whether participants missing data on each IV

scored differently on outcome measures (i.e., SES-TV-R past sexual aggression, SES-TV-R likelihood of sexual aggression and LR variables) compared to participants who were not missing data. None of these t-tests were significant. Additionally, Little's MCAR test was conducted resulting in a nonsignificant $p = 1.00$; therefore, it was concluded that the data were missing at random and listwise deletion was used on missing cases resulting in $N = 171$.

Outliers. Before analyses began all variable scores (i.e., LR 1 and LR 2 total scores, SES-TV-R past sexual aggression total score, SES-TV-R likelihood of sexual aggression total score, SES-TV-R attitudes total score, and SES-TV-R norms total score) were screened for univariate and multivariate outliers, as well as out of range values. Z-scores were created and inspected to determine whether any scores exceeded $+/- 3.29$. Any z-scores that exceeded this cut-off were modified to the next lowest or highest value of that variable.

Following the investigation of univariate outliers Mahalanobis distance values were examined to check for bivariate and multivariate outliers. Bivariate and multivariate outliers were identified for every possible combination of the variables of interest. Bivariate and multivariate outliers were identified and screened out of the dataset two times. Bivariate and multivariate outliers were still present following the second filter; however, they remained in the dataset. After filtering out bivariate outliers for correlation analyses 147 participants remained in the sample. Similarly, after filtering out multivariate outliers for linear regression analyses 147 participants remained in the sample. Bivariate, but not multivariate outliers were filtered out for LR variables as these

variables were analyzed using logistic regression analyses. This process will be discussed in more detail below.

Given that this study sought to investigate the role of attitudes and peer norms in sexually aggressive behaviour it may seem odd that participants who potentially reported the highest levels of sexually aggressive attitudes, norms, and behaviour (i.e., multivariate outliers) were screened out of the dataset. However, this study examined the cross-sectional correlational relationship between these variables and did not focus upon comparing participants who reported the highest vs. lowest levels of sexually aggressive behaviour. Therefore, the data obtained was intended to reflect the general relationship between attitudes, norms, and sexually aggressive behaviour for the sample. Including extreme cases in analyses for this data could produce results that reflect the few atypical cases rather than the general relationship between the constructs of interest that is observed in the data. Additionally, including extreme cases can produce results that cannot be replicated in future research (Cohen, Cohen, West, & Aiken, 2003). Therefore, although the results obtained may miss information that could have been provided by the outlier participants, screening out these participants increases the chances that the results produced are a true reflection of the relationship between variables in the sample and increase the chances that such findings could be replicated in the future (Cohen et al., 2003).

Normality. The normality of each variable was assessed using skew and kurtosis ratios. Variables were considered significantly skewed and/or kurtotic if their z-scores exceeded +/- 3.29. All variables were significantly skewed, kurtotic, and non-normal. Due to the severe skewness and kurtosis a log transformation was used on all variables

for linear regression analyses (i.e., SES-TV-R attitudes total score, SES-TV-R peer norms total score, SES-TV-R past sexual aggression total score, and SES-TV-R likelihood of sexual aggression total score). Subsequently normality assessments were conducted on the transformed variables. The transformation made the violations of normality *less* severe but all variables remained significantly skewed, kurtotic and non-normal. An inverse transformation was not attempted because this would change the direction of the data and confuse the interpretation of effects.

Regression assumptions were tested for both original and log transformed variables. Linearity and homoscedasticity between independent variables (i.e., SES-TV-R attitudes total score, SES-TV-R norms total score, and SES-TV-R past sexual aggression total score) and the outcomes (i.e., SES-TV-R past sexual aggression total score, SES-TV-R likelihood of sexual aggression total score, LR 1 and LR 2) were assessed using scatterplots of standardized residuals on the y-axis and standardized predicted values on the x-axis. Visual inspection of the scatterplots showed that the relationship between the predictors and the outcomes appeared linear for all the regressions, with the exception of scatterplots with LR variables as outcomes-which were not linear. Due to this violation of linearity and a lack of variability in responses on LR variables (i.e., most participants responded with 1 = no likelihood to rape) non-parametric statistics were used in analyses involving LR variables. Moreover, the error for each regression did not appear to have an even spread across all values of the predictor variables suggesting homoscedasticity was violated. The normality of residuals was examined with the use of histograms, P-P plots, and Q-Q plots of the standardized residuals for all regression analyses. All of these plots appeared normally distributed suggesting the assumption of normality of residuals was

satisfied. The violations of normality and homoscedasticity may have lowered the power to find significance in regression analyses.

Multicollinearity. All variables were also checked for multicollinearity with the use of collinearity diagnostics and the inspection of a correlation matrix. Guidelines regarding the size of correlations required to signal multicollinearity vary. Generally, correlation coefficients between $r = .8$ and $r = .9$ cause concern regarding multicollinearity (Field, 2013; Tabachnick, & Fidell, 2013). The correlation between attitudes and norms total scores were just below this cut off, $r(145) = .77, p < .001$. Collinearity diagnostics consisted of examining the variance inflation factor (VIF) values for attitudes and peer norms. The VIF value indicates the strength of the relationship between two predictors (Field, 2013). Some researchers suggest a VIF value of 10 suggests multicollinearity (Myers, 1990), while others suggest averaging VIF values and that if the average VIF value is greater than one this should prompt concern regarding multicollinearity (Bowerman & O'Connell, 1990). Collinearity diagnostics indicated that none of the variance inflation factor (VIF) values were over 10; however the average VIF was greater than 1, indicating some concern regarding multicollinearity. Overall, the correlation coefficient and collinearity diagnostics seemed to indicate multicollinearity may have been an issue and this may have decreased power in the regression analyses (Field, 2013).

Outliers logistic regression. Separate data screening and assumption checking was conducted for the two binary logistic regression analyses. For the first LR variable (i.e., how likely is it that you would commit rape?) dichotomous groups of participants who reported any likelihood to rape (received a score of 2 or more on the LR1 scale; $n =$

4) and participants who reported no likelihood to rape (received a score of 1 on the LR1 scale; $n = 167$) were created. For the 2nd LR variable (i.e., what is the likelihood that you would rape someone if you could be assured of not being caught or punished?) dichotomous groups of participants who reported any likelihood to rape (received a score of 2 or more on the LR 2 scale; $n = 17$) and participants who reported no likelihood to rape (received a score of 1 on the LR 2 scale; $n = 154$) were also created. Univariate outliers were examined for each predictor (e.g., SES-TV-R attitudes total score, SES-TV-R norms total score, and SES-TV-R past sexual aggression total score) of each dichotomous group using z-scores. Z-scores that exceeded +/- 3.29 were modified to the next lowest or highest value of that variable. Multivariate outliers were not screened for LR variables as this would leave too few participants in the groups who reported some likelihood to rape.

Linearity of the logit. Lastly, linearity of the logit was tested by examining whether interactions between each predictor and its natural log were significantly related to the dichotomous outcome (i.e., LR 1 or LR 2). None of the interactions between predictors and their natural logs were significant; therefore the assumption of linearity of the logit was satisfied.

Results of analyses.

Relationship between attitudes, peer norms and self-reported sexually aggressive behaviour. To test the relationship between attitudes towards sexual aggression, peer norms about sexual aggression and self-reported sexually aggressive behaviour, Pearson's correlations were conducted between the SES-TV-R attitude total score, the SES-TV-R peer norms total score, the SES-TV-R past sexual aggression total

score, the SES-TV-R likelihood of sexual aggression total score, the LR 1 total score, and the LR 2 total score. All correlations were conducted with the original variables and the log transformed variables. The pattern of results was the same so only the results from the original variables are reported. The results of these analyses are presented in Table 2.

As seen in Table 2, most of these correlations were significant with the exception of the correlation between peer norms and LR 1. Correlations between attitudes and the SES-TV-R past sexual aggression total score and SES-TV-R likelihood of sexual aggression total score were large, $r = .70$ and $r = .93$, respectively. Correlations between attitudes and the LR variables were small (LR 1, $r = .26$) to medium (LR 2, $r = .46$). Correlations between peer norms and the SES-TV-R past sexual aggression total score and SES-TV-R likelihood of sexual aggression total score were also large, $r = .60$ and $r = .73$, respectively. Additionally, correlations between peer norms and LR variables were small (LR 1, $r = .14$) to medium (LR 2, $r = .30$). Spearman's rho correlations were also conducted for LR variables because these variables violated the assumption of linearity. These correlations are presented in the bottom diagonal of table 2 and are bolded. All of the Spearman's rho correlations were also significant with the exception of the correlation between LR 1 (i.e., likelihood to rape) and peer norms $\rho(145) = .14, p = .09$.

Table 2

Pearson and Spearman's rho correlations and descriptive statistics for attitudes, norms, past sexual aggression, likelihood of sexual aggression, LR 1 and LR 2 total scores

Measure	1	2	3	4	5	6	M	SD
1. LR 1	-	.61*	.37*	.28*	.14	.26*	1.01	.12
2. LR 2	-	-	.45*	.54*	.30*	.46*	1.10	.37
3. Past SA	.25*	.31*	-	.77*	.60*	.70*	4.61	14.90
4. Likelihood of SA	.22*	.42*	-	-	.73*	.93*	1.05	.11
5. Peer Norms	.14	.22*	-	-	-	.77*	1.11	.18
6. Attitudes	.19*	.31*	-	-	-	-	1.05	.12

Note. N = 147. SA = Sexual aggression. LR 1 = Likelihood to rape. LR 2 = Likelihood to rape-no punishment. Spearman's rho correlations are **bolded**.

* $p < .001$

The relationship between attitudes, peer norms, and past sexual aggression. A series of hierarchical regression analyses were conducted in which the SES-TV-R attitudes total score, SES-TV-R peer norms total score, and the interaction between attitudes and peer norms were the predictor variables, and the SES-TV-R past sexual aggression total score was the dependent variable. The steps for the regression analyses alternated between having attitudes entered in Step 1 and peer norms in Step 1. Hierarchical regressions were conducted this way to test whether attitudes and peer norms each explained incremental variance in sexual aggression. Alternating which variable was entered first made it possible to examine whether adding either attitudes or peer norms to the model in Step 2 significantly increased the amount of variance explained in sexual aggression from the variance explained in Step 1. Therefore, these analyses made it possible to assess whether adding attitudes to the model improved the prediction of sexual aggression from what could be predicted from peer norms alone, and

whether adding peer norms to the model improved the prediction of sexual aggression from what could be predicted from attitudes alone. Given that the only difference between regressions is which variable was entered first there is undoubtedly some redundancy between analyses. Thus, only novel findings will be emphasized in the second analysis for each pair.

In the first hierarchical regression attitudes towards sexual aggression was entered in Step 1, peer norms about sexual aggression was entered in Step 2, and the interaction term between attitudes and peer norms was entered in Step 3. All predictors were centered before they were entered into the analysis. The SES-TV-R attitudes total score was entered in Step 1 to determine whether peer norms explained incremental variance in past sexually aggressive behaviour. The results of this analysis showed that attitudes were significantly and positively associated with past sexually aggressive behaviour in Step 1. Attitudes were also significantly and positively associated with past sexual aggression in Step 2; however, peer norms were positively but not significantly associated with past sexual aggression. Peer norms also failed to explain incremental variance in past sexual aggression (indicated by a non-significant increase in R^2). The interaction between attitudes and peer norms was significant. These analyses were conducted with the original variables and the log transformed variables. The pattern of results was the same so only the results from the original variables are reported. The statistics from the full model are presented in Table 3.

Table 3

Hierarchical Regression Predicting Past Sexually Aggressive Behaviour from Attitudes, Peer Norms, and Attitudes X Peer Norms

Predictor	R	R ²	Adjusted R ²	ΔR ²	B	B SE	β
Step 1	.70	.48	.48	.48*			
Attitudes					88.18*	7.58	.70
Step 2	.70	.49	.49	.01			
Attitudes					72.16*	11.83	.57
Peer Norms					13.65	7.78	.16
Step 3	.76	.57	.57	.08*			
Attitudes					26.68*	13.98	.21
Peer Norms					9.37	7.21	.11
Attitudes					119.34*	22.98	.49
X Norms							

Note. N = 147. Predictors and interactions terms are centered.

*p < .01

Another regression analysis predicting past sexually aggressive behaviour was then conducted with peer norms about sexual aggression entered in Step 1, attitudes towards sexual aggression entered in Step 2, and the interaction term between attitudes and peer norms entered in Step 3. This analysis made it possible to examine whether attitudes added incremental variance to the prediction of past sexual aggression. These analyses showed the same pattern as the first. However, when attitudes were entered in Step 2 they accounted for incremental variance in past sexual aggression (indicated by a significant increase in R²). Therefore, adding attitudes to the model significantly increased the variance explained by the model. These analyses were conducted with the original variables and the log transformed variables. The pattern of results was the same

so only the original variables are reported. The statistics for the model (excluding the interaction) are presented in Table 4.

Table 4

Hierarchical Regression Predicting Past Sexually Aggressive Behaviour from Peer Norms and Attitudes

Predictor	R	R ²	Adjusted R ²	ΔR ²	B	B SE	β
Step 1	.60	.36	.36	.36*			
Peer Norms					50.26*	5.53	.60
Step 2	.70	.49	.49	.13*			
Peer Norms					13.65	7.78	.16
Attitudes					72.16*	11.83	.57

Note. N = 147. Predictors are centered.

* $p < .01$

The significant interaction effect was further explored with simple slopes analysis. Simple slopes for the association between attitudes and past sexually aggressive behaviour were tested for low (i.e., total score that was the *least* supportive of sexual aggression), average (i.e., the average total score), and high (i.e., total score that was the *most* supportive of sexual aggression) levels of norms about sexual aggression. The only significant simple slope was the slope for the association between attitudes and past sexually aggressive behaviour at high levels of norms (i.e., norms that were the most approving of sexual aggression), $b = 130.50$, $SE_b = 24.40$, $p = 0.00$. Figure 1 displays this relationship below. The effect suggests the association between attitudes and past sexual aggression is stronger when norms are highly supportive of sexual aggression.

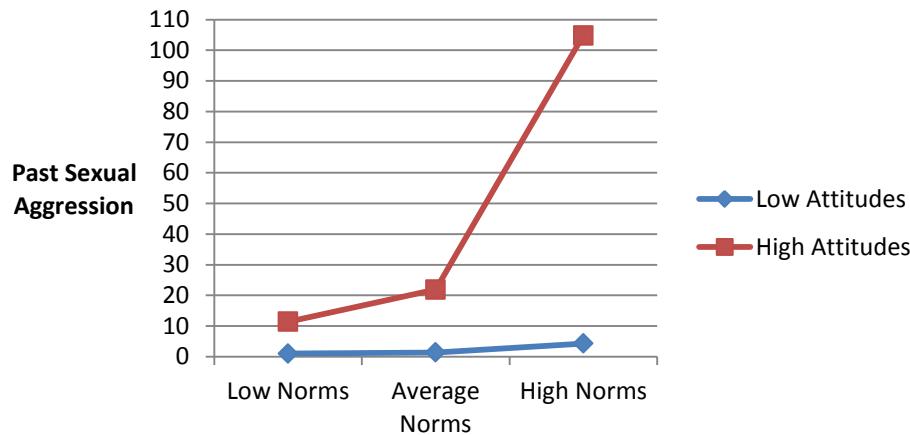


Figure 1. Simple slopes analysis showing the relationship between attitudes and past sexually aggressive behaviour with norms as a moderator.

The relationship between past sexual aggression, attitudes, peer norms, and likelihood of sexual aggression. A series of hierarchical regressions were conducted to examine the relationship between past sexual aggression, attitudes, peer norms, the interaction between attitudes and peer norms and likelihood of sexual aggression (i.e., SES-TV-R likelihood of sexual aggression total score). In the first hierarchical regression past sexually aggressive behaviour was controlled for and entered in Step 1. Attitudes towards sexual aggression were entered in Step 2, and peer norms about sexual aggression were entered in Step 3. Lastly, the interaction term between attitudes and peer norms was entered in Step 4. This analysis made it possible to examine the relationship between attitudes, peer norms, and likelihood of sexual aggression while controlling for past sexually aggressive behaviour. This approach also allowed the examination of whether peer norms accounted for incremental variance in likelihood of sexual aggression. In Step 1 past sexual aggression was positively and significantly associated with likelihood of sexual aggression. In Step 2, past sexual aggression and attitudes were both positively and significantly associated with likelihood of sexual aggression. In Step

3, past sexual aggression and attitudes remained significantly and positively associated with likelihood of sexual aggression, however, peer norms were negatively and non-significantly associated with likelihood of sexual aggression. Additionally, peer norms did not account for any incremental variance in likelihood of sexual aggression (indicated by a non-significant R^2 in Step 3). Lastly, the interaction between attitudes and peer norms was not significant. The statistics for the full model can be found in Table 5.

Table 5

Hierarchical Regression Predicting Sexual Experiences Survey Likelihood of Sexual Aggression from Past Sexual Aggression, Attitudes, Peer Norms and Attitudes X Peer Norms

Predictor	R	R ²	Adjusted R ²	ΔR ²	B	B SE	β
Step 1	.77	.59	.59	.59*			
Past SA					.01*	.00	.77
Step 2	.95	.90	.90	.31*			
Past SA					.00*	.00	.24
Attitudes					.69*	.03	.77
Step 3	.95	.90	.90	.00			
Past SA					.00*	.00	.24
Attitudes					.69*	.04	.77
Peer Norms					-.00	.02	-.01
Step 4	.95	.90	.90	.00			
Past SA					.00*	.00	.23
Attitudes					.68*	.05	.76
Peer Norms					-.01	.03	-.01
Attitudes X					.04	.09	.02
Peer Norms							

Note. N = 147. SA = Sexual aggression. Attitudes and Peer Norms are centered.

* $p < .01$

In the second hierarchical regression past sexual aggression was controlled for and entered into Step 1, peer norms were entered in Step 2, attitudes were entered in Step 3, and the interaction between attitudes and peer norms was entered in Step 4. This analysis made it possible to examine whether attitudes explained incremental variance in likelihood of sexual aggression. The pattern of results was the same for this set of analyses. However, in this model attitudes explained incremental variance in sexual aggression (indicated by a significant increase in R^2 in Step 3). These analyses were conducted with the original variables and the log transformed variables. The pattern of results was the same so only the results from the original variables are reported. The statistics for the model (excluding the interaction) can be found in Table 6.

Table 6

Hierarchical Regression Predicting Sexual Experiences Survey Likelihood of Sexual Aggression from Past Sexual Aggression, Peer Norms and Attitudes

Predictor	R	R^2	Adjusted R^2	ΔR^2	B	B SE	β
Step 1	.77	.59	.59	.59*			
Past SA					.01*	.00	.77
Step 2	.84	.71	.71	.11*			
Past SA					.00*	.00	.52
Peer Norms					.25*	.03	.42
Step 3	.95	.90	.90	.19*			
Past SA					.00*	.00	.24
Peer Norms					-.00	.02	-.01
Attitudes					.69*	.04	.77

Note. N = 147. SA = Sexual aggression. Attitudes and Peer Norms are centered.

* $p < .01$

Mediation analyses for attitudes and peer norms predicting past sexual aggression. All mediation analyses were conducted using PROCESS software in SPSS (Hayes, 2012) to directly test indirect/mediation effects using bootstrapped confidence intervals. Attitudes were tested as a possible mediator in the relationship between peer norms and past sexual aggression. All mediation analyses were run for the log transformed and untransformed variables. The pattern of results was consistent regardless of transformation, therefore only the results for the untransformed variables are reported here. There was a significant indirect effect of peer norms on past sexually aggressive behaviour through attitudes, $b = 36.62$, BCa CI [7.28, 69.60]. This represents a relatively large effect, $k^2 = 0.35$, 95% BCa CI [0.08, 0.57]. These results suggest attitudes significantly mediate the relationship between peer norms and past sexual aggression. The bootstrapped regression coefficients and standard errors for the mediation paths are displayed in figure 2.

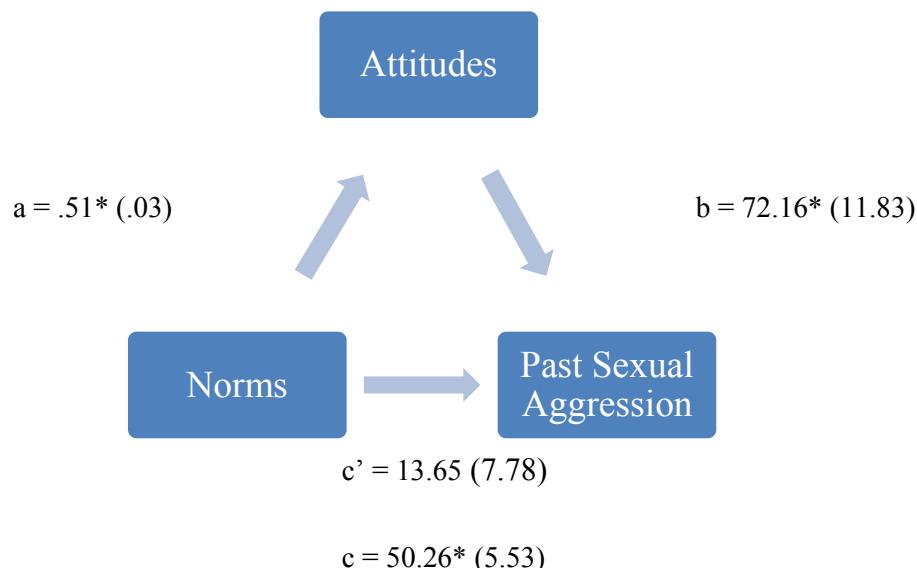


Figure 2. Bootstrapped coefficients and standard errors for mediation analyses showing the indirect relationship between norms and past sexual aggression.

Mediation analyses for attitudes and peer norms predicting likelihood of sexual aggression. Attitudes were also tested as a possible mediator in the relationship between peer norms and future likelihood of sexual aggression. In these analyses past sexual aggression was included as a covariate. A significant indirect effect was found for peer norms on likelihood of sexual aggression through attitudes, $b = 0.25$, BCa CI [0.15, 0.36]. Therefore, the results suggested that attitudes significantly mediate the relationship between peer norms and likelihood of sexual aggression. The bootstrapped regression coefficients and standard errors for the mediation paths are displayed in figure 3.

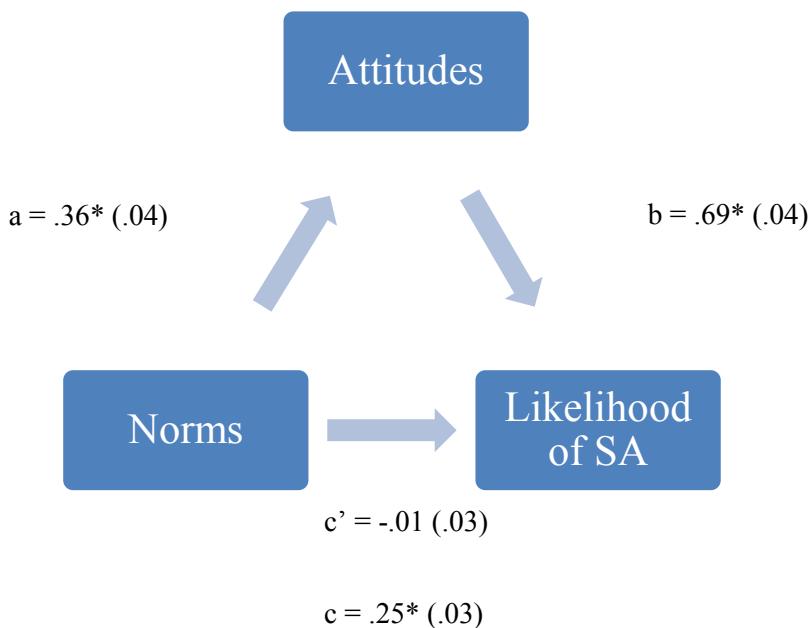


Figure 3. Bootstrapped coefficients and standard errors for mediation analyses showing the indirect relationship between norms and likelihood of sexual aggression (controlling for past sexual aggression).

The relationship between past sexual aggression, attitudes, peer norms and likelihood to rape. For logistic regression analyses LR variables were dichotomized so that scores of 1 (not at all likely to rape) became 0, and scores of 2 or more (any

likelihood to rape) became 1. Although hierarchical regression analyses were planned for the LR variables a lack of symmetry between groups (i.e., no likelihood to rape vs. any likelihood to rape) made such analyses a poor fit for the current study. Most participants belonged to the no likelihood to rape group for each LR variable, thus it did not make sense to examine covariates, mediation effects and interactions in a hierarchical regression model. It was therefore decided to simplify the analyses by conducting a series of single-predictor binary logistic regression analyses rather than hierarchical regression analyses.

The relationship between past sexual aggression and likelihood to rape. A single-predictor binary logistic regression was conducted to examine whether past sexual aggression (i.e., SES-TV-R past sexual aggression total score) could distinguish between people who reported no likelihood to rape from people who reported any likelihood to rape (i.e., 0 vs. 1 for LR 1 total score). Past sexually aggressive behaviour could not distinguish between people who reported no ($n = 167, M = 19.86, SD = 67.14$) vs. any likelihood to rape ($n = 4, M = 82.50, SD = 105.78$), $\chi^2(1, N = 171) = 1.89, p = 1.70$, odds ratio (OR) = 1.01, 95% CI [.99, 1.01], $R^2 = 2.36$ (Hosmer & Lemeshow), 0.01 (Cox & Snell), 0.06 (Nagelkerke).

A single-predictor binary logistic regression was also conducted to examine whether past sexual aggression (i.e., SES-TV-R past sexual aggression total score) could distinguish between people who reported no likelihood to rape from people who reported any likelihood to rape if assured of not being caught or punished (i.e., 0 vs. 1 for LR 2 total score). Past sexually aggressive behaviour could distinguish between people who reported no ($n = 154, M = 17.42, SD = 62.27$) vs. any likelihood to rape if assured of not

being caught or punished ($n = 17, M = 106.53, SD = 251.98$), $\chi^2(1, N = 171) = 7.01, p = 0.01$, odds ratio (OR) = 1.01, 95% CI [1.00, 1.01], $R^2 = 2.47$ (Hosmer & Lemeshow), 0.04 (Cox & Snell), 0.08 (Nagelkerke).

The relationship between attitudes and likelihood to rape. A single-predictor binary logistic regression was conducted to examine whether attitudes towards sexual aggression (i.e., SES-TV-R attitude total score) could distinguish between people who reported no likelihood to rape from people who reported any likelihood to rape (i.e., 0 vs. 1 for LR 1 total score). Attitudes towards sexual aggression could distinguish between people who reported no ($n = 167, M = 1.15, SD = 0.37$) vs. any likelihood to rape ($n = 4, M = 1.66, SD = 0.43$), $\chi^2(1, N = 171) = 3.82, p = 0.05$, odds ratio (OR) = 4.99, 95% CI [1.21, 20.57], $R^2 = 4.88$ (Hosmer & Lemeshow), 0.02 (Cox & Snell), 0.11 (Nagelkerke).

A single-predictor binary logistic regression was also conducted to examine whether attitudes towards sexual aggression (i.e., SES-TV-R attitude total score) could distinguish between people who reported no likelihood to rape from people who reported any likelihood to rape if assured of not being caught or punished (i.e., 0 vs. 1 for LR 2 total score). Attitudes towards sexual aggression could distinguish between people who reported no ($n = 154, M = 1.11, SD = 0.28$) vs. any likelihood to rape if assured of not being caught or punished ($n = 17, M = 1.75, SD = 1.04$), $\chi^2(1, N = 171) = 17.84, p = 0.00$, odds ratio (OR) = 6.26, 95% CI [2.26, 17.37], $R^2 = 6.32$ (Hosmer & Lemeshow), 0.10 (Cox & Snell), 0.21(Nagelkerke).

The relationship between peer norms and likelihood to rape. A single-predictor binary logistic regression was conducted to examine whether norms about sexual aggression (i.e., SES-TV-R norm total score) could distinguish between people who

reported no likelihood to rape from people who reported any likelihood to rape (i.e., 0 vs. 1 for LR 1 total score). Peer norms about sexual aggression could not distinguish between people who reported no ($n = 167, M = 1.27, SD = 0.53$) vs. any likelihood to rape ($n = 4, M = 1.63, SD = 0.40$), $\chi^2(1, N = 171) = 1.20, p = 0.27$, odds ratio (OR) = 2.15, 95% CI [.64, 7.29], $R^2 = 9.21$ (Hosmer & Lemeshow), 0.01 (Cox & Snell), 0.04 (Nagelkerke).

A single-predictor binary logistic regression was also conducted to examine whether norms about sexual aggression (i.e., SES-TV-R norm total score) could distinguish between people who reported no likelihood to rape from people who reported any likelihood to rape if assured of not being caught or punished (i.e., 0 vs. 1 for LR 2 total score). Peer norms about sexual aggression could distinguish between people who reported no ($n = 154, M = 1.22, SD = 0.41$) vs. any likelihood to rape if assured of not being caught or punished ($n = 17, M = 1.80, SD = 1.03$), $\chi^2(1, N = 171) = 11.82, p = 0.01$, odds ratio (OR) = 3.42, 95% CI [1.69, 6.93], $R^2 = 6.72$ (Hosmer & Lemeshow), 0.07 (Cox & Snell), 0.14 (Nagelkerke).

Discussion

The purpose of the current study was to examine the relationship between attitudes, peer norms and sexual aggression using measures specifically designed to assess attitudes as evaluations. Previous research has indicated some of the measures often used to assess attitudes in research on sexual aggression may actually assess a construct in addition to or instead of attitudes (Nunes et al., 2015). The study was therefore intended to extend previous research by examining whether a measure of attitudes specifically designed to assess attitudes as evaluations would find similar

relationships between attitudes, peer norms and sexual aggression as previous studies that have used different measures of this construct.

The hypothesis that attitudes would be associated with sexual aggression was supported. Attitudes were positively and significantly associated with past sexual aggression, likelihood of sexual aggression, likelihood to rape, and likelihood to rape if assured of not being caught or punished. The hypothesis that attitudes would be associated with sexual aggression independently of peer norms and past sexual aggression was also supported. Attitudes were significantly and independently associated with past sexual aggression and likelihood of sexual aggression. It was not possible to test whether attitudes were independently associated with likelihood to rape due to the inability to test hierarchical regression analyses for these variables. However, attitudes were significantly associated with both likelihood to rape and likelihood to rape if assured of not being caught or punished in the single-predictor logistic regression analyses. More specifically, attitudes were able to distinguish between those who reported no vs. any likelihood to rape for each likelihood to rape variable. The relationship between attitudes and sexual aggression was consistent across different measures of sexual aggression and remained even when a history of sexual aggression was controlled for. The hypothesis that attitudes would explain incremental variance in sexual aggression was also supported. When attitudes were entered into the model with peer norms (i.e., in Step 2) they explained significantly more variance than that explained by peer norms alone (indicated by a significant increase in R^2). Therefore, the results suggest that more positive attitudes towards sexual aggression are associated with higher levels of self-reported sexually aggressive behaviour.

The hypothesis that peer norms would be associated with sexual aggression was partially supported. Peer norms were positively and significantly correlated with past sexual aggression, future likelihood of sexual aggression, and likelihood to rape if assured of not being caught or punished. However, peer norms were positively, but not significantly correlated with likelihood to rape. These findings suggest that generally, more positive peer norms about sexual aggression are associated with more sexually aggressive behaviour. The hypothesis that peer norms would be associated with sexual aggression independently of attitudes and past sexual aggression was not supported. Peer norms were not independently associated with past sexual aggression or likelihood of sexual aggression. It was not possible to test whether peer norms were independently associated with the likelihood to rape variables because hierarchical regression analyses were not possible. Peer norms were not significantly associated with one's likelihood to rape, but did show a significant relationship with one's likelihood to rape if assured of not being caught or punished. More specifically, peer norms were able to distinguish between those who reported no likelihood to rape vs. those who reported any likelihood to rape if assured of not being caught or punished. However, these findings should be considered with caution considering the more comprehensive hierarchical regression models did not corroborate these results. Given the pattern observed in the regression analyses involving the SES-TV-R measures of sexual aggression it is plausible that if hierarchical models had been possible peer norms would fail to independently predict one's likelihood to rape if assured of not being caught or punished once past sexual aggression and attitudes were included in the model. The hypothesis that peer norms would explain incremental variance in sexual aggression was also not supported. When peer norms were entered into

the model with attitudes (i.e., Step 2) they did not significantly increase the amount of variance explained from the amount of variance explained by attitudes alone (indicated by a non-significant change in R^2). Therefore, the results suggest that peer norms may not provide any unique information about sexual aggression beyond that which can be accounted for by attitudes.

Hypotheses regarding mediation were supported. It was expected that attitudes would mediate the relationship between norms and sexual aggression for all outcome variables. Unfortunately, it was not possible to test whether attitudes mediated the relationship between peer norms and likelihood to rape variables. Mediation analyses were only possible for the measures of sexual aggression that used the Sexual Experiences Survey (SES-TV-R). These analyses revealed a significant mediation effect of attitudes. The mediating effect of attitudes may explain why peer norms failed to account for any incremental variance in sexual aggression across measures, as mediation would suggest peer norms influence sexually aggressive behaviour through attitudes. However, these findings should be considered with caution given the study was cross-sectional; thus, it cannot be determined whether one construct actually caused the other because both constructs were measured at the same time.

Hypotheses regarding moderation were partially supported. It was expected that there would be a significant interaction effect between attitudes and peer norms for all measures of sexual aggression, and that this interaction would show the relationship between attitudes and sexual aggression is dependent upon one's peer norms. Interaction effects could not be tested for likelihood to rape variables and analyses involving the SES-TV-R measure of likelihood of sexual aggression failed to find a significant

interaction effect. The only significant interaction was for analyses involving the SES-TV-R measure of past sexual aggression. Simple slopes analyses revealed the simple slope for the association between attitudes and past sexual aggression was only significant at high levels of norms. Suggesting the relationship between one's attitudes and past sexually aggressive behaviour is stronger when the norms they are exposed to about sexual aggression are more positive. Upon inspection of the graph representing this moderation effect it is apparent that the greatest amount of sexually aggressive behaviour was reported by those who also reported the most positive attitudes and peer norms about sexual aggression. These findings provide some support for hypotheses regarding moderation, and suggest the possibility that consistency between attitudes and peer norms (particularly when both are highly positive) is associated with more self-reported past sexually aggressive behaviour. However, as is the case with the mediation findings, the design of the current study limits the ability to conclusively determine moderation effects as the relationship between variables was assessed at one point in time. Therefore, it is unclear whether similar results would have been found with a design that assessed change in these constructs over time, and this should be assessed in future research.

Taken together the findings from the current study seem to suggest that attitudes are consistently associated with sexually aggressive behaviour, while norms are not directly, but indirectly related to sexual aggression through their relationship with attitudes. Although the findings regarding mediation are interesting, it is also important to consider that norms and attitudes were highly correlated in the current study, $r(145) = .77, p < .001$, therefore it is unclear whether attitudes truly mediate the relationship between norms and sexual aggression or the mediating relationship is simply an artifact

of multicollinearity. In other words, the large correlation between norms and attitudes may suggest the measures used to assess each construct are redundant and are actually capturing the same or similar information relevant to sexual aggression. It is therefore difficult to establish whether significant mediation effects are a result of this redundancy or actually reflect a true mediation effect. Given that attitudes and peer norms were both measured using the same survey it is possible that the measures used to assess each construct were too similar. For the peer norms variable participants were asked to consider how their friends would evaluate each sexually aggressive act. The peer norms variable was very similar to the attitude variable which asked participants to indicate how they would evaluate each sexually aggressive act. It is thus possible that the questions used to assess each variable were too similar and may not have captured two entirely separate constructs.

Past studies examining the relationship between peer norms and attitudes or beliefs about sexual aggression have found correlations that range in size. Strang and Peterson (2013) found peer acceptance of verbal coercion (i.e., norms) and punishment certainty for verbal coercion (i.e., attitudes) were moderately correlated, $r = -.25$. In the same study perceived peer acceptance for rape (i.e., norms) and perceived punishment certainty for rape (i.e., attitudes) were also moderately correlated, $r = -.22$. Brown and Messman-Moore (2010) found personal and perceived peer acceptance of sexual aggression (which involved some assessment of evaluation) were fairly highly correlated, $r = .49$. More recently, a study by Dardis, Murphy, Bill and Gidycz (2015) found quite large correlations between men's own rape myth acceptance (commonly used as a measure of attitudes) and men's perceptions of the average college man's rape myth

acceptance, $r = .77$. These correlations suggest the strength of the correlation between norms and attitudes or other personal beliefs about sexual aggression tend to vary between studies but can be quite large. Therefore, it is possible that the correlations found in the current study reflect a genuinely strong relationship between attitudes and peer norms rather than a failure to assess two separate constructs.

As indicated in the literature review, few studies have measured attitudes and peer norms the way they were measured in the current study. Past research assessing the relationship between attitudes (measured as evaluations) and sexual aggression has generally found attitudes are positively and significantly related to sexual aggression. Most of these studies have measured attitudes using outcome expectancy measures rather than the kind of semantic differential scales used in the current study. However, Hermann et al. (2014) assessed attitudes using an adapted version of the original Sexual Experiences Survey-Tactics Version with semantic differential scales and found that attitudes were positively and significantly associated with past sexually aggressive behaviour ($r = .54$) and one's likelihood of future sexually aggressive behaviour ($r = .84$). Therefore, the findings relating to the attitudes measure in the current study seem to be consistent with prior research.

There have been mixed findings for the few studies that have assessed the combined contributions of attitudes and peer norms in explaining sexually aggressive behaviour. Enosh (2007) conducted a cross-sectional study on Israeli high school students and found peer norms were consistent and significant correlates of sexual assault perpetration, but attitudes were not. Additionally, Strang and Peterson (2013) conducted an online cross-sectional study of community men and found that both peer norms and

outcome expectancies (i.e., attitudes) for verbal sexual coercion were significantly associated with a history of verbal sexual coercion; but only peer norms about rape were significantly associated with a history of rape, whereas outcome expectancies for rape were not. These findings differ from the findings of the current study which may suggest the need to further refine the measure of peer norms in future research. For instance, in the Strang and Peterson (2013) study the authors not only asked participants to indicate how they believed their friends would perceive hearing another friend had verbally coerced a woman into sex or committed rape, but also asked how many of their 10 closest friends had actually engaged in either verbal sexual coercion or rape. It is possible that a measure of peer norms that includes more information regarding peers' beliefs and behaviour may reduce issues of multicollinearity and be better able to ensure a construct separate from attitudes is being measured.

Although the current study provides some insight into the role of attitudes and peer norms in sexually aggressive behaviour some limitations must be noted when interpreting the results. The first limitation is that the sample for the current study was self-selected (i.e., participants were volunteers). It is possible that the type of characteristics possessed by those who volunteer for research studies differ from those who do not volunteer for research studies, however, most, if not all research studies rely on voluntary participants so this limitation is not unique to the current study. Second, the study was conducted online and not in the presence of a researcher, therefore, it is possible that participants may not have felt they needed to answer questions thoroughly. Although online studies possess this limitation, reasonable measures were taken to ensure only participants paying satisfactory attention to the survey were included in the final

sample. Only participants who correctly answered all four non-accurate responder questions were included in the final sample. Additionally, missing data analyses resulted in only including participants with complete data on all measures of interest. Third, all measures used in the current study relied on self-reported information. Therefore, it is impossible to know whether responses offered by participants were an accurate and honest reflection of their attitudes, norms, and behaviour. However, there is research to suggest that self-report measures are able to accurately assess antisocial behaviour (e.g., Huizinga & Elliot, 1986; Jones & Miller, 2012; Kroner, Mills, & Morgan, 2007; Mathie & Wakeling, 2011; Thornberry & Krohn, 2000; Woods, Hermann, Nunes, McPhail, & Sewell, 2011).

The current study was also limited in its cross-sectional design. Cross-sectional studies cannot identify causal relationships and do not have the ability to make conclusions regarding the direction of the relationship between variables. Therefore, it is just as likely that having more positive attitudes towards sexual aggression caused people to engage in more sexually aggressive behaviour as it is that engaging in more sexually aggressive behaviour caused people to develop more positive attitudes towards sexual aggression. The limitations of the cross-sectional design also apply to findings regarding mediation and moderation. Therefore, these findings should be considered preliminary and should be replicated with future research using more controlled study designs (i.e., longitudinal, experimental etc.). Another limitation of the current study is the potential issue of multicollinearity between the two independent variables (attitudes and peer norms) as this may have biased the study results. In future research it may be helpful to use a more comprehensive measure of peer norms that is not as similar to the measure of

attitudes. Furthermore, the analyses for the likelihood to rape variables were limited for the current research study due to the uneven spread of groups and different results may have been found had more sophisticated analyses been possible. Lastly, although past research on sexual aggression has been conducted with university student samples, university students may not provide a representative sample of sexually aggressive behaviour and hence it is unclear how well the findings from this study would generalize to other samples such as community men or convicted sex offenders.

Implications and Future Directions

Despite the shortcomings of this study the findings still provide information that extends previous research. This study is one of the first to investigate the combined effect of attitudes (measured as evaluations) and peer norms about sexual aggression on sexually aggressive behaviour. Additionally, the SES-TV-R survey used for the current study was modified to take into account a wider range of sexually aggressive tactics and behaviours than has previously been investigated. There were two goals underlying the modifications made to the survey items. The first was to unambiguously reflect the intentions of the perpetrator in the survey questions by including tactics that seemed to more clearly reflect coercive intentions(i.e., making a woman believe-without actually saying it—that you would make something bad happen to her reputation, finances, employment etc. vs. overwhelming a woman with arguments and pressure; Abbey et al., 2005). Although there is no doubt that non-consensual sexual activity resulting from either of these tactics would be considered sexual assault, the first tactic seems to capture a type of behaviour that is more overtly aggressive than the second tactic. Additionally, given that the time line between the tactic and behaviour is not specified, the second

tactic (although clearly coercive and inappropriate) could conceivably result in a scenario in which perhaps the woman eventually gives in and willingly decides to have sexual contact with the man. However, the first tactic involves an implicit threat that prevents the woman from freely choosing to proceed in sexual contact due to duress. Additionally, it is unclear how coercive the arguments and pressure are in the second tactic. For instance, would repeatedly asking for sexual contact be enough to be considered pressure? Although both tactics seem to assess sexually aggressive behaviour, the questions used in the current study were intended to reflect a more direct and purposeful form of sexually aggressive behaviour on the part of the perpetrator. Asking questions in this way may have limited the ability to assess certain kinds of sexually aggressive behaviour, such as more opportunistic forms of sexual aggression, but seem to represent a less ambiguous form of sexual aggressive behaviour.

The second goal of modifying the survey was to capture sexually aggressive acts and behaviours that had not been assessed in earlier versions of the survey. One of the new sexually aggressive tactics assessed in the current study was whether a man had ever made it so a woman could not get away from him (i.e., blocking the doorway, taking her keys, following her everywhere, refusing to leave etc.) in order to force the woman into having some level of sexual contact with him. Over 10% of participants reported they had used this tactic at least once since they were 16 years old. Another new tactic assessed in the current study was whether a man had ever intentionally scared a woman (i.e., by yelling, swearing, or showing he was angry) to coerce her into having some level of sexual contact with him. Over 10% of participants reported they had used this tactic at least once since they were 16 years old.

New sexually aggressive behaviours assessed by the SES-TV-R included taking sexual pictures and/or videos of a woman without her consent and making her have sexual relations with a man and his friends without her consent. Across sexually aggressive tactics over 10% of participants reported they had taken sexual pictures or videos of a woman without her consent at least once. Additionally, approximately 9% of participants reported that they had, with a friend, had sexual contact with a woman without her consent at least once. Although additional research should be conducted to confirm these results, the fact that approximately 10% of participants admitted to using these tactics and engaging in these behaviours suggests they are relevant types of sexual aggression that should be further investigated in future research. Furthermore, despite the adaptations made to the SES-TV survey the internal consistency of the SES-TV-R past sexual aggression measure in the current study ($\alpha = .86$) was comparable to the internal consistency found in Hermann et al.'s (2014) student sample using a less modified version of the SES-TV ($\alpha = .89$) suggesting the adaptions made to the measure did not severely degrade its reliability.

The analyses and information attained from the likelihood to rape variables were limited in the current study due to issues with uneven groups of participants (i.e., the vast majority of participants indicated no likelihood to rape). The problems encountered in the current study may suggest the likelihood to rape questions are limited in their ability to measure relevant information about propensities for sexual aggression in an undergraduate student sample. The SES-TV-R measures of sexual aggression were able to capture a wider range of sexually aggressive behaviours, which is likely a more accurate reflection of sexually aggressive behaviour itself (i.e., falls along a continuum

that includes, but is not limited to rape). It is also possible that very few respondents indicated any likelihood to rape due to the phrasing of the likelihood to rape questions (i.e., the fact that they include the word “rape”). The Sexual Experiences Survey was actually developed to assess behaviorally specific items relevant to sexual aggression because prior research had found participants tended to under-report having perpetrated or experienced rape if the question actually included the word “rape” in it (Koss, 1993; Fisher, 2009). Approximately 25% ($n = 42$) of participants in the current study reported any likelihood to rape as measured by the SES-TV-R likelihood to rape variable. The questions in the SES-TV-R likelihood to rape variable asked participants to report their likelihood of making a woman have some kind of sex with them when she did not want to. This percentage is higher than both the percentage of participants who reported any likelihood to rape, 2.3% ($n = 4$), and the percentage of participants who reported any likelihood to rape if assured of not being caught or punished, 9.9% ($n = 17$). Given these findings it is possible that the phrasing of likelihood to rape questions may have influenced participant responses. Therefore, more comprehensive measures that assess a variety of sexually aggressive behaviours using behaviorally focused questions, such as the SES-TV-R, may be more appropriate for university student samples.

The findings from this study seem to support DeKeseredy’s (1997) male peer support model as evidence was found for an indirect effect of peer norms on sexual aggression through attitudes. Additionally, the findings from the current study offer some support to Malamuth’s (1986) hierarchical confluence model of sexual aggression. As would be expected by this model there was an interaction between attitudes and peer norms for at least one measure of sexual aggression and the interaction indicated that

more positive attitudes towards sexual aggression and more positive peer norms about sexual aggression were associated with more sexually aggressive behaviour. However, this model would also likely expect both attitudes and peer norms to explain incremental variance in sexual aggression and this hypothesis was only partially supported in the current study. Less support was found for Azjen's (1991) theory of planned behaviour (TPB). According to TPB one would expect that attitudes and peer norms would each independently predict sexually aggressive behaviour and would each explain incremental variance in sexual aggression (i.e., that both attitudes and peer norms would be more strongly associated with sexually aggressive behaviour together than either variable separately). However, in TPB other important predictors of behaviour include one's perceived behavioral control and behavioural intentions, which were not assessed in the current study.

A better understanding of the relationship between attitudes, peer norms, and sexual aggression may be accomplished with the inclusion of other constructs that are theoretically linked to behaviour such as perceived behavioral control and behavioral intention to commit sexually aggressive acts. Furthermore, future research would benefit from employing longitudinal designs with the ability to control for the temporal order of variables. These types of research designs should further explore the relationship between the measures used in the current study to confirm whether similar results can be found with more controlled research designs. Longitudinal research would be particularly useful in further testing the mediation and moderation findings from the current study as more control over the temporal order of variables would provide further confidence in the findings obtained in this study. Additionally, it would be useful to test such relationships

with multiple samples; perhaps beginning with a student sample and progressing to more difficult to obtain samples such as community participants and incarcerated sex offenders.

The current study indicates attitudes about sexual aggression are relevant to the understanding of sexually aggressive behaviour. It also suggests peer norms are potentially relevant to sexual aggression through their relationship with attitudes, but are not independently associated with sexually aggressive behaviour. Although the results from the current research study are cross-sectional and therefore limited in their practical application, if the results from the current study were replicated with a more controlled research design this may have important implications for interventions aimed to reduce sexual assault. For instance, if peer norms have a causal influence on attitudes, and attitudes ultimately influence behaviour, then delivering prevention programs that focus on addressing problematic norms to ultimately influence and reduce problematic attitudes about sexual aggression may provide an effective method for reducing incidences of sexual assault. More controlled research designs and an exploration of additional variables that are theoretically linked to behaviour will allow researchers to more thoroughly explore the effect of both cognitive and social factors on sexually aggressive behaviour. A greater understanding of the cognitive and social underpinnings of sexually aggressive behaviour will help to inform and aid the development of evidence-based prevention and intervention programs for sexual aggression to reduce incidences of sexual assault.

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Appendix A

Recruitment Notice – Students

Study Name:

Sexual Behaviour: What do you think? - MALE STUDENTS ONLY

Seeking Participants:

Male participants who are fluent in English.

Details about Participating:

The current study will ask you some questions about your and your friends' opinions about sexual aggression and whether you have been or would be sexually aggressive **with women** (i.e., using threats and/or force to get sex). All of your responses will be completely anonymous.

Benefits to Participating:

You will receive a 0.25% raise in your course grade for participation.

Potential Negative Consequences to Participating:

It is possible that you may experience anxiety, emotional pain, or embarrassment due to the sensitive topic being studied.

Researchers: Kristen White E-mail: kristenwhite@cmail.carleton.ca

Kevin Nunes E-mail: kevin.nunes@carleton.ca

Participant Sign-Up Deadline: 24 hours before study is to occur.

Participant Cancellation Deadline: 24 hours before study is to occur.

This study has received clearance by the Carleton University Psychology
Research Ethics Board

(Reference XX-xxx, insert ethics reference number once obtained)

Appendix B**Demographic Questionnaire**

How old are you (years)?

1. 16 or younger
2. 17
3. 18
4. 19
5. 20
6. 21
7. 22
8. 23
9. 24
10. 25-29
11. 30-39
12. 40-49
13. 50-59
14. 60 or older

What is your gender? (male/female)

What is your sexual orientation? (Heterosexual, Homosexual, Bisexual, Other)

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

Do you understand written English? (yes/no)

What is your current relationship status?

1. Single
2. In a romantic relationship
3. Living with a romantic partner
4. Married
5. Separated/divorced/widowed

Appendix C

Sexual Experiences Survey-Tactics Version Revised (SES-TV-R)

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), and
- (c) how you **evaluate** these different types of sexual behaviours (Very negative, Negative, Somewhat negative, Neutral, Somewhat positive, Positive, Very positive), and
- (d) how **your friends** would **evaluate** these different types of sexual behaviours (Very negative, Negative, Somewhat negative, Neutral, Somewhat positive, Positive, Very positive).

By “woman” we mean any female close to your age or older at the time of the sexual experience.

[How many times SINCE YOU WERE 16 years old/How LIKELY would you be to do the behaviour below?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with 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?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with her when she didn't want to?

[How many times SINCE YOU WERE 16 years old/How LIKLEY would you be to do the behaviour below?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with 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?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with her when she didn't want to?

[How many times SINCE YOU WERE 16 years old/How LIKLEY would you be to do the behaviour below?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with 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?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with 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?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with 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?/How POSITIVE or NEGATIVE do you think the behaviour below is?/How POSITIVE or NEGATIVE would your FRIENDS think the behaviour below is?]

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?
5. For you and your friends to kiss, sexually touch, or have some sort of sex (oral, vaginal, or anal) with her when she didn't want to?

Appendix D

Likelihood to Rape Questions

How likely is it that you would commit rape? (**LR-1**)

1 = Not at all likely

2

3

4

5 = Very likely

How likely is it that you would commit rape if you would not get caught and/or punished? (**LR-2**)

1 = Not at all likely

2

3

4

5 = Very likely

Appendix E

Student Participant Consent Form

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 who to contact if you have any questions or concerns that cannot be answered by the researcher after the study is completed.

Present study: Sexual Behaviour: What do you think?

Research personnel: The present study is being conducted by Kristen White (M.A student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261); 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 Kristen White or Kevin Nunes. If you are concerned about the ethics of this study, please contact Dr. Shelley Brown (Chair of the Research Ethics Board for Psychological Research, 613-520-2600, ext. 1505, psychology.ethics@carleton.ca). For any other concerns, please contact, Dr. Joanna Pozzulo (Chair, Department of Psychology, 613-520-2600, ext. 1412, psychchair@carleton.ca).

Purpose: The purpose of this study is to learn more about men's thoughts, intentions, and actions regarding sexual aggression.

Participant requirement: To participate in this study you need to be male and fluent in English.

Task requirements: Participation in this study takes about 30 minutes. In this online survey, you will be asked to answer some questions about your and your friends' opinions about sexual aggression and whether you have been or would be sexually aggressive **with women** (i.e., using threats and/or force to get sex). All of your responses will be completely anonymous.

Benefits/compensation: You will receive 0.25% credit for participating in this study.

Potential risk/discomfort: The questions asked may be offensive or embarrassing because of their explicit detail and sexual nature. You are free to stop answering questions at any time, and exit the study **without penalty**. In other words, the full credit (0.25%) 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, nobody will be able to link your answers to your identity and we will not know who said what. The information you provide will only be used for research and teaching purposes.

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 not complete questions, or withdraw without penalty.

This study has been approved by the Carleton University Ethics Committee for Psychological Research (XX-xxx) **insert number once obtained**.

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 F

Debriefing Form

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.

What Are We Trying to Learn in this Research?

In the measures you completed everyone answers the same questions regarding their own as well as their friends' thoughts and experiences with sexual aggression. We are looking to see if there is a relationship between how men and their friends 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 has many negative consequences for both victims and perpetrators. To understand why sexual assault happens we need to conduct research on the various factors (i.e., attitudes, norms, past experiences) that may be associated with sexually aggressive behaviour. Our research aims to help understand how these factors 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 different variables that are associated with 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 = sexual acts with someone against their will – either when they don't consent (e.g., forcing sexual contact on someone who is refusing and resisting) or can't consent (e.g., having sexual contact with someone who is passed out or too drunk to know what they're doing). Sexual acts include not only sexual intercourse, but also kissing, sexual touching, and oral sex. Forcing a woman to engage in sexual activity against her will is a criminal offence that has serious consequences for both the man and the woman.

Possible Consequences for Victims of Sexual Assault

- Genital injury, such as tears, scrapes, bruises and swelling that could last for weeks

- Sexually transmitted infections
- Unwanted pregnancy
- Embarrassment and shame
- Negative reactions from partner, family, friends, acquaintances, co-workers, medical staff, or police
- Fear and anxiety that can last for years
- Depression
- Post-traumatic stress disorder
- Problems with current or future romantic relationships
- Sexual dysfunction; inability to enjoy healthy sexual activity

Possible Consequences for Men Who Commit Sexual Assault

- Feel guilty, embarrassed, and ashamed
- Regret and remorse
- Arrested
- Prison
- Criminal record
- Publicly identified and labeled as a sex offender
- Lose job
- Lose friends
- Socially excluded by family, friends, acquaintances, and co-workers
- Limited employment opportunities
- Need to move away

Forcing sexual activity on a woman without her consent not only hurts the victim, but can also hurt the perpetrator. **Forcing sexual activity on someone against their will is never okay**, no matter who they are, where they come from, what they look like, how they act, how they dress, or their past sexual behaviour.

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/>

You can also visit Carleton University's Equity Services website to learn more about sexual assault:

<http://www2.carleton.ca/equity/sexual-assault-support-services/>

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-supportive 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

What if I Have Questions Later?

The present study is being conducted by Kristen White (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). If you have any questions or concerns about this study please contact Kristen White or Kevin Nunes. If you are concerned about the ethics of this study, please contact Dr. Shelley Brown (Chair of the Research Ethics Board for Psychological Research, 613-520-2600, ext. 1505), psychology.ethics@carleton.ca. For any other concerns, please contact, Dr. Joanna Pozzulo (Chair, Department of Psychology, 613-520-2600, ext. 1412, psychchair@carleton.ca)

This study has been approved by the Carleton University Ethics Committee for Psychological Research (14-xxx).

Thank you very for making this research possible

Appendix G

Questions to Identify Non-Accurate Responders

1. Please respond to this question by selecting X.
2. Please respond to this question by selecting C.
3. Please respond to this question by selecting the number 10.
4. Please respond to this question by pressing 5.