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Same Race-Ethnicity Referents and Social Norms Interventions for Violence Prevention

by

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A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Psychology

in the

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of the

University of California, Berkeley.

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Summer 2024

Abstract

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University of California, Berkeley

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Social norms interventions provide a promising avenue for sexual violence prevention; however, experimental research on social norms interventions is nascent. While in-group norms and values strongly influence behavior, existing research has not investigated the effects of same race-ethnicity referents within these interventions. Thus, the present research demonstrates the effect of same race-ethnicity referents in social norms interventions to reduce sexual violence. The two studies, comprised of racially diverse samples of men, employed a brief social norms intervention with a three-condition design: gender-only referents, gender and race-ethnicity referents, and control. Study 1 applied a manipulation focused on sexual violence, consent, and alcohol ($N = 391$, aged 18-24). Contrary to previous findings, Study 1 did not find a significant difference between conditions. Notably, the sample revealed overwhelmingly healthy attitudes toward consent and alcohol indicating a possible limitation. The Study 2 manipulation targeted sexist beliefs ($N = 574$, aged 18-26) and found both experimental conditions significantly reduced rape myth acceptance and sexism. These results were not explained by racial-ethnic group membership alone. Study 3 conducted a reanalysis to examine the effect of identification and esteem associated with participants' racial-ethnic group, and results revealed inconsistent effects of the subscales of Collective Self-Esteem. These results suggest identification and group evaluation contribute to, but do not fully explain, motivation to adhere to social norms messaging. Together, these studies extend the research on social norms interventions to address perpetration and provide insight to the efficacy of tailored, culturally-specific interventions.

Dedication

For survivors and all those collaborating to end violence.

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Same Race-Ethnicity Referents and Social Norms Interventions for Violence Prevention

Sexual violence remains a significant social and public health issue with few effective tactics to reduce its occurrence. A strong predictor of perpetration is the perception—or misperception—of peers’ attitudes towards and use of violence. Norms interventions have been successful in curbing other problem behaviors (Miller & Prentice, 2016; Nolan et al., 2021) and recent studies have demonstrated promise for its use to address sexual violence perpetration (Durán et al., 2018; Kilmartin et al., 2008; Zounlome & Wong, 2018). The most effective social norms interventions target situations where the appropriate behavior is ambiguous and provide credible messaging about meaningful referent groups (Nolan et al., 2021). In social norms interventions, a referent group is used as the standard or reference for the desired behavioral or attitudinal comparison. However, “meaningful” groups are not well defined. Consistent with theories of social identity (Tajfel, 2010) and social comparison (Festinger, 1954), many experimental studies and reviews suggest employing referent groups that are salient, less distal, and with whom the target audience identifies. A variety of referent groups have yielded the desired outcomes, including proximal groups (Neighbors et al., 2008; Paluck & Shepherd, 2012; Zhuang et al., 2024), groups valued by the target audience (Xiao et al., 2023), and even, surprisingly, rather generic groups (i.e. “people who use this soap,” Richetin et al., 2016). For example, social norms interventions aimed at addressing risk factors for perpetration have found, that for men, other male peers are a valued referent group (Berkowitz et al., 2022; Casey et al., 2020; Durán et al., 2018; Kilmartin et al., 2008; Zounlome & Wong, 2018) and proximal others (e.g. same-university peers) also strengthen norm messaging efficacy (Zounlome & Wong, 2018). Undoubtedly, referent group is an important factor in the design of norms interventions and, consistently, findings indicate the effects vary as a result of referent groups (Zhuang et al., 2024; Barman-Adhikari et al., 2018; Neighbors et al., 2008). Yet, the relative effect of different referent groups and group specificity remains unclear (Mertens & Schultz, 2021). Notably, little is known about the effect of a specific ingroup: same racial-ethnic referents (Wong et al., 2024).

Ingroup and identity-based processes suggest same-identity referents may activate powerful mechanisms to motivate conformity, but very few have examined the effect of demographic ingroup. Gender-concordant norms interventions have been examined in the domains of college alcohol and violence prevention, where men are overrepresented in problem behaviors and are also strongly influenced by their same-gender peers (Casey et al., 2020; Hackman et al., 2017; Wong et al., 2024). Studies have examined differences in norms—and in the perceptions of those same norms—by various demographic identities, including race or ethnicity (Burns et al., 2019; Fortson et al., 2023; LaBrie et al., 2012; Martin et al., 2013). However, at the time of writing this paper, I could not locate any experimental social norms interventions which manipulated the race-specificity of the referents. Given the potential of ingroup processes to strengthen the effect of social norms interventions, race-specific norms messaging demands further study. Sexual violence prevention presents a valuable opportunity for such investigation.

Jointly, social identity and peer norms may be compelling forces in social norms interventions. Could positive ethnic-group identity strengthen norms interventions and protect against violence-supportive attitudes and—ultimately—perpetration? To situate this line of research, I first provide a brief overview of the literature on violence prevention and perpetration, a primer on the Social Norms Approach, and conclude with the proposed research.

Preventing Sexual Violence

Young adults (ages 18-24), especially women, are particularly vulnerable to sexual violence victimization (Koss et al., 2022). One in four women experience sexual violence (SV) while in college and college men are significantly more likely than non-student men to be victims of rape or sexual assault (DeGue et al., 2014). These forms of violence are largely—but not exclusively—committed by men, and notably, there are no statistically significant differences in perpetration of rape by ethnicity or race (Koss et al., 2022). A 30-year comparison (1985 and 2015) of men’s perpetration rates reveals moderate increases (Koss et al., 2022), however, some of this change could be attributed to improvements in measurement. Despite increased research, policy, and education aimed at addressing violence, the prevalence of perpetration remains unchanged (Koss et al., 2022).

Numerous scholars and practitioners have explored educational sessions to prevent or reduce perpetration. These approaches are largely ineffective (Bonar et al., 2020; Kovalenko et al., 2020). In 2014, DeGue and colleagues asserted: “a large portion of research (and, presumably, programmatic) resources, to date, have been invested in brief psycho-educational strategies that are not consistent with the principles of prevention and have not demonstrated effectiveness despite numerous evaluations,” (p. 359). Almost a decade later, this perspective remains largely substantiated. At best, such efforts result in short-term outcomes but, in the face of unchanged dynamics across pre-existing normative influences, are inadequate to sustain behavior change. Developing alternatives, and complementary strategies, to educational sessions is perhaps the largest opportunity in preventing perpetration.

The ideal models for prevention call for multi-pronged approaches with a focus on all levels of the social ecology (Bonar et al., 2020; Casey & Lindhorst, 2009; DeGue et al., 2014; Kovalenko et al., 2020). Research has unearthed valuable insights about perpetration and the characteristics of those who use violence. Relational contexts are widely understood as influential but remain under-leveraged in prevention. Armed with these insights, it is imperative to investigate theoretically derived interventions addressing both individual- and relational-level factors of perpetration. The following sections introduce characteristics of perpetration with attention to relational factors and to those suitable for social norms interventions.

Influence of Peers

Canadian and U.S. research with collegiate samples confirm male peer support models as a significant predictor of SV perpetration (DeKeseredy & Kelly, 1995). Multiple studies have found that peers’ approval for forced sex and of obtaining sex by any means are risk factors for young men (Tharp et al., 2013). Among community samples, but not collegiate samples, pressure to have sex was associated with perpetration (DeKeseredy & Kelly, 1995; Tharp et al., 2013). Informational support provided by men to other men—including teasing and overt pro-abuse exchanges—as well as attachment to those peers, together, are high risk factors (DeKeseredy & Kelly, 1995). Even one peer who actively supports or engages in SV, further normalizes perceptions that SV is acceptable or even common (Tharp et al., 2013). “Individuals who perceive pressure by their friends to have sex may view SV as having social benefits that outweigh the personal risks,” (Tharp et al., 2013, p. 113). Peers can also protect against perpetration. Peers who engage in bystander intervention and disrupt harmful or potentially harmful behavior, signal that such behavior is unacceptable (The National Sexual Violence Resource Center, 2013). These signals can inhibit microaggressions, harassment, and even more harmful forms of aggression (Potter & Stapleton, 2011).

Misperceptions and Perpetration

Perceiving violence-supportive norms is associated with increased likelihood of perpetration. Experimental designs have found that men who perpetrate view their behavior as typical and acceptable (Loh et al., 2005). Importantly, cross-sectional studies reveal misperceptions among men who perpetrate SV. As compared to non-perpetrating peers, these men perceive greater pressure from friends to engage in sex by any means and to conform to sexually aggressive norms (Bonar et al., 2020; Dardis et al., 2016; Jacques-Tiura et al., 2015). These perceptions are also mediated by a number of risk factors (Thompson et al., 2011). Conversely, men who do not adopt violence-supportive beliefs and hold generally healthy attitudes underestimate similar attitudes among peers. As such, interventions which aim to correct these misperceptions and are reinforced by relational and structural factors may prove to be effective (Dardis et al., 2016; Fabiano et al., 2003; Kaczowski et al., 2017; Thompson et al., 2011).

Peers and norms are influential in both the prevention and use of sexual aggression. Associating with peers that support SV, forced sex, pressure for sexual activity, or sexual aggression is a significant risk factor for perpetration (Abbey et al., 2007; Jewkes et al., 2006; Krahé, 1998). While peers may reinforce unhealthy norms and behaviors, they can—in contrast—promote prosocial norm and behaviors. One avenue to shift behaviors targets social norms.

The Social Norms Approach

Individuals are prone to misperceiving the attitudes and behaviors of others, including friends, peers, and broader groups (Berkowitz et al., 2022; Nolan et al., 2021). Often, those with “healthy” attitudes and behaviors underestimate the extent of the groups’ healthy attitudes. Conversely, those with unhealthy attitudes overestimate the extent to which peers also hold unhealthy attitudes—as is the case among perpetrators (Dardis et al., 2016). This is known as the false consensus effect (Ross et al., 1977). These misperceptions readily coexist with harmful or problem behaviors, such as abuse of alcohol and other drugs, bystander inaction, violence perpetration, and increased waste or energy consumption. The social norms approach aims to change behavior by engaging the positive influence of norms and the “healthy” group norm to correct these misperceptions.

The role of group norms in encouraging conformity to those norms is well established in psychological science (Miller & Prentice, 2016). To shape representation of a social group and shift toward a desired behavior, researchers have successfully experimented with strategies to provide feedback about norms (Miller & Prentice, 2016). Two common approaches include social norms messaging, which delivers a single fact (e.g. energy bill stating “77% of your neighbors report taking shorter showers to conserve energy”; Miller & Prentice, 2016) and personalized normative feedback, which provides information about how the participant compares to the group norm (e.g. *You indicated consuming 10 drinks and you think students drink 15. The average consumption is 4.6 drinks. You drink more than 80% of students*; Neighbors et al., 2011).

Identity is central to the success of norms interventions. These interventions produce the desired outcomes by addressing one or more fundamental needs: to understand how to behave in a given context, to belong in a group, or a combination of the two (Nolan et al., 2021). Consequently, to be effective, norms-based intervention must involve meaningful referent groups

and credibly convey the target message (Cialdini et al., 1990; Cialdini & Goldstein, 2004; Keltner et al., 2014; Nolan et al., 2021). Identification with the referent group further strengthens the effect of norms intervention and, in some cases, moderates the effect (Xiao et al., 2023). Norms interventions are less effective when the messenger is not perceived as objective (Nolan et al., 2021), and generally, individuals show a greater tendency to conform to ingroup norms (Miller & Prentice, 2016). Identity has been construed and represented broadly in interventions' referent groups, but rarely are socio-demographic identities in focus. Socio-demographic identity, such as race, presents one untested dimension of relevance for a reference group. Strength of racial-ethnic identification may even further bolster salience.

Ingroup Processes

Identifying as a part of a group can lead to a sense of belonging, closeness, similarity, and increased sense of responsibility for the well-being of others in the group, (Keltner et al., 2014). Positive group-based processes can have a constructive effect on prosocial attitudes and behaviors. The ingroup goals, or shared purpose, can serve as a motivator for engaging in prosociality, and indeed, prosocial norms are an important stimulus toward prosocial behavior (Keltner et al., 2014). Psychological interventions focused on social norms have been utilized to correct misperceptions about ingroups and promote helping behaviors (*e.g. from people in my group don't want me to intervene to most people in my group want my help*; Schroeder & Prentice, 1998).

Dovidio et al. (1997) and Hopkins et al. (2007) found people are more likely to feel concern for and help those that belong to their same group. These caring behaviors “avoid the risks of mutual exploitation and foster cooperation” within groups, (Keltner et al., 2014, p. 435). Members of minoritized groups may also engage in prosocial behaviors to confirm positive and disconfirm negative depictions of group stereotypes to outgroup members (Hopkins et al., 2007). Engaging in and fostering a group's normative behavior facilitates ingroup definition and differentiation from outgroups. Individuals will be motivated towards norms that promote this distinction and, in fact, improve their groups' standing (Christensen et al., 2004).

Identity Concordant Norms. One school of thought suggests identity-specific norms interventions may be ineffective because certain topics, behaviors, or attitudes may be associated only with outgroup members. These associations may cast doubt on the credibility of the norms intervention, ultimately undermining its efficacy (Oyserman et al., 2007). However, Oyserman and colleagues (2007) suggest cuing ingroup identity may yield positive outcomes for norms interventions when the desired outcome is aligned with in-group values. People prefer identity-congruent actions even in the face of difficult behavior change or dissonance. Oyserman et al. (2007) propose value is ascribed to difficulty associated with identity-congruent actions (*e.g. this is important to people of my group*) in contrast to negative attributions (*e.g. this is not for people like me*).

Collectively, these frameworks suggest ingroup, identity-specific norms messages may be effective at shifting attitudes and behaviors, particularly for racially minoritized groups. For example, sexual violence is often seen as a social issue relating to and addressed only by white women. By actively cuing and including ingroup identity into the norms messaging, participants may perceive the message as more relevant and identity congruent.

Uniting Forces: Social Norms Intervention & Racial-ethnic specificity

Hall and colleagues (2005) found that “loss of face”—concern about damaging reputation or making others uncomfortable—served as a protective factor for Asian men (Hall et al., 1998, 2000, 2005). Asian men may seek to avoid behaviors deemed as deviant from group norms (Hall et al., 2005). “Fostering awareness and concern about one’s behavior relative to social norms could constitute a form of...prevention against sexual aggression,” (Hall et al., 2005, p. 838). Hall et al. (2005) is one of very few studies which examined the role of cultural values and norms in mediating and mitigating risk factors. Given, the nuanced nature of norm influences, culturally-specific norms messages may be a promising direction.

Healthy peer norms may attenuate SV-supportive beliefs, attitudes, and behaviors and serve as a protective factor against perpetration. The evidence is clear that proximal and meaningful referent groups—that is, groups with whom one identifies and feel close to—more effectively drive change in behaviors. However, these “meaningful” groups are not well defined. Who is meaningful in driving young men’s attitudes toward SV—teammates, classmates, neighbors, those in their same racial-ethnic community?

A recent emphasis on the experiences of women and survivors of color has shed light on the role of social identities and group processes in SV victimization (Gómez, 2019; Harris & Linder, 2017). Intracultural trust is so influential that violations can lead to experiences of revictimization and cultural betrayal trauma (Gómez, 2019). Could these same group possesses hold protective influences against the use of violence? Social identity-based interventions may be especially effective among minoritized groups by tapping into the fundamental need to belong.

Overview of Current Research

This dissertation examines the effects of positive racial-ethnic specific norms messages on factors associated with, or predictive of, men’s perpetration. To accomplish these aims, I conducted two quantitative studies and a re-analysis. Study 1 investigated the effect of gender-only referents, as well as intersectional (race and gender jointly) referents, on rape myth acceptance, perception of alcohol-facilitated assault, and future intentions to assault. To do so, I employed a manipulation focused on alcohol use and consent developed by Zounlome and Wong (2018). Study 2 again examined the effect of racially- and gender-specific norms, as compared to gender-only norms, on risk factors (i.e. aggression, rape myth acceptance, likelihood to assault, sexism) and prosocial factors (i.e. prosociality, bystander intentions). The manipulation in this study focused on sexism, a predictor of perpetration. As such, the norms manipulation described general attitudes towards women and did not explicitly reference sex or violence. The final study (Study 3) is a re-analysis of data collected in Study 1 and 2 to examine the role of self-concept based on racial-ethnic group membership in norms interventions.

Collectively, the three studies establish a foundation for research focused on the effect of racial-ethnic specific messaging in protecting against sexually aggressive attitudes and behaviors. Men account for the vast majority of perpetration and, consequently, are the target population of focus in this study. Previous research has demonstrated male peers’ influence and, indeed, efficacy as a referent group. To jointly account for the effect of male referents, the intervention’s target audience (i.e. men), and the gendered disparities of violence perpetration, all experimental conditions included gender-specific referents. This allowed for the replication of prior findings and examination of the relative effect of racial-ethnic specificity. Importantly, all studies recruited samples comprised predominantly of men of color. Most research on sexual

violence, and almost all studies of norms interventions to address perpetration, utilize predominantly white samples (O'Connor et al., 2021). While it is expected that men of all racial-ethnic identities will demonstrate comparable responses to norms messaging, this sample composition also enabled investigations of characteristics specific to racially minoritized groups.

Study 1

This study examined the effect of racial-ethnic and gender concordant norms messaging. To do so, the study utilized norms messaging in a three-condition design to assess the effect on violence-related attitudes and intentions. I expected racial-ethnic and gender-specific norms to be negatively associated with each of the four dependent variables: 1) rape myth acceptance, 2) perceived appropriateness of alcohol-facilitated assault, 3) self-reported likelihood to sexually assault, and 4) intentions to sexually coerce. This study also compared the effect sizes of the conditions and explored the effects of other SV predictors in the literature and possible moderators.

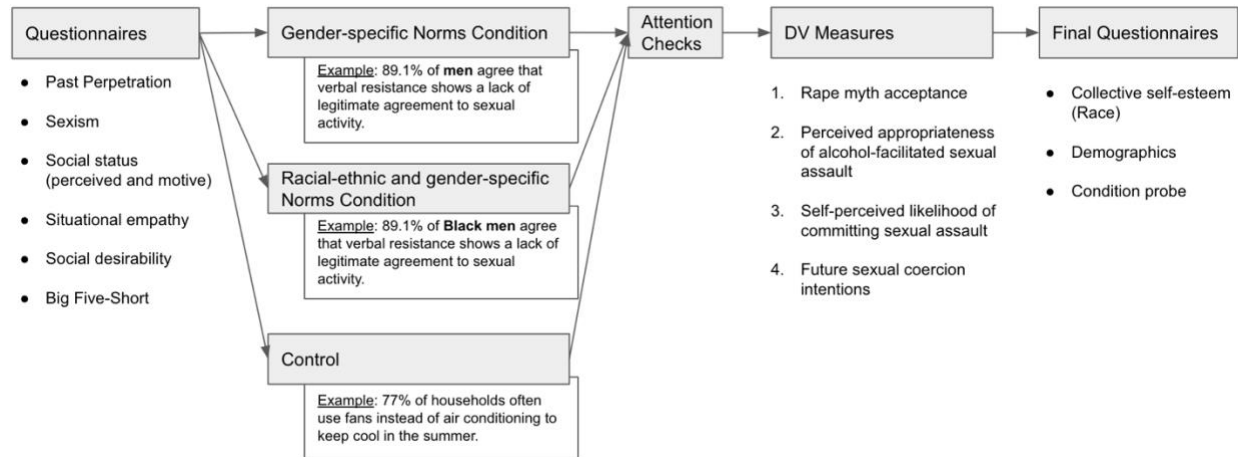
Methods

Participants

The sample was collected via Prolific and CloudResearch and a power analysis based on small effect sizes was conducted to determine sample size. Study inclusion criteria were men, ages 18-24, who reside in the U.S., and identify as Black, Asian, Latino, or White. All exclusion criteria were pre-registered. Ninety-five participants whose demographic questionnaire did not match the study criteria demographics were excluded. Participants completed two checks designed to identify non-US participants and only one participant was removed from the analysis. Additionally, participants who failed the manipulation and attention checks ($n = 50$) and those with extreme responses to the past perpetration questionnaire (i.e. those reporting more than 100 tactics of aggression; $n = 2$) were excluded from the analysis. The final sample was comprised of 391 participants, excluded a total of 148 participants who failed study inclusion criteria, and is comprised of 30.1% White, 25.8% Asian, 23.7% Latino, and 20.5% Black ($\text{Mean}_{\text{age}} = 21.5$, $\text{SD}_{\text{age}} = 1.9$, $\text{Range}_{\text{age}} = 18-24$).

Procedure

Participants identified as eligible opted into study participation and completed a consent form for the study, which was approved by the UC Berkeley Committee on the Protection of Human Subjects. Participants first completed individual differences measures and were then randomly assigned to one of three conditions: 1) gender-specific norms, 2) racial-ethnic and gender-specific norms, or 3) a control condition (see Figure 1). In the experimental conditions, participants were presented with ten anti-sexual violence norms (e.g. “90.5% of men agree that a person who says “no” cannot legitimately agree to sexual activity,” “74.3% of men agree that the more alcohol a person drinks, the less that person can genuinely agree to sexual activity;” see Appendix A for complete list). The racial-ethnic and gender-specific condition adapted the norms messages to be racially concordant (e.g. Latino participants were presented with norms about Latinos; “90.5% of Latino men agree that...”). Participants in the control condition were presented with ten norms about environmentalism (e.g. “72% of households put out a recycling bin at least once per month”). Subsequently, participants completed an attention check indicating “True” or “False” for the items corresponding to the assigned condition. This check may have

Figure 1*Overview Study 1 Procedures*

also served as a booster for the norms message. Participants then completed four outcome measures: 1) appropriateness of alcohol facilitated sexual assault, 2) rape myth acceptance, 3) self-perceived likelihood of committing sexual assault, and 4) future intentions to commit sexual coercion. To conclude the study, participants completed brief demographic questionnaires.

Measures

Descriptive statistics and zero-order correlations for the following variables can be found on Table 1 and Appendix B, respectively.

Past Sexual Aggression. The revised Sexual Experiences Survey Perpetration Short-Form (Koss et al., 2007) is comprised of six behavioral items describing various forms of attempted or completed assault (e.g. “I had oral sex with someone or had someone perform oral sex on me without their consent”). This measure was modified with gender neutral pronouns. For each behavior endorsed, participants indicated the number of instances and tactics used to aggress in the last 12 months and since age 14. This variable was dichotomized (0 = no history of perpetration, 1 = any history of perpetration).

Attitudes toward Sexual Violence, Alcohol, and Consent. Adapted from Zounlome & Wong (2018), a list of ten statements regarding alcohol, consent, and sexual assault was presented (e.g. “The more alcohol a person drinks, the less that person can genuinely agree to sexual activity,” “Being passed out due to alcohol or drugs use shows a lack of legitimate agreement to sexual activity.”). Participants indicated their level of agreement on a 5-points scale and a composite was developed from the average of the ten items.

Social Status-Perceived. This brief measure, adapted from Anderson et al. (2012, 2020), assessed participants’ perceived status among peers, men, women, and men of the same racial-ethnic identity. For each of the four groups, participants rated a single item indicating their self-perceived status in each group on a 7-point scale. The average of all items was used to derive an overall perceived status variable.

Table 1*Study 1 Variable Descriptives*

Measure	<i>M</i>	<i>SD</i>	Min	Median	Max	Alpha
History of Perpetration, <i>n</i> (%)						
Yes	37 (9.5%)	—	—	—	—	—
No	354 (90.05%)	—	—	—	—	—
Attitudes toward Sexual Violence	4.3	0.7	2.4	4.5	5.0	0.89
Social Status						
Perceived	4.4	1.0	2.5	4.2	6.5	0.86
Motive	3.3	0.8	1.4	3.4	5.0	0.88
Sexism	2.8	0.8	1.0	2.9	4.8	0.86
Big Five Inventory						
Extraversion	2.5	0.8	1.0	2.3	4.5	0.61
Openness	3.8	0.8	1.8	4.0	5.0	0.58
Agreeableness	3.5	0.8	1.5	3.7	5.0	0.54
Negative Emotionality	3.1	1.0	1.0	3.3	5.0	0.74
Conscientiousness	3.0	0.9	1.0	3.0	5.0	0.66
Social Desirability						
Impression Management	3.7	0.9	1.4	3.6	6.5	0.62
Self-Deception	4.4	0.8	2.4	4.4	6.6	0.68
Situational Empathy toward Victims	4.8	0.7	2.8	4.9	5.8	0.80
Rape Myth Acceptance	1.9	0.7	1.0	1.7	3.8	0.84
Appropriateness of Alcohol-facilitated Sexual Assault	1.7	0.8	1.0	2.0	3.5	—
Likelihood to Assault	1.5	0.6	1.0	1.2	2.7	0.84
Future Intention to Sexually Coerce	1.2	0.4	1.0	1.0	1.8	0.96

Note. *M* = Mean; *SD* = Standard Deviation.

Social Status-Motive. To assess motivation for status relative to the groups in the randomly assigned condition, this study utilized the eight-item scale (Flynn et al., 2006) scored on a 5-point Likert scale and averaged to create a composite. Participants were instructed to think about a reference group in their assigned condition: men (gender-specific condition), same race-ethnicity men (racial-ethnic and gender-specific condition), and friends (control condition) and then indicate agreement with each item (e.g. “I want them to respect me and hold me in high esteem”).

Sexism. The Ambivalent Sexism Inventory, short-version (Glick & Fiske, 1996) is a 12-item measure designed to capture sexism and two subscales: hostile sexism and benevolent sexism. Items were scored on a 5-point scale and averaged to create a composite and two subscales.

Big Five Personality. The Big Five Personality-2-Extra Short scale (Soto & John, 2017) is a 15-item measure of five personality domains: extraversion, agreeableness, conscientiousness, negative emotionality, and open-mindedness). The measure was scored on a 5-point Likert scale, and each domain was averaged to create five variables.

Social Desirability. The Balanced Inventory of Desirable Reporting short-form (Hart et al., 2015) captured participants’ management of self-presentation and how participants may represent—or misrepresent—theirself. The 16-items measure consists of two facets: self-

deception and impression management. The scale was scored on a 7-point Likert scale and averaged to find two composites.

Situational Empathy. Participants were presented with two vignettes from the Rape Proclivity Questionnaire (Bohner et al., 1998) and 4 items developed for this study to measure empathy towards the victim in the vignette (i.e. “I imagined this situation from the perspective of the young woman,” “This situation does not disturb me,” “It upsets me to read how the young woman was treated,” and “I have feelings of concern for the young woman”). The scale was scored on a 6-point Likert scale and averaged to create a composite.

Dependent Variables

Rape Myth Acceptance. Based on the results of McMahon & Farmer’s (2011) factor analysis, this variable utilized 10 items from the original scale. The items were scored on a 7-point scale and the variable was derived from the average of the items.

Appropriateness of Alcohol Facilitated Sexual Assault. Participants first watched a brief video of a party scene which ends with an implied sexual assault. After completing an attention check, participants completed a single item indicating the appropriateness of the forthcoming assault (“In the video, the man was about to have sex with the woman. How appropriate do you think it was for him to do so in that situation?”; Zounlome & Wong, 2018). The item was scored on a 5-point scale (very inappropriate) to 5 (very appropriate).

Self-Perceived Likelihood of Committing Sexual Assault. Zounlome & Wong (2018) adapted 6-items from Briere and Malamuth (1983) to assess likelihood of using sexual violence if assured of no consequences. Participants received the instructions to indicate likelihood on a 5-point scale: “If you could be assured that you could in no way be punished for engaging in the following acts, how likely, if at all, would you be to engage in such acts?.” For example: “Having sex with someone who is not sober?” The measure contained three explicit and three implicit sexual assault items averaged to derive the variable. The 10 filler items were not analyzed.

Future Intentions to Sexually Coerce. Adapted from Edwards and Vogel (2015) by Zounlome & Wong (2018), this is a 3-item measure of the likelihood to use coercion. Participants are asked to indicate the likelihood to coerce a woman to 1) “kiss and touch in a sexual way without intercourse?,” 2) “engage in oral sex with you?,” and 3) engage in intercourse.” The measure was scored on a 5-point scale and the score was derived from the average of the items.

Analysis Plan

Data cleaning and analyses was performed with R version 4.3.2 (2023-10-31) and R Studio (2024.04.2+764). Preliminary analysis included examination of missing data, outliers, sample characteristics (e.g. prevalence rates of perpetration, etc.), baseline differences between condition samples, and other irregularities in the sample. Data exclusion followed participant criteria and attention checks indicated in the methods section. Outliers were identified using interquartile range (IQR) fences at 1.5 x IQR and 3 x IQR and, subsequently, winsorized. Statistical tests were analyzed for significance at $p < 0.05$.

Do racial-ethnic and gender-specific norms affect SV attitudes?

I first examined racial-ethnic and gender norms effects on four SV attitudes. Four analysis of variance (ANOVA) tests were conducted with norms condition (i.e. gender and racial-ethnic, gender only, and control) as the predictor variable and each of four SV attitudes as the dependent variable. I expect a significant effect by condition. Following the ANOVAs, I examined the η^2 (Eta squared) and pairwise comparisons with Tukey's HSD post-hoc analysis.

Do racial-ethnic and gender-specific norms demonstrate stronger effects than gender-only norms in reducing SV attitudes?

To examine pairwise differences between each condition, I conducted Tukey's HSD post-hoc analyses. Regressions were conducted to further examine the relationships between the conditions and dependent variables. Norms with greater proximity and identity salience are more effective at shifting behaviors (Agerström et al., 2016; Nolan et al., 2021). As such, I suspected a stronger effect of norms that are specific along two domains (i.e. racial-ethnicity and gender) as compared to gender-only norms for each of the 4 dependent variables. I also expected norms messaging to be negatively associated with all four dependent variables: 1) rape myth acceptance, 2) perceived appropriateness of alcohol-facilitated assault, 3) likelihood to sexually assault, and 4) future intentions to sexually coerce.

Exploratory Analyses

I conducted exploratory analyses to examine the effects of conditions and when controlling for other key constructs (e.g. past perpetration, sexism, social status, empathy, personality, and social desirability). For each dependent variable, I conducted linear regressions with the norms condition (gender- and racial-ethnic norm, gender only norms, and control) as the predictor variable while controlling for a single variable. I also examined moderation effects with the addition of an interaction term.

Results

Effect of Intersectional Norms

The analysis of variance results indicate condition did not have a statistically significant effect on rape myth acceptance, $F(2,388) = 0.34$, $p = 0.71$, $\eta^2 = .001$), appropriateness of alcohol-facilitated sexual assault, $F(2,388) = 0.72$, $p = 0.49$, $\eta^2 = .004$), likelihood to assault, $F(2,388) = 0.2$, $p = 0.82$, $\eta^2 = .001$), or future intentions to coerce, $F(2,388) = 0.28$, $p = 0.76$, $\eta^2 = .001$). Post-hoc pairwise comparison was not conducted based on the non-significant ANOVA results

I employed linear regressions¹ to examine the strength and direction of the effects. There was no statistically significant association of condition on rape myth acceptance, appropriateness of alcohol-facilitated sexual assault, likelihood to assault, or future intentions to coerce (see Appendix C). Although neither is statistically significant, the effects of intersectional norms conditions are in the expected direction for rape myth acceptance and likelihood to assault. Contrary to expectations but not statistically significant, participants in the intersectional

¹ Linear regression residuals revealed a non-normal distribution. Transformations were employed and additional non-parametric analyses performed with the Kruskal-Wallis test. Results confirm no statistically significant effect of condition on rape myth acceptance ($H(2) = 0.48$, $p = .79$), appropriateness of alcohol-facilitated sexual assault ($H(2) = 1.58$, $p = .45$), likelihood to assault ($H(2) = 0.91$, $p = .64$), or future intentions to coerce ($H(2) = 0.79$, $p = .67$). To facilitate interpretation, this paper's results presents the simple linear regressions.

condition—as compared to those in control—are estimated to report increased intentions to coerce and appropriateness of alcohol-facilitated assault.

Exploratory Analyses

Consistent with the results of the primary analyses, neither the gender-only nor the intersectional condition was statistically significant when controlling, individually, for past perpetration, sexism, status, attitudes towards sexual violence, empathy toward survivors, social desirability, and the Big Five (see results in Appendices E-G). Moderation analyses were also conducted with the aforementioned variables and revealed that no interaction terms were statistically significant (see Appendices H-K). There was one exception to these results. Past history of perpetration moderated the effects of the intersectional condition on perceived appropriateness of alcohol-facilitated assault, such that participants with a history of perpetration reported greater appropriateness of alcohol-facilitated sexual assault than those who have not perpetrated. While this result supports prior findings, it is notably the single significant interaction amid the 28 models explored.

Discussion

This study had two primary aims: 1) with a racially diverse sample, extend established findings—among primarily white samples—regarding the positive effects of norms interventions in reducing risk factors for perpetration and 2) investigate the effects of adding racial-ethnic specificity in social norms messaging. To do so, this study employed three conditions: control, gender-only, and racial-ethnic and gender-specific social norms. Neither experimental condition resulted in statistically significant effects. These findings are unexpected and inconsistent with a small but important body of research exploring social norms interventions and the prevention of sexual violence.

The results of Study 1 did not support the main hypotheses that racial-ethnic specific norms strengthen the effects of gender-only norms messaging. These findings did not change after controlling for known risk and protective factors and examining possible moderations. In lieu of making broader claims about the efficacy of social norms interventions and because these findings diverge from the prior literature, I further probed the manipulation and sample characteristics.

The manipulation was previously utilized and resulted in significant findings (Zounlome & Wong, 2018). However, the present study's procedures deviate from prior research in two important ways. First, in an effort to obtain a diverse sample comprised in largely of men of color, this study was conducted online with a national sample. As a result, the participants do not share a social-cultural context (e.g. university, fraternity, team, etc.). The social norms literature highlights to the importance of proximity or shared context as relevant to strong and effective norms interventions (Agerström et al., 2016; Nolan et al., 2021). This may explain some of the non-significant findings.

Second, it is plausible that the desired or appropriate action addressed by the norms manipulation was already evident to participants. Social norms interventions are particularly valuable when the appropriate or effective behavior is unclear. In these circumstances, people depend on norms to ascertain how to act. (Nolan et al., 2021). This data was collected in 2023, at least five years after Zounlome & Wong (2018) initially employed the manipulation. The #MeToo Movement gained momentum in late 2017 and early 2018 with sustained public

visibility through the early 2020s. During this time, numerous investigative journalism stories, legal cases, and policy changes received international attention. As a result, there were significant shifts in public opinion and perception of sexual assault as compared to five years prior to #MeToo (Brown, 2022). “Research clearly shows that social norms interventions are more likely to influence behavior when the situation is ambiguous,” (Nolan et al., 2021, p. 415). Perhaps the appropriate behavior was indeed well-defined.

Further examination of participants’ attitudes toward alcohol and consent corroborates the suspicion that the socially appropriate behaviors are already well-defined. Participants in this sample overwhelmingly endorsed healthy attitudes towards consent and alcohol ($M = 4.3$, $SD = 0.7$). From the participants’ perspective there is no ambiguous situation. Consequently, participants do not need and would not seek norms to help guide their behavior. Among the sample, the situation also failed a core criterion for norms intervention. There was no misperception to be corrected. Only 35.7% and 24.3% of participants in the gender-only condition and intersectional condition, respectively, found the described norms incongruent with their perception. Without introducing new information and creating dissonance, it follows that this manipulation would not result in significant differences.

This study also assessed participants’ degree of sexism. Unlike attitudes toward alcohol and consent—which were overwhelmingly healthy—sexist beliefs followed a normal distribution in this sample ($M = 2.8$, $SD = 0.8$). This affirms the measure’s resistance to demand characteristics and indicates the considerable acceptance of sexism, at least in this sample. Such widespread endorsement of sexist beliefs position sexism as a natural target of future norms messaging. Masculinities and gender are well-studied in both the psychological and sociological approaches to perpetration. Adherence to traditional gender roles and sexist beliefs are consistently identified as risk factors (Loh et al., 2005) for perpetration. Addressing sexism and inequitable attitudes is core to a multi-pronged, gender transformation violence prevention approach (Brush & Miller, 2019). By objectifying and dehumanizing potential victims and affording justification for aggressive behavior, sexist beliefs facilitate the use of violence. Indeed, holding and—importantly—perceiving prevalent sexist beliefs facilitates perpetration. As a result, to further investigate the effect of racial-ethnic specific norms, I focused the Study 2 manipulation on sexism. Addressing norms about sexism is a viable but less overt path to addressing sexual violence perpetration.

Study 2

The aims of this study remain focused on the differential effects of intersectional norms (i.e. race and gender jointly) and gender-only norms messaging. In this study, I expected both norm conditions to have a significant effect on risk and protective factors, however, intersectional norms are expected to have a larger effect. I also expected norms conditions to be negatively associated with aggression, self-reported likelihood to sexually assault, rape myth acceptance, and sexism and positively associated with bystander intervention and prosociality.

Methods

Participants

The study recruited men ages 18-26 who reside in the United States. The pre-registered exclusion criteria consisted of participants who did not match study criteria ($n = 60$), scored below 0.5. on reCAPTCHA ($n = 18$), and failed attention and manipulation comprehension

checks ($n = 51$). After exclusions ($n = 129$), the final sample was comprised of 574 men (28.6% Asian, 28.6% White, 24.6% Latino, and 18.3% Black; $Mean_{age} = 22.8$, $SD_{age} = 2.3$, $Range_{age} = 18-26$).

Procedure

The data was collected online through Prolific. Participants viewed the study posting, opted-in to the study, and completed informed consent. Participants completed a battery of measures and were then randomly assigned to one of three manipulation conditions: 1) gender-specific norms, 2) racial-ethnic and gender-specific norms, and 3) control condition. In the experimental conditions, participants were presented with norms about men (condition 1) or racial-ethnic concordant men (condition 2), and then, prompted to complete comprehension questions. Adapting Durán and colleagues' (2018) cover story and manipulation, this study was described as a validation study. The experiment presented the norms data as results from a recent study. Indeed, the norms were derived from real data; however, the presented scores were adjusted. To ensure the norms messages were unambiguously low in sexism and to emphasize the desired attitudes, the manipulation presented scores equal to the mean minus one standard deviation. This method mirrors the low sexism condition utilized in Durán (2018), which found low sexism peer norms had a significant effect on rape proclivity. Participants were then presented personalized results from the hostile subscale of the Ambivalent Sexism Inventory (Glick & Fiske, 1996) alongside the norms data. I utilized cognitive testing to refine the manipulation and enhance credibility. Next, participants completed comprehension questions. Participants in the control condition were presented a similar cover story, but the content focused on environmentalism. Next, participants completed six outcome measures: 1) aggression (word fragment completion task), 2) self-perceived likelihood of committing sexual assault, 3) rape myth acceptance, 4) sexism, 5) bystander intervention scale, and 6) prosociality (word fragment completion task). To conclude the study, participants completed demographic questionnaires.

Dependent Variables

Descriptive statistics for the following variables can be found on Table 2.

Aggression. Adapted from Anderson et al. (2003) participants were presented with six word fragments (i.e. H_T, B__T, INS__T, H_R_, H_VE, R_PE) and tasked with completing the word under time restrictions. All fragments have multiple completion options, including aggression (e.g. HIT) and neutral words (e.g. HAT). A score was derived from the number of aggression words divided by total completed words.

Self-Perceived Likelihood of Committing Sexual Assault. Zounlome & Wong (2018) adapted 6-items from Briere and Malamuth (1983) to assess likelihood of using sexual violence if assured of no consequences. Participants received the instructions to indicate likelihood on a 5-point scale: "If you could be assured that you could in no way be punished for engaging in the following acts, how likely, if at all, would you be to engage in such acts?." For example: "Having sex with someone who is not sober?" The score was derived from the aggregate of six items (three explicit and implicit sexual assault items). The 10 fillers were not included.

Rape Myth Acceptance. Adapted from McMahon & Farmer (2011), this variable utilized 10 items on a 5-point scale. The variable was derived from the average of the items.

Table 2*Study 2 Dependent Variable Descriptives*

Measure	<i>M</i>	<i>SD</i>	Min	Median	Max	Alpha
Aggression	0.2	0.2	0.0	0.2	0.8	–
Likelihood to Sexually Assault	1.3	0.4	1.0	1.0	2.2	0.88
Rape Myth Acceptance	1.7	0.7	1.0	1.5	3.5	0.85
Sexism	3.2	0.9	1.4	3.2	5.8	0.64
Bystander Intentions	3.7	0.7	1.8	3.7	5.0	0.87
Prosociality	0.5	0.3	0.0	0.5	1.0	–

Note. *M* = Mean; *SD* = Standard Deviation.

Sexism. The Modern Sexism Scale (Swim et al., 1995) is an 8-item measure on a 5-point scale. The variable was derived from the average of the items. Notably, this scale's items are distinct from those presented in the manipulation and adapted from Glick and Fiske (1996).

Bystander Intervention Intentions. Based on the updated McMahon and colleagues (2011) measure, this variable utilizes 11 items on a 5-point scale. The variable is derived from the average of the items.

Prosociality (fragment completion task). Adapted from Sestir & Bartholow (2010), participants were presented with six word fragments and tasked with completing the word (i.e. H_P, S_E, A_D, PR__E_T, CO__ORT, L_V_). All fragments have multiple completion options, including prosocial and neutral words (e.g. “H_P” could be HELP or HARP). Score was derived from the number of prosocial words divided by total completed words.

Analysis Plan

R version 4.3.2 (2023-10-31) and R Studio (2024.04.2+764) were utilized to clean and analyze the data. Exclusions followed the criteria described in the participant section. To address outliers, values greater or less than 1.5 X the interquartile range (IQR) were winsorized. Statistical tests were analyzed for significance at $p < 0.05$.

Do intersectional (gender and race) and gender-specific norms differentially affect SV risk factors?

To examine this question, I conducted six ANOVAs with norms condition (i.e. gender and racial-ethnic norms, gender-only norms, and control) as the predictor variable and each of risk and protective factors as the dependent variable. To further investigate the effect of condition, I also examined the ANOVAs' η^2 (Eta squared) to determine the proportion of the total variance attributable to the condition. Tukey's HSD post-hoc analysis was conducted to examine pairwise differences between each condition. I expected both experimental conditions to have a significant effect on risk and protective factors, and a larger effect of intersectional norms, as compared to gender-specific norms, for each of the dependent variables.

Do racial-ethnic specific norms reduce risk and increase protective factors for sexual violence?

I conducted regression analyses with norms condition as the predictor variable and each of SV risk factors as the dependent variable to investigate this question. I expected intersectional norms to be negatively associated with aggression, self-reported likelihood to sexually assault,

rape myth acceptance, and sexism. Conversely, I expected intersectional norms to be positively associated with bystander intervention and prosociality.

Is the effect of condition dependent on racial-ethnicity? How do effects compare between conditions?

The aforementioned ANOVA, post-hoc, and regression analysis was repeated with the addition of an interaction term (dummy variable: 1 = men of color, 0 = white men). For men of color, I expected both experimental conditions to be significant and the intersectional norms condition to produce a larger effect.

Results

Effects of Intersectional Norms and Gender-only Norms

The results revealed a main effect of condition on Rape Myth Acceptance, $F(2,571) = 11.78, p < 0.001, \eta^2 = .04$. Post hoc analyses indicate that, when compared to control participants, rape myth acceptance is lower for participants in the intersectional norms condition ($p < .001$) than for those in the gender-only condition ($p = 0.002$). However, the pairwise comparison of the intersectional norms and gender-only norms conditions was non-significant ($p = 0.43$). The results of the regression² indicated a significant negative association of norms condition on rape myth acceptance but only explained a small amount of variance ($R^2 = 0.04, F(2,571) = 11.78, p < .001$). Intersectional norms yielded a stronger negative effect ($b = -0.32, SE = 0.07, t(571) = -4.68, p < .001, 95\% CI[-0.45, -0.18]$) than gender-only condition ($b = -0.23, SE = 0.07, t(571) = -3.44, p < .001, 95\% CI[-0.37, -0.10]$).

The results revealed a main effect of condition on sexism, $F(2,571) = 3.16, p = 0.04, \eta^2 = .01$, and a significant effect of the pairwise comparison of the intersectional condition and control ($p = 0.04$). The comparisons of the control-to-gender-only and the intersectional-to-gender-only conditions were non-significant. Condition explained a small amount of the variance in sexism ($R^2 = 0.01, F(2,571) = 3.16, p = 0.04$). Intersectional norms yielded a significant negative effect on sexism ($b = -0.21, SE = 0.09, t(571) = -2.39, p = .02, 95\% CI[-0.39, -0.04]$), however, the gender-only condition was non-significant ($b = -0.16, SE = 0.09, t(571) = -1.86, p = .06, 95\% CI[-0.37, -0.01]$).

There was no significant effect of condition on aggression, $F(2,567) = 0.64, p = 0.53, \eta^2 = .002$, self-perceived likelihood of committing sexual assault, $F(2,543) = 0.94, p = 0.39, \eta^2 = .003$, bystander intervention intentions, $F(2,571) = 0.31, p = 0.73, \eta^2 = .001$, or prosociality, $F(2,566) = 0.68, p = 0.51, \eta^2 = .002$. The pairwise comparison of condition on each of these risk and protective factors was non-significant. Likewise, the regression results parallels these findings with no significant associations of condition on aggression ($R^2 = 0.002, F(2,567) = 0.64, p = 0.53$), self-perceived likelihood of committing sexual assault ($R^2 = 0.003, F(2,543) = 0.94, p = 0.39$), bystander intervention ($R^2 = 0.001, F(2,571) = 0.31, p = 0.73$), or prosociality ($R^2 = 0.002, F(2,566) = 0.68, p = 0.51$).

² While regression residuals did not meet normality assumptions, this paper presents the simplest models. Additional models were investigated, and results of models with log transformation ($b_{genderonly} = -0.12, SE = 0.04, t(571) = -3.41, p < .001, 95\% CI[-0.20, -0.05]$; $b_{intersectional} = -0.16, SE = 0.04, t(571) = -4.48, p < .001, 95\% CI[-0.24, -0.09]$), squareroot transformation ($b_{genderonly} = -0.08, SE = 0.02, t(571) = -3.44, p < .001, 95\% CI[-0.13, -0.04]$; $b_{intersectional} = -0.11, SE = 0.02, t(571) = -4.59, p < .001, 95\% CI[-0.16, -0.06]$) and Kruskal-Wallis Test ($H(2) = 19.13, p < .001$) revealed consistent significant results of condition on rape myth acceptance.

Racial-Ethnic Identity as a Moderator

The results of the two-way ANOVAs revealed race-ethnicity did not moderate effects on aggression ($p = 0.66$), self-perceived likelihood of committing sexual assault ($p = 0.40$), rape myth acceptance ($p = 0.34$), sexism ($p = 0.30$), bystander intervention ($p = 0.21$), and prosociality ($p = 0.98$). As a result of non-significant interaction effects, post-hoc and regression analyses are not reported.

Discussion

This study sought to explore the effects of intersectional norms (race and gender jointly) in addressing risk and protective factors for sexual violence perpetration. The norms manipulation focused on sexist beliefs, which is a strong predictor of perpetration but, to the average person, less explicitly linked to sexual violence.

Both experimental conditions, gender-only and intersectional norms, reduced rape myth acceptance and sexism. The results of the gender-only condition support the findings of prior studies and demonstrate the efficacy of social norms intervention with racial-ethnically diverse samples. The results of the intersectional condition supported the hypothesis and provide initial evidence that racial-ethnic specific norms are indeed an effective contribution into the structure of social norms messaging. Intersectional norms reduced rape myth acceptance and sexism—two major risk factors for perpetration. Surprisingly, this effect was not moderated by minoritized race. That is, intersectional norms have an effect on racially minoritized and dominant group members alike.

The social norms messaging did not result in statistically significant effect on four other measures: likelihood to assault, bystander intervention, aggression, and prosociality. There are, at least, two likely explanations for these results. First, given the brief nature of the manipulation, sexism—the core subject of the messaging—may have been too distal to affect these constructs. Second, measurement concerns may have affected the results. The distributions for likelihood to assault ($M = 1.3$, $SD = 0.4$), bystander intervention ($M = 3.7$, $SD = 0.7$), and aggression ($M = 0.2$, $SD = 0.2$) were exceedingly skewed indicating healthy attitudes. The notable skew may reveal demand characteristics.

These data provide initial support to the efficacy of norms messaging specific to both gender and racial-ethnicity. Such results support further investigation towards the utilization of identity-specific and culturally relevant messaging in real-world prevention. Notably, participant race did not explain the effect suggesting more exploration is needed to understand the contexts and individual differences that facilitate this effect. Identification with the referent strengthens norms intervention and could further explain these results. Study 3 aims to conduct initial exploration of group self-esteem and racial-ethnic identification as possible moderators.

Study 3

The aim of Study 3 is to explore whether the effects of racially-specific referents are stronger for those with greater collective self-esteem. Studies have found identification with the referent group strengthens the effect of social norms interventions (Christensen et al., 2004; Xiao et al., 2023). These studies have examined the effect of university identification (Christensen et al., 2004; Zounlome & Wong, 2018), identification with residence hall (Xiao et al., 2023), and other referent group characteristics (Zhuang et al., 2024). As revealed by Study 2, group membership alone does not drive the effects of group-specific messaging. Other connections

between self-concept and group membership, such as the evaluation of the group or sense of being a valued group member, may have a greater role in the effect of racial-ethnic specific interventions. However, as previously noted, norms messages with racial-ethnic specific referent groups have not been studied. Consequently, little is known about the effect of esteem related to group membership and identification with the same group. To better understand this possible moderator, a re-analysis of data collected for Studies 1 and 2 was conducted. This analysis examines the moderation effect of Collective Self-Esteem Race and its four subscales: 1) Membership Esteem assesses worthiness as a member of the social group; 2) Private Collective Self-Esteem measures participants' evaluation of the racial group; 3) Public Collective Self-Esteem measures perceptions of how others evaluate the social group; and 4) Importance to Identity assesses the role of social group membership in self-concept (Luhtanen & Crocker, 1992). These distinct subscales will provide insight into how aspects of group membership, its importance, and evaluation of the group interact with social norms interventions.

Methods

Procedure & Participants

The procedures and participants for re-analysis 3A and 3B are identical to those described in Study 1 and Study 2, respectively. Participants completed measures for individual differences and then, were randomly assigned to one of three conditions (i.e. control, gender-specific norms, or racial-ethnic and gender-specific norms). Subsequently, participants completed the dependent variable measures. To support the aims of this analysis, participants then completed the Collective Self-esteem—Race (Luhtanen & Crocker, 1992) questionnaire. The first sample was comprised of 391 men (30.2% White, 26.1% Asian, 23.0% Latino, and 20.7% Black; Mean_{age} = 21.5, SD_{age} = 1.9, Range_{age} = 18-24). The second sample consisted of 574 men (28.6% Asian, 28.6% White, 24.6% Latino, and 18.3% Black; Mean_{age} = 22.8, SD_{age} = 2.3, Range_{age} = 18-26).

Measures

Collective Self-Esteem. This is a 16-item measure of racial identity, or one's connection to one's own racial group (Luhtanen & Crocker, 1992). The items were scored on a 7-point scale and aggregated to form four distinct subscales: membership esteem, private collective self-esteem, public collective self-esteem, and importance to identity.

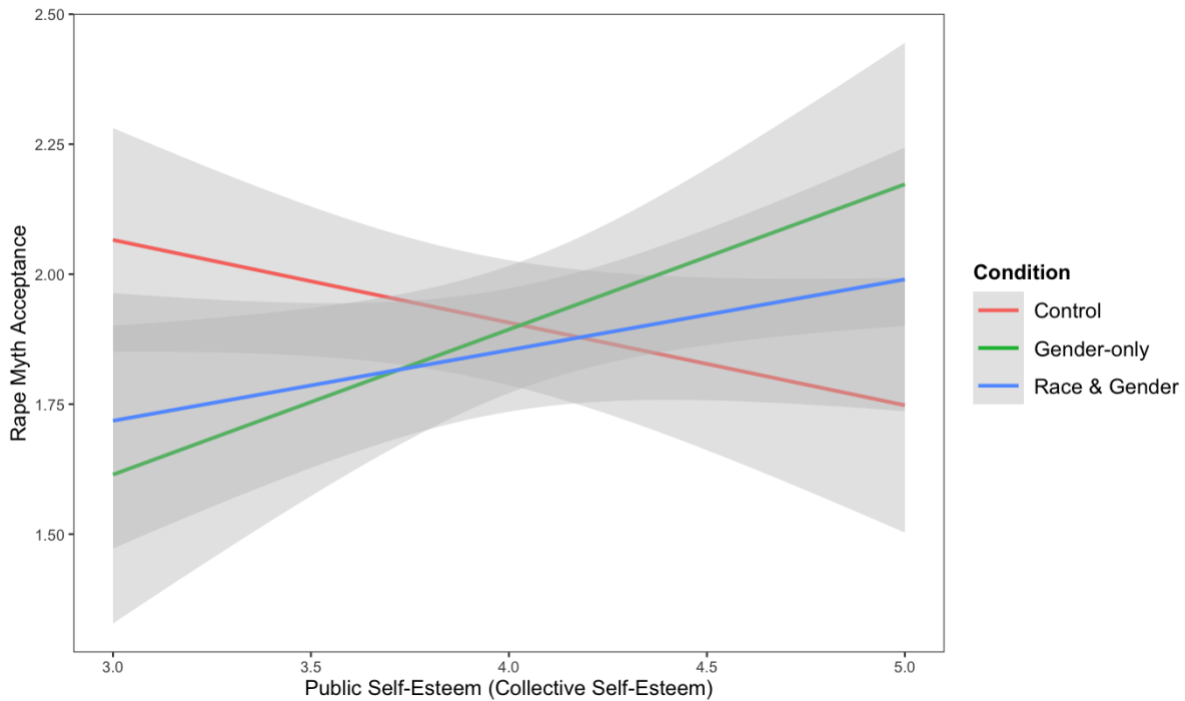
Dependent Variables

Re-analysis 3A. As described in Study 1, this study utilized scales to measure rape myth acceptance, appropriateness of alcohol-facilitated sexual assault, likelihood to commit sexual assault, and intentions to sexually coerce.

Re-analysis 3B. Identical to those described in Study 2, the six dependent variables in this study were aggression, self-perceived likelihood of committing sexual assault, rape myth acceptance, sexism, bystander intervention intentions, and prosociality.

Analytic Plan

To investigate the moderating effect of racial-ethnic identification, two-way ANOVAs were performed to analyze the effect of condition (i.e. control, gender-specific norms, or racial-ethnic and gender-specific norms) and each subscale of Collective Self-Esteem (i.e. importance to identity, membership self-esteem, private collective self-esteem, and public collective self-esteem). Each sample is treated as a separate study and analyzed independently.

Figure 2*Rape Myth Acceptance as Predicted by Condition and Public Self-Esteem*

Results

Re-analysis 3A

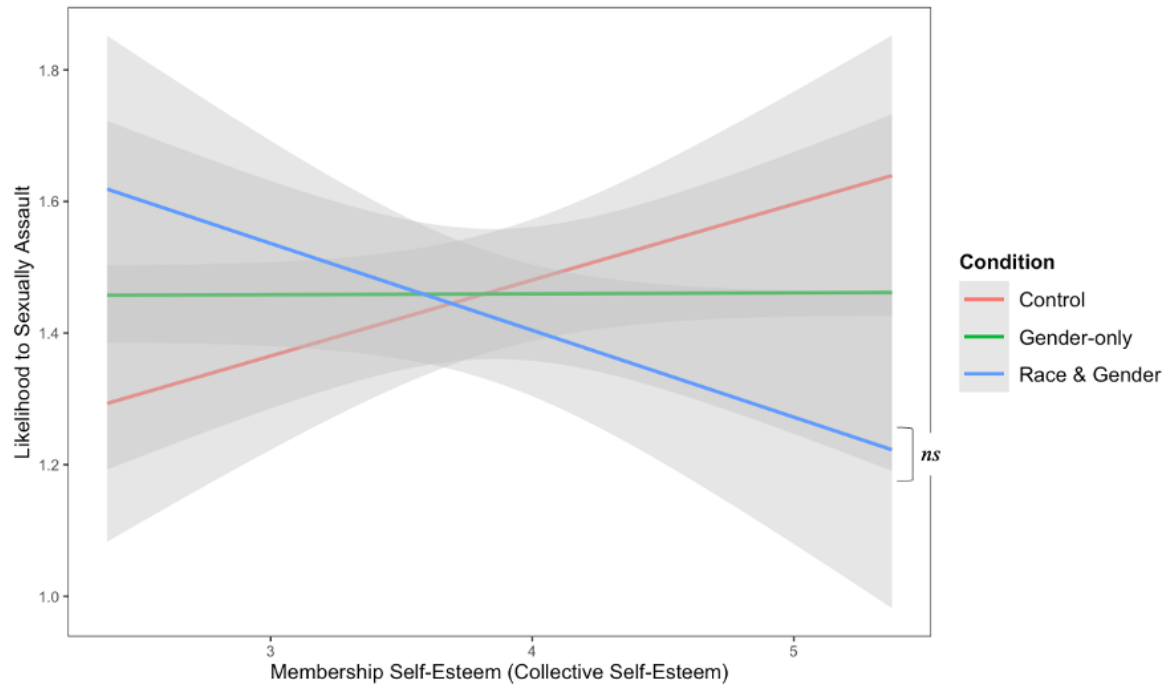
Rape Myth Acceptance. The two-way ANOVA revealed a statistically significant interaction effect of condition and public collective self-esteem on rape myth acceptance ($F(2, 385) = 4.26, p = 0.01, \eta^2 = 0.02$; Figure 2). However, there was no statistically significant interaction effect of condition and importance to identity ($F(2, 385) = 2.77, p = 0.06, \eta^2 = 0.01$), membership self-esteem ($F(2, 385) = 1.20, p = 0.30, \eta^2 = 0.006$), or private collective self-esteem ($F(2, 385) = 0.44, p = 0.65, \eta^2 = 0.002$).

Appropriateness of Alcohol-Facilitated Sexual Assault. No dimension of racial-ethnic identification moderated the effect of condition on perceived appropriateness of alcohol-facilitated assault (importance to identity: $F(2, 385) = 0.57, p = 0.57, \eta^2 = 0.003$, membership self-esteem: $F(2, 385) = 0.44, p = 0.64, \eta^2 = 0.003$, private collective self-esteem: $F(2, 385) = 0.68, p = 0.51, \eta^2 = 0.003$, public collective self-esteem: $F(2, 385) = 1.35, p = 0.26, \eta^2 = 0.007$).

Likelihood To Commit Sexual Assault. Membership self-esteem significantly moderated the effect of condition, such that those in the intersectional condition with high membership-esteem report the lowest likelihood to assault ($F(2, 385) = 3.16, p = 0.04, \eta^2 = 0.02$; Figure 3). Importance of racial-ethnic identity, private collective self-esteem, and public collective self-esteem did not significantly moderate the effect of condition on the likelihood to assault (importance of racial-ethnic identity: $F(2, 385) = 2.75, p = 0.07, \eta^2 = 0.01$, private self-esteem: $F(2, 385) = 0.51, p = 0.60, \eta^2 = 0.003$, public self-esteem: $F(2, 385) = 0.45, p = 0.64, \eta^2 = 0.002$).

Figure 3

Likelihood to Sexually Assault as Predicted by Condition and Membership Self-Esteem



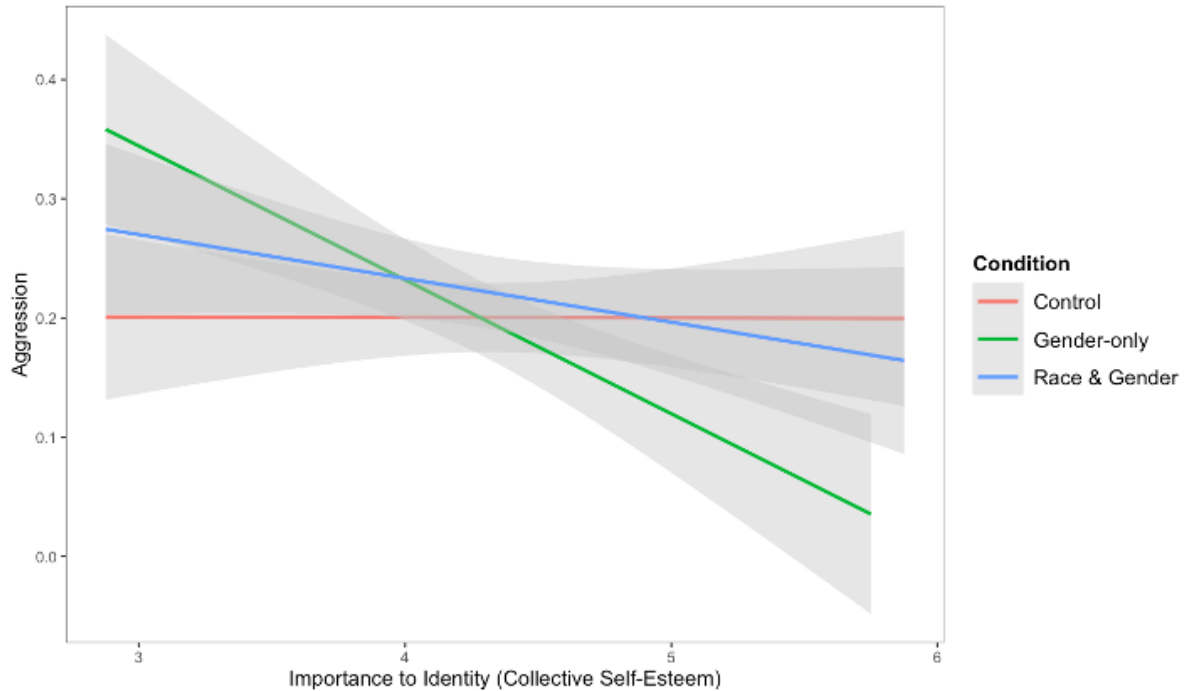
Note. ns = not significant.

Intentions To Sexually Coerce. Analysis revealed no statistically significant interaction effect of condition and collective self-esteem on intentions to coerce (importance to identity: $F(2, 385) = 0.92, p = 0.40, \eta^2 = 0.005$, membership self-esteem: $F(2, 385) = 1.02, p = 0.36, \eta^2 = 0.005$, private collective self-esteem: $F(2, 385) = 1.13, p = 0.32, \eta^2 = 0.005$, public collective self-esteem: $F(2, 385) = 0.33, p = 0.72, \eta^2 = 0.002$).

Re-analysis 3B (sample 2)

Aggression. Importance of racial ethnicity to participants' identity significantly moderated the effect of condition, such that aggression is lower among those who hold racial-ethnicity in high importance to identity ($F(2, 564) = 5.33, p = 0.005, \eta^2 = 0.02$). The interaction reveals a crossover effect (Figure 4) suggesting mean aggression is reduced in the intersectional condition ($b = -0.06, SE = 0.02, t(564) = -3.07, p = 0.002, 95\% CI[-0.10, -0.02]$) and lowest gender-only condition ($b = 0.05, SE = 0.02, t(564) = 2.58, p = 0.01, 95\% CI[0.01, 0.09]$) when importance to identity is high. No other subscale of collective self-esteem moderated aggression (membership self-esteem: ($F(2, 564) = 1.07, p = 0.35, \eta^2 = 0.004$), private collective self-esteem: ($F(2, 564) = 0.06, p = 0.94, \eta^2 = 0.004$), public collective self-esteem: ($F(2, 564) = 1.04, p = 0.36, \eta^2 = 0.004$).

Likelihood to Sexually Assault. Collective self-esteem did not moderate the effect of condition on likelihood to assault (importance to identity: $F(2, 540) = 0.86, p = 0.42, \eta^2 = 0.003$, membership self-esteem: $F(2, 540) = 1.26, p = .28, \eta^2 = 0.004$, private collective self-esteem: $F(2, 540) = 0.23, p = 0.80, \eta^2 = 0.0008$, and public collective self-esteem: $F(2, 540) = 0.88, p = 0.41, \eta^2 = 0.003$).

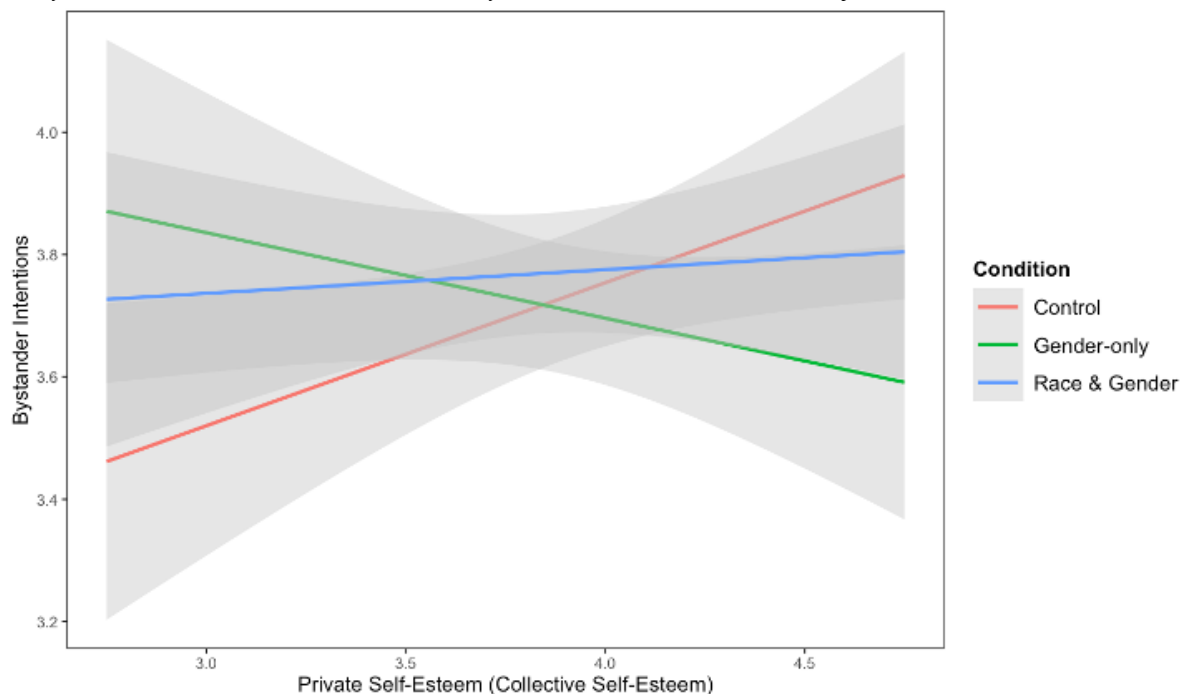
Figure 4*Aggression as Predicted by Condition and Importance to Identity*

Rape Myth Acceptance. The results revealed no significant interaction of collective self-esteem and condition (importance to identity: $F(2, 568) = 0.41, p = 0.67, \eta^2 = 0.001$, membership self-esteem: $F(2, 568) = 0.99, p = 0.37, \eta^2 = 0.003$, private collective self-esteem: $F(2, 568) = 0.31, p = 0.74, \eta^2 = 0.001$, and public collective self-esteem: $F(2, 568) = 1.12, p = 0.33, \eta^2 = 0.004$).

Sexism. Collective self-esteem did not moderate the effect of condition on sexism (importance to identity: $F(2, 568) = 0.43, p = 0.65, \eta^2 = 0.001$, membership self-esteem: $F(2, 568) = 0.46, p = 0.63, \eta^2 = 0.002$, private collective self-esteem: $F(2, 568) = 1.79, p = 0.17, \eta^2 = 0.006$, public collective self-esteem: $F(2, 568) = 0.35, p = 0.70, \eta^2 = 0.001$).

Bystander Intervention. Only one subscale of collective self-esteem moderated the effect of condition on intentions to intervene. The effect of condition on bystander intentions was attenuated by high private self-esteem ($F(2, 564) = 3.02, p = 0.05, \eta^2 = 0.01$; Figure 5). Compared to the control group, participants in the intersectional condition had fewer intentions intervene ($b = -0.18, SE = 0.09, t(568) = -2.06, p = 0.04, 95\% \text{ CI}[-0.36, 0.008]$) and those in the gender-only condition reported the least intentions intervene ($b = 0.19, SE = 0.09, t(568) = 2.20, p = 0.03, 95\% \text{ CI}[0.02, 0.36]$). There was no significant moderation on condition by importance to identity ($F(2, 564) = 0.14, p = 0.87, \eta^2 = 0.0005$), membership self-esteem ($F(2, 564) = 0.41, p = 0.66, \eta^2 = 0.001$), or public collective self-esteem ($F(2, 564) = 0.46, p = 0.63, \eta^2 = 0.002$).

Prosociality. Collective self-esteem did not moderate the effect of condition on prosociality (importance to identity: $F(2, 563) = 0.62, p = 0.54, \eta^2 = 0.002$, membership self-esteem: $F(2, 563) = 0.47, p = 0.62, \eta^2 = 0.002$, private collective self-esteem: $F(2, 563) = 1.04, p = 0.35, \eta^2 = 0.004$, public collective self-esteem: $F(2, 563) = 0.62, p = 0.54, \eta^2 = 0.002$).

Figure 5*Bystander Intentions as Predicted by Condition and Private Self-Esteem*

Discussion

To further understand the relationship between norms messaging and effects on factors associated with perpetration, this re-analysis examined the moderating effect of group self-esteem and identification as measured by the four subscales of the Collective Self-Esteem (Luhtanen & Crocker, 1992). The two-way ANOVAs included an interaction term to examine effects on predictors of perpetration. Results revealed collective self-esteem significantly moderated effects on four of ten outcome variables in two distinct samples. Notably, there was variation in which subscale moderated each of the four outcomes and, also, in the direction of the effect.

Increase in Risk Factors

Racial identification moderated the effect on rape myth acceptance and bystander intervention intentions such that the experimental conditions yielded iatrogenic, or undesirable, results. That is, control group participants, on average, had the least acceptance of rape myths and had the greatest intentions to intervene. This effect was unexpected.

The effect of condition on rape myth acceptance and bystander intention were dependent on public self-esteem and private-self esteem, respectively. Both of these subscales center on the evaluation—whether by the individual or public—of the social group. Positive evaluations of the group may relieve young men from upholding attitudes and behaviors that counter stereotypes. That is, reflecting positively on one's social group—or even concerns regarding implications of the self on the racial group—may be lessened when the group is positively evaluated. More data and investigation are needed to substantiate this premise.

Reduction in Risk Factors

As expected, collective self-esteem moderated the effect of condition such that higher social group self-esteem and identification strengthened the effect of conditions and decreased two risk factors for perpetration: likelihood to assault and aggression. This effect was consistent on both outcome variables for the gender-only condition. However, the moderation effect was only significant for the slope of the racial-ethnic specific norms message on aggression. The moderation effect of racial-ethnic specific norms message on likelihood to assault was not statistically significant.

In contrast to the moderations which increased risk factors, both of the subscales in this instance—membership self-esteem and importance to identity—are more central to the individual instead of evaluative of the group. Young men who worry about being a “good group member” and who hold that group identity as important to self may be more receptive to, and motivated to conform to, group norms. In these instances, collective self-esteem may be both an incentive for norm conformity and a protective factor against perpetration.

The inconsistent moderation effect of racial identification warrants further investigation. Racial-ethnic identification is a significant and relevant component but alone does not explain the process by which identity-specific norms are effective. There are likely other group processes and individual differences associated with, but distinct from, identification that facilitate identity-specific norms intervention.

General Discussion

Sexual violence is not an intractable problem; however, the dearth of effective tactics by which to reduce perpetration have resulted in sustained rates of violence (Bonar et al., 2020; Koss et al., 2022). Social norms interventions have successfully shifted behaviors in several domains and, indeed, demonstrate promise in addressing sexual violence. Social norms interventions utilize the desire to understand how to behave effectively and the fundamental need for belonging to drive conformity to a desired behavior. An emerging body of research has begun to examine the efficacy of norms intervention in reducing risk factors for perpetration (Dardis et al., 2016; Durán et al., 2018; Kilmartin et al., 2008; Wong et al., 2024; Zounlome & Wong, 2018). However, very little is known about the effect of referent groups (Wong et al., 2024). Social identity theory and ingroup processes suggest that same race referents may be powerful catalysts toward conformity, especially in support of the ingroup’s goals and interests (Smith & Louis, 2008; Tajfel, 2010; Turner & Reynolds, 2012). The present study examined whether same race referents could also be effective messengers for anti-violence social norms interventions.

To test the effects of racial-ethnic specific referents, this investigation conducted two distinct social norms experiments comparing gender-only referents, same gender and race referents, and a control condition. Notably, both samples were racially diverse with approximately 70% of participants identifying as men of color. Contrary to expectations, Study 1 found no significant effects of norms condition on four variables associated with perpetration: rape myth acceptance, intention to coerce, likelihood to assault, and appropriateness of alcohol-facilitated assault. In contrast, Study 2 found statistically significant effects in reducing rape myth acceptance and sexism—two strong and consistent predictors of perpetration. There were no significant effects on likelihood to assault, intentions to intervene, or on implicit measures of aggression and prosociality. The results in both studies remained consistent even after controlling for, and examining moderation effects of, known predictors of perpetration.

These results provide initial support for the main aims of this paper and some important insights about efficacy. First, social norms interventions can be effective at addressing risk factors for perpetration. This study employed very brief interventions with no opportunity for social observation and no additional doses—or boosters—of the message. Despite the brief, single manipulation design, the intervention resulted in decrease in rape myth acceptance and sexism. Implementation of social norms interventions are typically more robust. In real-world contexts, social norms interventions are often recurring and engage marketing campaigns to reinforce the aims, message credibility, and promote efficacy (Banyard Victoria et al., 2018). However, to be effective, interventions and its attributes must follow key principles for efficacy. For success, the messages must be credible, referents meaningful, and desired behavior misperceived (Nolan et al., 2021). In addressing sexual violence, the content of the message must consider evolving public discourse and ensure the target audience misperceives the associated norm beliefs and behaviors. With greater public rhetoric condemning overt sexual violence, espousing support for survivors, and endorsing accountability for perpetrations, the focus of the message may be most effective when indirectly addressing perpetration (e.g. sexism, bystander behavior, survivor support, etc.). As such the intervention design needs to carefully evaluate and consider the target population's current beliefs and behaviors (Nolan et al., 2021).

Second, racial-ethnic specific referents are effective in social norms interventions. However, the results do not indicate racial-ethnic referents further strengthens efficacy as compared to gender-only referents. Consequently, the addition of racial-ethnic specific referents should be considered carefully to avoid adverse consequences. For example, citing Black referents in a predominantly White environment may undermine message credibility, reinforce stereotypes, and create intergroup tensions. Conversely, racial-ethnic specificity for an identity-based student club may increase message credibility and receptivity. Perhaps race-specific referents may be useful in instances where the observed or prevalent outgroup behavior is undesirable. Comparisons with outgroups can prompt behaviors to differentiate and create distance from those groups (Turner & Reynolds, 2012). There may be additional processes operating in identity-based contexts to support racially-specific social norms interventions. However, it must be restated: the context and implications must be considered carefully as not to instigate deleterious intergroup consequences, and more investigation is needed to examine the contexts in which racial-ethnic specific referents boosts social norms interventions.

The study also examined the moderating effect of racial-ethnic identification on the norms conditions. In the first sample, public and membership collective self-esteem moderated rape myth acceptance and likelihood to assault, respectively. The results of the second sample, revealed group importance to identity and private collective self-esteem moderated aggression and bystander intentions, respectively. Unexpectedly, two instances—rape myth acceptance and bystander intentions—resulted in a cross over effect, consequently revealing the control group reported the healthiest attitudes. There were no significant moderating effects on likelihood to assault, sexism, prosociality, and—in sample 2—rape myth acceptance.

Limitations and Future Directions

This research establishes a novel body of work exploring racial-ethnic specific referents in social norms interventions and contributes to a promising literature on norms interventions to address sexual violence. This study provides initial support for the efficacy of racial-ethnic specificity referents, but more robust investigation is needed.

First, it is essential to understand the generalizability, mechanisms, and real-world application of these findings. For example, are these effects consistent across topics (e.g. nutrition, academic achievement, environmentalism, etc.)? What enables these effects? In this study, identification with the referent group revealed inconsistent moderation effects. However, previous research found identification to strengthen norm interventions. Consequently, more investigation is needed to draw definitive conclusions about the function of racial-ethnic identification in norms interventions. In the context of racial-ethnic referents, what other mechanisms motivate conformity? Research examining within group differences of racially-ethnically specific messages will aid in identifying mechanisms that yield efficacy and enhance interventions. Examining additional contextual variables, (e.g. sense of belonging, strength of relationships, etc.) in networks and communities (e.g. Black Student Association) will assist in understanding the pathways of race-specific referents in social norms interventions. Finally, limited research focuses on young men of color which restricts the effective design of norms intervention. Further investigation the perception of peers, perpetration and sexual violence, and risk factors for perpetration among men of color will shape the design of interventions.

This study did not compare key components of social norms interventions such as norm type, intervention message, and duration of effects. Research on the basic components of norms interventions continues to be necessary and will guide effective utilization of the Social Norms Approach. Such research will promote well-designed and precise interventions.

Norm Type. The effect of norm type (i.e. descriptive or injunctive norms) messages may be differentially affected by racial-ethnic specific referents. In contrast to descriptive norms, injunctive norms act as a magnet to encourage, or discourage, behavior (Paluck et al., 2010; Schultz, 2022). Where real-world observations may reinforce descriptive norms, referents may have greater influence on injunctive norms interventions (Heinicke et al., 2022).

Intervention Message. Unlike other topics targeted by social norms interventions (hand washing, recycling, vaccination, etc.), sexual violence perpetration faces unique complexity as the subject of norms interventions. Explicitly addressing sexual violence in the message of the intervention may not be effective due to a number of factors. Target audiences may seek to distance themselves from the topic, not see themselves as “part of the problem,” or demonstrate dissonance between beliefs about versus use of violence. Consequently, further testing of a wide array of intervention messaging is necessary. Such research could first compare messages targeting robustly studied risk factors for perpetration (*see Casey & Masters, 2017 and; Tharp et al., 2013*).

Duration of Effect. This study and the majority of experiential studies investigation social norms interventions only measured the immediate, short-term attitudinal effects. Additional exploration is needed to evaluate behavioral outcomes and whether effects are sustained over time. Without continued social proof, the effect of these interventions may erode. Consequently, it is essential to investigate the duration of effect and the contextual factors necessary for long-term efficacy.

Concluding Comment

Investigations of both racially-specific referent groups and the efficacy of social norms interventions to address perpetration are nascent. The current research provides initial support for the use of racial-specific referent groups in social norms interventions. With appropriately designed interventions, both gender-specific and intersectional referent groups result in desired

change. Indeed, these interventions demonstrate promise to address risk factors of perpetration but there are two important considerations. First, while this initial study of this referent group demonstrates promise for culturally specific prevention strategies, further investigation is required to ensure effective design and implementation of social norms interventions. Additionally, these interventions should be one element of a multi-pronged prevention plan addressing all levels of the social ecology. Such a plan follows the guidance of scholars, practitioners, and federal agencies (Banyard Victoria et al., 2018; Bonar et al., 2020; Casey & Lindhorst, 2009; DeGue et al., 2014; Wilkins et al., 2018) but also creates the necessary environment for sustained effect of the norms interventions. The accompanying prevention activities will reinforce and provide real-world verification of the social norms messaging further strengthening the efficacy of norms interventions.

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Appendix A

Study 1 Norms Statements by Condition

Experimental Conditions [gender-only / race and gender condition]	Control Condition
1. 74.3% of [men/same-race men] agree that the more alcohol a person drinks, the less that person can genuinely agree to sexual activity. 2. 82.1% of [men/same-race men] agree that when a person is drinking alcohol, they are not suggesting they are interested in participating in sexual activity. 3. 90.3% of [men/same-race men] agree that physical resistance shows a lack of legitimate agreement to sexual activity. 4. 89.1% of [men/same-race men] agree that verbal resistance shows a lack of legitimate agreement to sexual activity. 5. 90.5% of [men/same-race men] agree that saying “no” shows a lack of legitimate agreement to sexual activity. 6. 70.4% of [men/same-race men] agree that not saying anything at all shows a lack of legitimate agreement to sexual activity. 7. 81% of [men/same-race men] agree that expressing displeasure shows a lack of legitimate agreement to sexual activity. 8. 80% of [men/same-race men] agree that being drunk due to alcohol use shows a lack of legitimate agreement to sexual activity. 9. 90.6% of [men/same-race men] agree that being passed out due to alcohol or drugs use shows a lack of legitimate agreement to sexual activity. 10. 85.9% of [men/same-race men] believe that if a person who has been drinking becomes sleepy or unconscious, they cannot legitimately agree to sexual activity.	1. 77% of households often use fans instead of air conditioning to keep cool in the summer. 2. 90% of households could save up to \$54 per month by using fans instead of air conditioning to keep cool in the summer. 3. At an average household, using a fan during the summer instead of air conditioning could prevent about 300lbs of greenhouse gases from being released. 4. Almost 75% of hotel guests participate hotel resource savings program by using their towels more than once. 5. 75% of hotel guests reuse towels and save the environment, on average, 72,000 gallons of water at a single hotel. 6. 75% of hotel guests reuse towels and save the environment, on average, 480 gallons of detergent at a single hotel. 7. 70% households use high efficiency machines to save money and energy. 8. 75% household use full loads of laundry to conserve water. 9. 78% of consumers nationwide look at recycling information on a product or product label to make sure an item ends up in the right place. 10. 72% of households put out a recycling bin at least once per month.

Note. The statements for the race and gender condition are adapted race concordant to each of the four groups: Asian, Black, Latino, and White (e.g. Latino participants read “85.9% of Latino men...”).

Appendix B

Study 1 Inter-variable Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Attitudes toward Sexual Violence															
2. Social Status: Perceived	-.19														
3. Social Status: Motive	-.02	.14													
4. Sexism	-.31	.15	.08												
5. Extraversion	-.14	.40	.28	.22											
6. Openness	.13	-.01	-.03	-.10	.19										
7. Agreeableness	-.02	.24	.04	-.00	.26	.21									
8. Negative Emotionality	.11	-.27	-.00	-.09	-.40	-.13	-.30								
9. Conscientiousness	-.14	.27	.04	.21	.31	.03	.25	-.46							
10. Impression Management	-.06	.14	-.07	-.06	.21	.05	.35	-.32	.41						
11. Self-Deception	-.11	.28	-.04	.29	.34	.18	.32	-.40	.36	.28					
12. Situational Empathy toward Victims	.37	.08	-.02	-.30	-.00	.20	.24	.07	.00	.13	.00				
13. Rape Myth Acceptance	-.34	-.03	.10	.54	.15	-.09	-.18	-.09	.06	-.13	.14	-.50			
14. Appropriateness of Alcohol-facilitated Sexual Assault	-.20	.02	.11	.15	.11	-.07	-.14	-.07	-.14	-.15	.03	-.30	.38		
15. Likelihood to Assault	-.18	-.12	.09	.12	.01	-.08	-.17	.04	.01	-.19	.01	-.26	.37	.28	
16. Future Intention to Coerce	-.16	.09	.06	.25	.10	-.07	-.04	-.01	.07	-.12	.06	-.14	.24	.22	.25

Note. Bold indicates $p < .05$.

Appendix C

Study 1 Linear Regression Results

Condition	Rape Myth Acceptance		Appropriateness of Alcohol-facilitated Sexual Assault		Likelihood to Assault		Future Intention to Coerce	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
Control (intercept)	1.89*** (0.04)	[1.82, 1.96]	1.68*** (0.04)	[1.60, 1.76]	1.45*** (0.03)	[1.39, 1.50]	1.21*** (0.02)	[1.17, 1.24]
Gender-only	0.03 (0.05)	[-0.07, 0.13]	-0.06 (0.05)	[-0.17, 0.04]	0.02 (0.04)	[-0.06, 0.09]	-0.02 (0.02)	[-0.07, 0.03]
Race & Gender	0.01 (0.05)	[-0.09, 0.11]	0.02 (0.06)	[-0.09, 0.13]	0.01 (0.04)	[-0.07, 0.09]	0.01 (0.03)	[-0.04, 0.06]

Note. SE = Standard Error. CI = Confidence Interval. * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendix D

Rape Myth Acceptance predicted by Condition, controlling individually for Risk and Protective Factors

Risk Factor for Perpetration	Condition					
	Risk Factor for Perpetration		Control		Gender-only	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	-0.30*** (0.06)	-0.41 – -0.18	2.13* (0.06)	2.02 – 2.25	0.01 (0.05)	-0.08 – 0.11
Sexual Violence & Alcohol Attitudes	-0.29*** (0.04)	-0.38 – -0.21	3.15*** (0.19)	2.77 – 3.53	0.01 (0.05)	-0.08 – 0.10
Social Status Perceived	-0.01 (0.03)	-0.08 – 0.05	1.95*** (0.15)	1.65 – 2.25	0.03 (0.05)	-0.07 – 0.12
Social Status Motive	0.08 (0.05)	-0.01 – 0.17	1.61*** (0.16)	1.31 – 1.92	0.01 (0.05)	-0.09 – 0.11
Sexism	0.50*** (0.04)	0.43 – 0.58	0.49*** (0.11)	0.26 – 0.71	0.06 (0.04)	-0.02 – 0.14
Hostile Sexism	0.18*** (0.04)	0.10 – 0.26	1.37*** (0.12)	1.13 – 1.61	0.04 (0.05)	-0.05 – 0.13
Benevolent Sexism	0.47*** (0.03)	0.42 – 0.53	0.64*** (0.08)	0.49 – 0.79	0.06 (0.04)	-0.01 – 0.13
Extraversion	0.12** (0.04)	0.04 – 0.21	1.59*** (0.11)	1.37 – 1.81	0.03 (0.05)	-0.06 – 0.13
Openness	-0.15*** (0.04)	-0.23 – -0.07	2.42*** (0.15)	2.12 – 2.72	0.03 (0.05)	-0.07 – 0.12
Agreeableness	0.04 (0.04)	-0.03 – 0.12	1.76*** (0.12)	1.52 – 1.99	0.03 (0.05)	-0.07 – 0.13
Negative Emotionality	-0.07 (0.05)	-0.16 – 0.02	2.16*** (0.18)	1.81 – 2.51	0.02 (0.05)	-0.07 – 0.12
Conscientiousness	-0.06 (0.03)	-0.13 – 0.00	2.09*** (0.11)	1.87 – 2.31	0.03 (0.05)	-0.06 – 0.13
Self-Deception (Social Desirability)	0.12** (0.04)	0.04 – 0.20	1.37*** (0.19)	0.99 – 1.74	0.04 (0.05)	-0.06 – 0.13
Impression Management (Social Desirability)	-0.10* (0.04)	-0.17 – 0.02	2.25*** (0.14)	1.96 – 2.53	0.03 (0.05)	-0.07 – 0.12
Situational Empathy toward Victims	-0.46*** (0.04)	-0.54 – -0.38	4.10*** (0.20)	3.72 – 4.49	0.01 (0.04)	-0.07 – 0.09

Note. CI = Confidence Interval, * $p < .05$, ** $p < .01$, *** $p < .01$

Appendix E

Appropriateness of Alcohol-facilitated Sexual Assault predicted by Condition, controlling individually for Risk and Protective Factors

Risk Factors	Risk Factor for Perpetration		Condition					
	Estimate (SE)	95% CI	Control		Gender-only		Race & Gender	
			Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	-0.12 (0.07)	-0.25 – 0.01	1.77*** (0.07)	1.64 – 1.90	-0.07 (0.05)	-0.18 – 0.04	0.02 (0.06)	-0.08 – 0.13
Sexual Violence & Alcohol Attitudes	-0.20*** (0.05)	-0.30 – -0.10	2.54*** (0.22)	2.11 – 2.98	-0.08 (0.05)	-0.18 – 0.03	0.03 (0.05)	-0.08 – 0.14
Social Status Perceived	0.02 (0.04)	-0.06 – 0.09	1.61*** (0.17)	1.28 – 1.94	-0.06 (0.05)	-0.17 – 0.05	0.02 (0.06)	-0.09 – 0.13
Social Status Motive	0.12* (0.05)	0.02 – 0.22	1.28*** (0.17)	0.94 – 1.62	-0.09 (0.05)	-0.20 – 0.02	0.02 (0.05)	-0.09 – 0.13
Sexism	0.14** (0.05)	0.04 – 0.24	1.28*** (0.15)	0.99 – 1.57	-0.05 (0.05)	-0.16 – 0.05	0.02 (0.05)	-0.09 – 0.12
Hostile Sexism	-0.05 (0.05)	-0.14 – 0.04	1.82*** (0.14)	1.55 – 2.10	-0.07 (0.05)	-0.17 – 0.04	0.02 (0.06)	-0.09 – 0.13
Benevolent Sexism	0.21*** (0.04)	0.14 – 0.29	1.12*** (0.11)	0.90 – 1.33	-0.05 (0.05)	-0.15 – 0.05	0.01 (0.05)	-0.10 – 0.11
Extraversion	0.10* (0.05)	0.00 – 0.19	1.44*** (0.12)	1.19 – 1.68	-0.06 (0.05)	-0.17 – 0.04	0.02 (0.05)	-0.09 – 0.13
Openness	-0.13** (0.05)	-0.23 – -0.04	2.15*** (0.17)	1.81 – 2.48	-0.07 (0.05)	-0.17 – 0.04	0.02 (0.05)	-0.09 – 0.12
Agreeableness	-0.11** (0.04)	-0.19 – -0.03	2.01*** (0.13)	1.76 – 2.27	-0.06 (0.05)	-0.17 – 0.04	0.02 (0.05)	-0.09 – 0.13
Negative Emotionality	-0.07 (0.05)	-0.17 – 0.03	1.95*** (0.20)	1.56 – 2.33	-0.07 (0.05)	-0.18 – 0.04	0.02 (0.06)	-0.09 – 0.13
Conscientiousness	-0.05 (0.04)	-0.12 – 0.02	1.83*** (0.12)	1.59 – 2.07	-0.06 (0.05)	-0.17 – 0.05	0.02 (0.06)	-0.09 – 0.13
Self-Deception (Social Desirability)	0.02 (0.05)	-0.07 – 0.11	1.59*** (0.21)	1.17 – 2.01	-0.06 (0.05)	-0.17 – 0.04	0.02 (0.06)	-0.09 – 0.13
Impression Management (Social Desirability)	-0.13* (0.06)	-0.24 – -0.02	2.20*** (0.23)	1.76 – 2.65	-0.06 (0.05)	-0.17 – 0.04	0.02 (0.05)	-0.08 – 0.13
Situational Empathy toward Victims	-0.30*** (0.05)	-0.40 – -0.21	3.14*** (0.24)	2.67 – 3.61	-0.08 (0.05)	-0.18 – 0.03	0.04 (0.05)	-0.06 – 0.15

Note. CI = Confidence Interval, * $p < .05$, ** $p < .01$, *** $p < .01$

Appendix F

Likelihood to Sexually Assault predicted by Condition, controlling individually for Risk and Protective Factors

Risk Factor for Perpetration	Condition							
	Control		Gender-only		Race & Gender			
			Estimate (SE)	95% CI	Estimate (SE)	95% CI		
Risk Factors	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	-0.17*** (0.05)	-0.26 – -0.08	1.59*** (0.05)	1.49 – 1.68	0.01 (0.04)	-0.07 – 0.08	0.02 (0.04)	-0.06 – -0.09
Sexual Violence & Alcohol Attitudes	-0.12 (0.04)	-0.19 – -0.04	1.95*** (0.16)	1.64 – 2.26	0.01 (0.04)	-0.07 – 0.08	0.02 (0.04)	-0.06 – -0.09
Social Status Perceived	-0.06* (0.03)	-0.11 – -0.01	1.72*** (0.12)	1.48 – 1.95	0.01 (0.04)	-0.07 – 0.08	0.01 (0.04)	-0.07 – -0.09
Social Status Motive	0.06 (0.04)	-0.01 – 0.14	1.24*** (0.12)	0.99 – 1.48	0.00 (0.04)	-0.08 – 0.08	0.01 (0.04)	-0.07 – -0.09
Sexism	0.09* (0.04)	0.02 – 0.16	1.20*** (0.11)	0.99 – 1.41	0.02 (0.04)	-0.06 – 0.10	0.01 (0.04)	-0.07 – -0.09
Hostile Sexism	0.02 (0.03)	-0.04 – 0.08	1.39*** (0.10)	1.19 – 1.59	0.02 (0.04)	-0.06 – 0.09	0.01 (0.04)	-0.07 – -0.09
Benevolent Sexism	0.09** (0.03)	0.04 – 0.15	1.21*** (0.08)	1.05 – 1.36	0.02 (0.04)	-0.05 – 0.10	0.01 (0.04)	-0.07 – -0.08
Extraversion	0.00 (0.03)	-0.06 – 0.07	1.44*** (0.09)	1.27 – 1.62	0.02 (0.04)	-0.06 – 0.09	0.01 (0.04)	-0.07 – -0.09
Openness	-0.11*** (0.03)	-0.18 – -0.05	1.84*** (0.12)	1.60 – 2.08	0.01 (0.04)	-0.06 – 0.09	0.01 (0.04)	-0.07 – -0.08
Agreeableness	0.00 (0.03)	-0.06 – 0.06	1.44*** (0.10)	1.25 – 1.63	0.02 (0.04)	-0.06 – 0.09	0.01 (0.04)	-0.07 – -0.09
Negative Emotionality	-0.06 (0.04)	-0.13 – 0.02	1.66*** (0.14)	1.38 – 1.94	0.01 (0.04)	-0.07 – 0.09	0.01 (0.04)	-0.07 – -0.09
Conscientiousness	0.02 (0.03)	-0.03 – 0.07	1.39*** (0.09)	1.21 – 1.56	0.01 (0.04)	-0.06 – 0.09	0.01 (0.04)	-0.07 – -0.09
Self-Deception (Social Desirability)	0.00 (0.03)	-0.06 – 0.07	1.43*** (0.15)	1.13 – 1.73	0.02 (0.04)	-0.06 – 0.09	0.01 (0.04)	-0.07 – -0.09
Impression Management (Social Desirability)	-0.12*** (0.03)	-0.18 – -0.06	1.88*** (0.11)	1.66 – 2.10	0.01 (0.04)	-0.06 – 0.09	0.01 (0.04)	-0.06 – -0.09
Situational Empathy toward Victims	-0.19*** (0.04)	-0.26 – -0.12	2.36*** (0.17)	2.02 – 2.70	0.01 (0.04)	-0.07 – 0.08	0.02 (0.04)	-0.05 – -0.10

Note. CI = Confidence Interval, * $p < .05$, ** $p < .01$, *** $p < .01$

Appendix G

Future Intention to Sexually Coerce predicted by Condition, controlling individually for Risk and Protective Factors

Risk Factors	Risk Factor for Perpetration		Condition					
	Estimate (SE)	95% CI	Control		Gender-only		Race & Gender	
			Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	-0.13*** (0.03)	-0.18 – -0.07	1.31*** (0.03)	1.25 – 1.37	-0.02 (0.02)	-0.07 – 0.02	0.02 (0.02)	-0.03 – 0.07
Sexual Violence & Alcohol Attitudes	-0.07** (0.02)	-0.12 – -0.03	1.52*** (0.10)	1.32 – 1.72	-0.02 (0.02)	-0.07 – 0.03	0.02 (0.03)	-0.03 – 0.07
Social Status Perceived	0.03 (0.02)	-0.00 – 0.06	1.07*** (0.08)	0.92 – 1.22	-0.01 (0.02)	-0.06 – 0.03	0.01 (0.03)	-0.04 – 0.06
Social Status Motive	0.03 (0.02)	-0.01 – 0.08	1.10*** (0.08)	0.95 – 1.26	-0.02 (0.03)	-0.07 – 0.02	0.01 (0.03)	-0.04 – 0.06
Sexism	0.12*** (0.02)	0.07 – 0.16	0.88*** (0.07)	0.75 – 1.01	-0.01 (0.02)	-0.06 – 0.04	0.01 (0.02)	-0.04 – 0.06
Hostile Sexism	0.08*** (0.02)	0.04 – 0.12	0.98*** (0.06)	0.85 – 1.10	-0.01 (0.02)	-0.06 – 0.04	0.01 (0.02)	-0.04 – 0.06
Benevolent Sexism	0.08*** (0.02)	0.05 – 0.12	0.99*** (0.05)	0.89 – 1.09	-0.01 (0.02)	-0.06 – 0.03	0.01 (0.02)	-0.04 – 0.06
Extraversion	0.04* (0.02)	0.00 – 0.09	1.09*** (0.06)	0.98 – 1.21	-0.02 (0.02)	-0.07 – 0.03	0.01 (0.03)	-0.04 – 0.06
Openness	-0.02 (0.02)	-0.06 – 0.02	1.27*** (0.08)	1.12 – 1.42	-0.02 (0.02)	-0.07 – 0.03	0.01 (0.03)	-0.04 – 0.06
Agreeableness	0.03 (0.02)	-0.01 – 0.07	1.12*** (0.06)	1.00 – 1.24	-0.02 (0.02)	-0.07 – 0.03	0.01 (0.03)	-0.04 – 0.06
Negative Emotionality	-0.03 (0.02)	-0.08 – 0.02	1.32*** (0.09)	1.14 – 1.50	-0.02 (0.02)	-0.07 – 0.03	0.01 (0.03)	-0.04 – 0.06
Conscientiousness	-0.00 (0.02)	-0.04 – 0.03	1.22*** (0.06)	1.11 – 1.33	-0.02 (0.02)	-0.07 – 0.03	0.01 (0.03)	-0.04 – 0.06
Self-Deception (Social Desirability)	0.03 (0.02)	-0.02 – 0.07	1.09*** (0.10)	0.90 – 1.28	-0.02 (0.02)	-0.06 – 0.03	0.01 (0.03)	-0.04 – 0.06
Impression Management (Social Desirability)	-0.05* (0.02)	-0.08 – -0.01	1.37*** (0.07)	1.23 – 1.52	-0.02 (0.02)	-0.07 – 0.03	0.01 (0.03)	-0.03 – 0.06
Situational Empathy toward Victims	-0.06** (0.02)	-0.11 – -0.02	1.51*** (0.11)	1.29 – 1.73	-0.02 (0.02)	-0.07 – 0.03	0.02 (0.03)	-0.03 – 0.07

Note. CI = Confidence Interval, * $p < .05$, ** $p < .01$, *** $p < .01$

Rape Myth Acceptance as predicted by the Interaction of Condition and Risk and Protective Factors

	Condition											
	Control		Gender-only		Race & Gender		Factor for Perpetration		Gender-only Condition X Factor for Perpetration		Race & Gender Condition X Factor for Perpetration	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	2.14*** (0.06)	2.02 – 2.26	-0.02 (0.08)	-0.18 – 0.13	0.01 (0.09)	-0.17 – 0.19	-0.30*** (0.06)	-0.42 – -0.19	0.04 (0.08)	-0.11 – 0.20	0.02 (0.09)	-0.16 – 0.20
Sexual Violence & Alcohol Attitudes	3.18*** (0.20)	2.80 – 3.57	-0.29 (0.26)	-0.81 – 0.22	0.18 (0.29)	-0.40 – 0.76	-0.30*** (0.05)	-0.39 – -0.21	0.07 (0.06)	-0.05 – 0.19	-0.04 (0.07)	-0.17 – 0.10
Social Status: Perceived	1.96*** (0.15)	1.66 – 2.26	0.03 (0.21)	-0.37 – 0.44	-0.10 (0.22)	-0.53 – 0.32	-0.02 (0.03)	-0.08 – 0.05	-0.00 (0.05)	-0.09 – 0.09	0.03 (0.05)	-0.07 – 0.12
Social Status: Motive	1.60*** (0.16)	1.30 – 1.91	-0.09 (0.23)	-0.54 – 0.36	-0.01 (0.22)	-0.45 – 0.43	0.08 (0.05)	-0.01 – 0.18	0.03 (0.07)	-0.10 – 0.16	0.01 (0.07)	-0.12 – 0.14
Sexism	0.49*** (0.11)	0.26 – 0.71	-0.00 (0.16)	-0.32 – 0.31	0.01 (0.16)	-0.30 – 0.32	0.50*** (0.04)	0.43 – 0.58	0.02 (0.06)	-0.09 – 0.13	-0.00 (0.05)	-0.11 – 0.10
Hostile Sexism	1.36 *** (0.12)	1.12 – 1.61	0.22 (0.17)	-0.11 – 0.56	-0.11 (0.18)	-0.45 – 0.24	0.18*** (0.04)	0.10 – 0.26	-0.06 (0.06)	-0.17 – 0.05	0.04 (0.06)	-0.07 – 0.15
Benevolent Sexism	0.64 *** (0.08)	0.49 – 0.79	-0.11 (0.11)	-0.32 – 0.10	0.06 (0.11)	-0.15 – 0.28	0.47*** (0.03)	0.42 – 0.53	0.06 (0.04)	-0.01 – 0.14	-0.03 (0.04)	-0.10 – 0.05
Extraversion	1.59 *** (0.11)	1.37 – 1.82	0.11 (0.16)	-0.21 – 0.43	-0.12 (0.16)	-0.42 – 0.19	0.12** (0.04)	0.03 – 0.20	-0.03 (0.06)	-0.16 – 0.09	0.05 (0.06)	-0.06 – 0.17
Openness	2.39 *** (0.15)	2.09 – 2.70	0.29 (0.21)	-0.12 – 0.69	-0.05 (0.23)	-0.50 – 0.40	-0.14*** (0.04)	-0.23 – -0.06	-0.07 (0.06)	-0.19 – 0.04	0.02 (0.06)	-0.11 – 0.14
Agreeableness	1.73 *** (0.12)	1.50 – 1.97	0.20 (0.16)	-0.12 – 0.52	-0.22 (0.18)	-0.57 – 0.12	0.05 (0.04)	-0.02 – 0.13	-0.06 (0.05)	-0.16 – 0.05	0.08 (0.06)	-0.03 – 0.19
Negative Emotionality	2.20 *** (0.18)	1.85 – 2.55	0.08 (0.24)	-0.39 – 0.56	-0.73*** (0.25)	-1.21 – -0.24	-0.08 (0.05)	-0.17 – 0.01	-0.02 (0.06)	-0.14 – 0.11	0.19** (0.06)	0.07 – 0.32
Conscientiousness	2.09 *** (0.11)	1.87 – 2.31	-0.02 (0.16)	-0.32 – 0.29	0.07 (0.16)	-0.24 – 0.38	-0.06 (0.03)	-0.13 – 0.00	0.02 (0.05)	-0.08 – 0.11	-0.02 (0.05)	-0.11 – 0.08
Self-Deception (Social Desirability)	1.35 *** (0.19)	0.97 – 1.73	0.24 (0.26)	-0.27 – 0.76	-0.25 (0.27)	-0.79 – 0.29	0.12** (0.04)	0.04 – 0.21	-0.05 (0.06)	-0.16 – 0.07	0.06 (0.06)	-0.06 – 0.18
Impression Management (Social Desirability)	2.26 *** (0.15)	1.97 – 2.54	0.31 (0.20)	-0.09 – 0.70	-0.34 (0.20)	-0.73 – 0.06	-0.10** (0.04)	-0.18 – -0.02	-0.08 (0.05)	-0.18 – 0.03	0.10 (0.05)	-0.01 – 0.20
Situational Empathy toward Victims	4.10 *** (0.20)	3.71 – 4.48	0.42 (0.27)	-0.11 – 0.95	0.04 (0.29)	-0.53 – 0.61	-0.46*** (0.04)	-0.54 – -0.38	-0.09 (0.06)	-0.20 – 0.02	0.00 (0.06)	-0.12 – 0.12

Note. Each row represents a single model. CI = Confidence Interval. * $p < .05$. ** $p < .01$. *** $p < .01$.

Appendix I

Appropriateness of Alcohol-facilitated Sexual Assault as predicted by the Interaction of Condition and Risk and Protective Factors

	Condition											
	Control		Gender-only		Race & Gender		Factor for Perpetration		Gender-only Condition X Factor for Perpetration		Race & Gender Condition X Factor for Perpetration	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	1.79*** (0.07)	1.65 – 1.92	-0.16 (0.09)	-0.33 – 0.02	-0.05 (0.10)	-0.25 – 0.15	-0.13 (0.07)	-0.26 – 0.00	0.11 (0.09)	-0.06 – 0.29	0.09 (0.10)	-0.11 – 0.29
Sexual Violence & Alcohol Attitudes	2.55*** (0.22)	2.11 – 2.99	-0.42 (0.30)	-1.01 – 0.16	-0.21 (0.33)	-0.87 – 0.45	-0.20*** (0.05)	-0.30 – -0.10	0.08 (0.07)	-0.05 – 0.22	0.05 (0.08)	-0.10 – 0.21
Social Status: Perceived	1.58*** (0.17)	1.25 – 1.91	0.02 (0.23)	-0.43 – 0.47	0.28 (0.24)	-0.18 – 0.75	0.02 (0.04)	-0.05 – 0.10	-0.02 (0.05)	-0.12 – 0.08	-0.06 (0.05)	-0.16 – 0.04
Social Status: Motive	1.28*** (0.17)	0.94 – 1.62	-0.14 (0.25)	-0.63 – 0.36	0.11 (0.25)	-0.38 – 0.59	0.12* (0.05)	0.02 – 0.22	0.01 (0.07)	-0.13 – 0.15	-0.03 (0.07)	-0.17 – 0.12
Sexism	1.28*** (0.15)	0.99 – 1.57	0.02 (0.21)	-0.39 – 0.43	-0.06 (0.21)	-0.47 – 0.34	0.14** (0.05)	0.04 – 0.24	-0.03 (0.07)	-0.17 – 0.12	0.03 (0.07)	-0.11 – 0.17
Hostile Sexism	1.82*** (0.14)	1.55 – 2.10	0.08 (0.19)	-0.30 – 0.46	-0.21 (0.20)	-0.60 – 0.18	-0.05 (0.05)	-0.14 – 0.04	-0.05 (0.06)	-0.17 – 0.07	0.08 (0.06)	-0.05 – 0.20
Benevolent Sexism	1.11*** (0.11)	0.90 – 1.33	-0.07 (0.15)	-0.37 – 0.24	0.09 (0.15)	-0.21 – 0.39	0.21*** (0.04)	0.14 – 0.29	0.01 (0.06)	-0.10 – 0.11	-0.03 (0.05)	-0.14 – 0.08
Extraversion	1.43*** (0.12)	1.18 – 1.67	0.02 (0.18)	-0.33 – 0.38	0.24 (0.17)	-0.10 – 0.57	0.10** (0.05)	0.01 – 0.19	-0.03 (0.07)	-0.17 – 0.10	-0.09 (0.06)	-0.21 – 0.04
Openness	2.17*** (0.17)	1.83 – 2.51	-0.29 (0.23)	-0.75 – 0.16	0.07 (0.25)	-0.43 – 0.57	-0.14** (0.05)	-0.23 – -0.05	0.06 (0.06)	-0.06 – 0.19	-0.02 (0.07)	-0.16 – 0.12
Agreeableness	2.04*** (0.13)	1.78 – 2.30	-0.29 (0.18)	-0.64 – 0.06	0.12 (0.19)	-0.26 – 0.51	-0.12** (0.04)	-0.20 – -0.04	0.08 (0.06)	-0.04 – 0.19	-0.03 (0.06)	-0.16 – 0.09
Negative Emotionality	1.97*** (0.20)	1.58 – 2.36	0.02 (0.27)	-0.51 – 0.55	-0.43 (0.28)	-0.97 – 0.11	-0.08 (0.05)	-0.18 – 0.02	-0.02 (0.07)	-0.16 – 0.11	0.12 (0.07)	-0.02 – 0.26
Conscientiousness	1.84*** (0.12)	1.59 – 2.08	-0.08 (0.17)	-0.42 – 0.26	-0.04 (0.17)	-0.38 – 0.30	-0.05 (0.04)	-0.13 – 0.02	0.01 (0.05)	-0.10 – 0.11	0.02 (0.05)	-0.08 – 0.12
Self-Deception (Social Desirability)	1.58*** (0.21)	1.16 – 2.00	0.09 (0.29)	-0.48 – 0.66	-0.23 (0.31)	-0.83 – 0.37	0.02 (0.05)	-0.07 – 0.12	-0.04 (0.07)	-0.16 – 0.09	0.06 (0.07)	-0.08 – 0.19
Impression Management (Social Desirability)	2.16*** (0.16)	1.84 – 2.47	-0.17 (0.22)	-0.61 – 0.27	-0.15 (0.22)	-0.59 – 0.29	-0.13** (0.04)	-0.21 – -0.05	0.03 (0.06)	-0.09 – 0.14	0.05 (0.06)	-0.07 – 0.16
Situational Empathy toward Victims	3.16*** (0.24)	2.69 – 3.63	-0.11 (0.33)	-0.76 – 0.54	0.39 (0.35)	-0.30 – 1.09	-0.31*** (0.05)	-0.40 – -0.21	0.01 (0.07)	-0.13 – 0.14	-0.07 (0.07)	-0.21 – 0.07

Note: Each row represents a single model. CI = Confidence Interval. * $p < .05$. ** $p < .01$. *** $p < .01$.

Appendix J

Likelihood to Sexually Assault as predicted by the Interaction of Condition and Risk and Protective Factors

	Condition											
	Control		Gender-only		Race & Gender		Factor for Perpetration		Gender-only Condition X Factor for Perpetration		Race & Gender Condition X Factor for Perpetration	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	1.59*** (0.05)	1.49 – 1.68	0.01 (0.06)	-0.11 – 0.14	0.01 (0.07)	-0.13 – 0.16	-0.17*** (0.05)	-0.26 – -0.07	-0.01 (0.06)	-0.13 – 0.12	0.01 (0.07)	-0.14 – 0.15
Sexual Violence & Alcohol Attitudes	1.99*** (0.16)	1.67 – 2.31	-0.25 (0.22)	-0.67 – 0.18	0.27 (0.24)	-0.20 – 0.75	-0.13*** (0.04)	-0.20 – -0.05	0.06 (0.05)	-0.04 – 0.16	-0.06 (0.06)	-0.17 – 0.05
Social Status: Perceived	1.70*** (0.12)	1.47 – 1.94	0.04 (0.16)	-0.28 – 0.37	0.13 (0.17)	-0.20 – 0.46	-0.06* (0.03)	-0.11 – -0.01	-0.01 (0.04)	-0.08 – 0.06	-0.03 (0.04)	-0.10 – 0.05
Social Status: Motive	1.23*** (0.12)	0.99 – 1.48	0.02 (0.18)	-0.34 – 0.38	-0.05 (0.18)	-0.40 – 0.30	0.06 (0.04)	-0.01 – 0.14	-0.01 (0.05)	-0.11 – 0.10	0.02 (0.05)	-0.08 – 0.12
Sexism	1.20*** (0.11)	0.99 – 1.41	0.01 (0.15)	-0.29 – 0.31	0.03 (0.15)	-0.27 – 0.32	0.09* (0.04)	0.02 – 0.16	0.00 (0.05)	-0.10 – 0.11	-0.01 (0.05)	-0.11 – 0.09
Hostile Sexism	1.39*** (0.10)	1.19 – 1.59	0.13 (0.14)	-0.15 – 0.40	-0.01 (0.14)	-0.29 – 0.28	0.02 (0.03)	-0.04 – 0.08	-0.04 (0.05)	-0.13 – 0.05	0.01 (0.05)	-0.09 – 0.10
Benevolent Sexism	1.21*** (0.08)	1.05 – 1.37	-0.06 (0.11)	-0.29 – 0.16	0.04 (0.11)	-0.18 – 0.26	0.09*** (0.03)	0.04 – 0.15	0.03 (0.04)	-0.05 – 0.11	-0.01 (0.04)	-0.09 – 0.07
Extraversion	1.44*** (0.09)	1.26 – 1.62	0.01 (0.13)	-0.24 – 0.27	0.14 (0.12)	-0.10 – 0.39	0.00 (0.03)	-0.06 – 0.07	0.00 (0.05)	-0.10 – 0.10	-0.05 (0.05)	-0.14 – 0.04
Openness	1.82*** (0.12)	1.58 – 2.06	0.18 (0.16)	-0.15 – 0.50	-0.08 (0.18)	-0.44 – 0.28	-0.11 (0.03)	-0.17 – -0.04	-0.05 (0.05)	-0.14 – 0.04	0.02 (0.05)	-0.08 – 0.12
Agreeableness	1.42*** (0.10)	1.23 – 1.61	0.17 (0.13)	-0.09 – 0.42	-0.12 (0.14)	-0.40 – 0.15	0.01 (0.03)	-0.05 – 0.07	-0.05 (0.04)	-0.13 – 0.03	0.04 (0.05)	-0.04 – 0.13
Negative Emotionality	1.68*** (0.14)	1.40 – 1.96	-0.21 (0.19)	-0.59 – 0.17	0.08 (0.20)	-0.31 – 0.47	-0.06 (0.04)	-0.13 – 0.01	0.06 (0.05)	-0.04 – 0.16	-0.02 (0.05)	-0.12 – 0.08
Conscientiousness	1.38*** (0.09)	1.21 – 1.56	-0.20 (0.12)	-0.44 – 0.04	0.30* (0.12)	0.06 – 0.54	0.02 (0.03)	-0.03 – 0.07	0.07 (0.04)	-0.01 – 0.14	-0.09* (0.04)	-0.17 – -0.02
Self-Deception (Social Desirability)	1.43*** (0.15)	1.12 – 1.73	0.08 (0.21)	-0.33 – 0.50	0.02 (0.22)	-0.41 – 0.46	0.00 (0.03)	-0.06 – 0.07	-0.02 (0.05)	-0.11 – 0.08	-0.00 (0.05)	-0.10 – 0.09
Impression Management (Social Desirability)	1.88*** (0.11)	1.65 – 2.10	-0.04 (0.16)	-0.36 – 0.27	0.10 (0.16)	-0.21 – 0.41	-0.12*** (0.03)	-0.18 – -0.06	0.02 (0.04)	-0.07 – 0.10	-0.02 (0.04)	-0.11 – 0.06
Situational Empathy toward Victims	2.37*** (0.17)	2.02 – 2.71	0.18 (0.24)	-0.30 – 0.65	0.16 (0.26)	-0.35 – 0.67	-0.19*** (0.04)	-0.26 – -0.12	-0.04 (0.05)	-0.13 – 0.06	-0.03 (0.05)	-0.13 – 0.08

Note: Each row represents a single model. CI = Confidence Interval. * p < .05. ** p < .01. *** p < .01.

Future Intention to Sexually Coerce as predicted by the Interaction of Condition and Risk and Protective Factors

	Condition											
	Control		Gender-only		Race & Gender		Factor for Perpetration		Gender-only Condition X Factor for Perpetration		Race & Gender Condition X Factor for Perpetration	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
History of Perpetration	1.32*** (0.03)	1.26 – 1.38	-0.06 (0.04)	-0.14 – 0.02	0.10* (0.05)	0.01 – 0.19	-0.14*** (0.03)	-0.20 – -0.08	0.04 (0.04)	-0.03 – 0.12	-0.09 (0.05)	-0.18 – 0.00
Sexual Violence & Alcohol Attitudes	1.53*** (0.10)	1.32 – 1.73	-0.14 (0.14)	-0.42 – 0.13	0.03 (0.16)	-0.27 – 0.34	-0.07*** (0.02)	-0.12 – -0.03	0.03 (0.03)	-0.03 – 0.09	-0.00 (0.04)	-0.07 – 0.07
Social Status: Perceived	1.07*** (0.08)	0.91 – 1.22	0.06 (0.10)	-0.15 – 0.26	0.01 (0.11)	-0.20 – 0.22	0.03 (0.02)	-0.00 – 0.07	-0.02 (0.02)	-0.06 – 0.03	0.00 (0.02)	-0.05 – 0.05
Social Status: Motive	1.10*** (0.08)	0.94 – 1.25	0.02 (0.12)	-0.21 – 0.25	-0.11 (0.11)	-0.33 – 0.11	0.03 (0.02)	-0.01 – 0.08	-0.01 (0.03)	-0.08 – 0.05	0.04 (0.03)	-0.03 – 0.10
Sexism	0.88*** (0.07)	0.75 – 1.01	0.16 (0.09)	-0.02 – 0.34	-0.03 (0.09)	-0.22 – 0.15	0.12*** (0.02)	0.07 – 0.16	-0.06 (0.03)	-0.13 – 0.00	0.02 (0.03)	-0.05 – 0.08
Hostile Sexism	0.97*** (0.06)	0.85 – 1.10	0.17 (0.09)	-0.01 – 0.34	-0.09 (0.09)	-0.26 – 0.09	0.08*** (0.02)	0.04 – 0.12	-0.06* (0.03)	-0.12 – -0.01	0.03 (0.03)	-0.02 – 0.09
Benevolent Sexism	0.99*** (0.05)	0.89 – 1.09	0.07 (0.07)	-0.07 – 0.21	0.02 (0.07)	-0.12 – 0.16	0.08*** (0.02)	0.05 – 0.12	-0.03 (0.03)	-0.08 – 0.02	-0.00 (0.02)	-0.05 – 0.05
Extroversion	1.10*** (0.06)	0.99 – 1.21	0.08 (0.08)	-0.09 – 0.24	-0.02 (0.08)	-0.17 – 0.14	0.04 (0.02)	-0.00 – 0.09	-0.04 (0.03)	-0.10 – 0.02	0.01 (0.03)	-0.05 – 0.07
Openness	1.29*** (0.08)	1.13 – 1.45	-0.13 (0.11)	-0.34 – 0.08	0.20 (0.12)	-0.03 – 0.43	-0.02 (0.02)	-0.07 – 0.02	0.03 (0.03)	-0.03 – 0.09	-0.05 (0.03)	-0.12 – 0.01
Agreeableness	1.11*** (0.06)	0.99 – 1.23	0.05 (0.08)	-0.11 – 0.21	-0.07 (0.09)	-0.25 – 0.10	0.03 (0.02)	-0.01 – 0.07	-0.02 (0.03)	-0.07 – 0.03	0.03 (0.03)	-0.03 – 0.08
Negative Emotionality	1.33*** (0.09)	1.15 – 1.50	0.01 (0.12)	-0.24 – 0.25	-0.08 (0.13)	-0.33 – 0.17	-0.03 (0.02)	-0.08 – 0.01	-0.01 (0.03)	-0.07 – 0.06	0.02 (0.03)	-0.04 – 0.09
Conscientiousness	1.22*** (0.06)	1.11 – 1.33	0.04 (0.08)	-0.11 – 0.20	-0.08 (0.08)	-0.23 – 0.08	-0.00 (0.02)	-0.04 – 0.03	-0.02 (0.02)	-0.07 – 0.03	0.03 (0.02)	-0.02 – 0.08
Self-Deception (Social Desirability)	1.10*** (0.10)	0.91 – 1.29	-0.14 (0.13)	-0.40 – 0.12	0.15 (0.14)	-0.12 – 0.43	0.02 (0.02)	-0.02 – 0.07	0.03 (0.03)	-0.03 – 0.09	-0.03 (0.03)	-0.09 – 0.03
Impression Management (Social Desirability)	1.46*** (0.11)	1.26 – 1.67	-0.05 (0.15)	-0.34 – 0.23	0.18 (0.15)	-0.10 – 0.47	-0.04* (0.02)	-0.08 – -0.01	0.01 (0.03)	-0.04 – 0.06	-0.03 (0.03)	-0.08 – 0.03
Situational Empathy toward Victims	1.51*** (0.11)	1.29 – 1.74	-0.15 (0.16)	-0.46 – 0.16	0.06 (0.17)	-0.28 – 0.39	-0.06*** (0.02)	-0.11 – -0.02	0.03 (0.03)	-0.04 – 0.09	-0.01 (0.03)	-0.08 – 0.06

Note. Each row represents a single model. CI = Confidence Interval. * $p < .05$. ** $p < .01$. *** $p < .01$.