

# Whom Would You Help? The Impact of Perpetrator and Victim Gender on Bystander Behavior During a Sexual Assault

Violence Against Women

1–24

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Anne Lippert<sup>1</sup> , Dylan Baker<sup>2</sup>,  
Gregory Hawk<sup>3</sup>, Nissa Gongora<sup>1</sup> and  
Jonathan Golding<sup>4</sup>

## Abstract

We examined the impact of perpetrator and victim gender on bystander helping choices and assault perceptions. Participants (32 females, 37 males) read about two simultaneously occurring sexual assaults, indicated which victim they would help, and gave their perceptions of the assaults. We used a within-participants design that fully manipulated the perpetrator and victim gender for both assaults. Results showed female victims of male perpetrators and male victims of female perpetrators were most and least likely to be chosen for help, respectively. Cognitive networks derived from open-ended responses provided insight into the rationale used by participants to make helping decisions in ways that differed by perpetrator and victim gender.

## Keywords

bystander behavior, sexual violence, gender, cognitive networks, sentiment analysis

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<sup>1</sup>Department of Psychology, Prairie View A & M University, Prairie View, TX, USA

<sup>2</sup>Department of Economics, University of Chicago, Chicago, IL, USA

<sup>3</sup>Department of Statistics, University of Kentucky, Lexington, KY, USA

<sup>4</sup>Department of Psychology, University of Kentucky, Lexington, KY, USA

## Corresponding Author:

Anne Lippert, Department of Psychology, Prairie View A & M University, 575 Anne Preston, Prairie View, TX 77446, USA.

Email: [amlippert@pvamu.edu](mailto:amlippert@pvamu.edu)

Imagine you witness simultaneously occurring sexual assaults - a male assaulting a female and a female assaulting a male. Which victim do you help and why? In this scenario, you are the *bystander*. The term “bystander” describes a third-party witness to an assault who can either do nothing, support the perpetrator’s behavior, or assist the victim by intervening in prosocial ways (McMahon & Banyard, 2012). Third parties who do not intervene are *non-responsive bystanders*, those that intervene to try to help the victim are *responsive bystanders*, and those that made a decision to not engage are *responsive bystanders who chose inaction* (Fischer et al., 2006; Waasdorp et al., 2018). Research on bystander responsiveness to sexual assault has overwhelmingly focused on scenarios involving a male perpetrator and a female victim (e.g., Bennett et al., 2017). The present study investigated the effects of manipulating the victim and perpetrator gender on bystanders’ helping choices and perceptions of sexual violence.

### Sexual Violence

One of the most alarming and pervasive social issues is that of adult sexual violence. Sexual violence is defined as “sexual activity when consent is not obtained or not freely given” (Centers for Disease Control [CDC], 2023). Forms of sexual violence include sexual harassment (e.g., unwanted sexual comments), sexual assault (e.g., non-consensual bodily contact), attempted or completed rape (i.e., non-consensual vaginal, oral, or anal sex, and specific to males- being made to penetrate; Smith et al., 2018; Stemple & Meyer, 2014). Anyone can be a victim of sexual assault, regardless of gender. In the US, over half of the females and almost one-third of the males have experienced sexual violence involving physical contact during their lifetimes (CDC, 2023). In addition, sexual assault happens between all gender dyads. In the US, a 2016–2017 national survey on sexual violence found that approximately 48% of the 15,152 females and 23% of 12,419 males in their sample experienced unwanted sexual contact at least once during their lifetime. Among females who had experienced unwanted sexual contact at least once during their lifetime, 90% experienced this at the hands of a male perpetrator, 1% at the hands of a female perpetrator, 5% had experienced this at the hands of both male and female perpetrators, and in 4% of the cases, the gender of the perpetrator was unknown. For male victims of unwanted sexual contact, the percentages were 34%, 48%, 14%, and 4%, respectively (Basile et al., 2022). Regrettably, the reported prevalence of sexual assault likely reflects only the tip of the iceberg, given that many victims of sexual violence do not report being assaulted (see Kilpatrick et al., 2007).

The prevalence of sexual violence is especially concerning given its association with a host of negative consequences. Compared to those who have not experienced sexual violence, victims are more likely to exhibit lower academic achievement, greater symptoms of depression, anxiety, post-traumatic stress disorder, substance abuse, suicidality as well as difficulties with emotional and sexual intimacy (Dir et al., 2021; Dworkin et al., 2022; Rothman et al., 2021). As such, there exist various perspectives regarding how to combat sexual assault, among them the idea that bystanders can play a role in reducing prevalence rates (see Mujal et al., 2021).

## Bystander Behavior and Sexual Violence

Interest in bystander behavior can be traced to the infamous murder case of Kitty Genovese. According to accounts, Genovese suffered a two-phased, 35 min attack on March 13, 1964, on a New York City street. Her screams reportedly went unheeded by neighbors and Genovese died (Kassin, 2017; but see Manning et al., 2007). This case inspired Latané and Darley's (1968) seminal study on bystander responses to emergencies. Their key finding is the *bystander effect*, where the presence of a large number of bystanders inhibits helping. This effect has been consistently documented across various situations such as physical injury (Latané & Darley, 1968; Liebst et al., 2018), intimate partner violence (Seelau & Seelau, 2005; Taylor et al., 2019), stranded motorists (Hurley & Allen, 1974), workplace bullying (Coyne et al., 2019), and cyberbullying (Kazerooni et al., 2018).

In a sexual assault context, bystander behavior is particularly relevant. Approximately one-third of reported sexual assaults involve a third-party witness (Planty, 2002), emphasizing the significance of bystanders as potential allies in combating sexual violence. Bystander training programs such as *Green Dot* (Coker et al., 2016), *RealConsent* (Salazar et al., 2019), and *Support Over Silence For Kids* (Taylor et al., 2023; Weaver et al., 2020) aim to mitigate the frequency and impact of sexual assaults by teaching bystanders to recognize potentially harmful situations and take steps to address them. Bystander training programs have led to increased intervention rates (Mujal et al., 2021), but there is debate as to what specific elements of these programs are responsible for the increases (Kettrey & Marx, 2021). This is not surprising, given that research into bystander intervention in cases of sexual assault is relatively new and factors that predict how bystanders behave in this context are only beginning to be flushed out.

However, recent research on sexual violence and bystander behavior helped to uncover predictors of bystander responsiveness to sexual assault. Of particular significance is Mainwaring and colleagues' (2023) review of 85 studies spanning from 2010–2020 on bystander behavior and sexual assault. This review found that bystanders were more likely to intervene when they had confidence in their ability to act (e.g., Zelin et al., 2019), felt a sense of responsibility (e.g., Katz et al., 2015), perceived the assault to be severe (e.g., Bennett et al., 2017), had higher empathy for the victim or perceived the victim as vulnerable (e.g., Pugh et al., 2016), if they saw others intervene (e.g., Oesterle et al., 2018; Reid & Dundes, 2017) or if they anticipated peer approval (e.g., Reynolds-Tylus et al., 2019). Conversely, fear of injury or threats to personal safety (e.g., Hoxmeier et al., 2019), and unsupportive social norms regarding intervention can deter bystander action (e.g., Allnock & Atkinson, 2019; Reid & Dundes, 2017).

Other predictors were less consistent in determining bystander sexual violence responsiveness (Mainwaring et al., 2023). Some studies suggested that females were more inclined to intervene in sexual assaults compared to males (e.g., Bennett et al.,

2017), while others found no significant gender differences (e.g., Banyard et al., 2020). When bystanders did intervene, males tended to act in riskier ways such as confronting the perpetrator, whereas females typically focused on safer strategies aimed at assisting the victim (Mainwaring et al., 2023). Similarly, the presence of other bystanders decreased responsiveness in some studies (e.g., Katz, 2015) and increased it in others (e.g., Katz et al., 2015). Inhibiting factors included the fear of looking foolish (Burn, 2009) and the presence of capable authority figures (Hoxmeier et al., 2019) whereas seeing others intervene or being encouraged to intervene increased responsiveness (e.g., Oesterle et al., 2018).

These discrepancies in the literature suggest additional variables may be mediating, moderating, or directly associated with bystander responsiveness to sexual violence. For example, perpetrator and victim gender appear to impact bystanders' responses to numerous types of aggression (e.g., Chabot et al., 2009; Seelau & Seelau, 2005), yet have been scarcely explored in regard to sexual assault. Indeed, Mainwaring et al.'s (2023) review of variables related to bystander responsiveness to sexual violence did not include the perpetrator and victim gender because they have received such "little attention in the literature" (p. 6).

Not surprisingly, when reviewing relevant research, we found no studies on the bystander behavior in cases of sexual assault that fully manipulated the victim and perpetrator gender. Only two published studies, by Katz et al. (2015) and Katz (2015), examined a partial manipulation of gender by having participants read rape scenarios with male perpetrators and either male or female victims. Participants in Katz and Colbert were all female and in Katz were all male. In both studies, bystanders were more responsive to female victims than to male victims. This finding has been demonstrated in the bystander behavior in heterosexual dating violence (Chabot et al., 2009) and aligns with broader research indicating male aggression towards females is viewed as more unacceptable, harmful, and criminal compared to female aggression towards males (Bethke & DeJoy, 1993).

### *The Present Study*

The focus of our study was on three different factors: perpetrator gender (male vs. female), victim gender (male vs. female), and participant gender (male vs. female). Participants (bystanders) read six summaries in which two sexual assaults (that varied in the perpetrator and victim gender) simultaneously took place. For each summary, participants indicated the victim they intended to help and provided their perceptions of the assaults. We used the following abbreviations to refer to the *four assault types*: MF - male perpetrator and female victim, FF - female perpetrator and female victim, MM - male perpetrator and male victim, and FM - female perpetrator and male victim. In addition, MF and FM were collectively known as the "mixed-gender" assaults and FF and MM as the "same-gender" assaults. Notably, we assessed intended, not actual, helping behavior. Thus, the term "helping choice" or "choose/chose to help" indicates which victim participants *intended* to help. Our study had three hypotheses and two exploratory analyses:

### *Hypothesis 1: Effect of the Victim and Perpetrator Gender on Helping Choice*

*Hypothesis 1a.* We predicted an overall effect of the assault type on helping choice. Based on Katz and Colbert (2015), Katz (2015), and Chabot et al. (2009) we believed participants would choose to help victims of MF the most frequently and victims of FM the least frequently.

*Hypothesis 1b.* We believed victim gender would affect helping choice. When perpetrator gender was fixed, we expected participants would choose to help a female victim significantly more often than a male victim. In studies where the perpetrator gender (male) was held constant, it was found that female victims of sexual assault were more likely to be helped than male victims (e.g., Katz, 2015; Katz et al., 2015).

*Hypothesis 1c.* We expected that the helping choice would depend on the perpetrator gender, with victims of male perpetrators more likely to be chosen for help than victims of female perpetrators. Male perpetrator behavior was viewed more negatively than female perpetrator behavior in sexually motivated crimes (Bethke & Dejoy, 1993; Follingstad et al., 2021). Increased negative perceptions of male assailants could lead participants to choose to help victims of male perpetrators over victims of female perpetrators.

### *Hypothesis 2: Ratings of the Perpetrator, Victim and Assault Seriousness*

*Hypothesis 2a.* We expected participants would assign the highest pro-victim, anti-perpetrator, and assault seriousness ratings to MF assaults and lowest to FM assaults. Male-to-female assaults have been characterized in terms of an aggressive perpetrator and a helpless victim and perceived as more violent than assaults involving other perpetrator-victim gender combinations (Hine, 2019; Seelau & Seelau, 2005). Furthermore, when asked to judge sexual violence perpetrated by females onto male victims, participants viewed female perpetrators as incapable of offending, downplayed victim harm, or denied male victimization entirely (Loxton & Groves, 2022).

*Hypothesis 2b.* We also hypothesized that assaults chosen for help would have higher anti-perpetrator, pro-victim, and perceived assault seriousness ratings compared to assaults not chosen for help. Prior work shows that bystanders are more likely to be responsive if they hold greater pro-victim and anti-perpetrator attitudes (e.g., Heretick & Learn, 2020; Pugh et al., 2016) or perceive the sexual assault to be of greater severity (e.g., Bennett et al., 2017).

### *Hypothesis 3: Reasons for Helping Choice*

*Hypothesis 3a.* We expected an effect of the perpetrator and victim gender on the sentiment (emotion) in participants' reasons for helping choice. We believed participants'

reasons for helping choice would be most negative when helping an MF victim and least negative for helping an FF victim. Research showed male perpetrated assaults on females were viewed more negatively and more seriously than other gender pairings (Bethke & Dejoy, 1993; Follingstad et al., 2021), and female-on-female violence was perceived as harmless, funny, and entertaining (Hassouneh & Glass, 2008; Rollè et al., 2018). We measured the sentiment of participants' reasons for helping choice using VADER (Valence Aware Dictionary and sEntiment Reasoner; Hutto & Gilbert, 2014) analysis. VADER classifies text sentiment as positive or negative using an empirically validated sentiment dictionary and quantifies sentiment strength with language-based rules that humans use to express sentiment intensity.

*Hypothesis 3b.* We predicted that major themes in participants' reasons for helping victims would differ by the assault type. For example, we know bystanders are more likely to intervene when they perceive the victim to be vulnerable (e.g., Zelin et al., 2019), and so the concept of a vulnerable victim would be reflected in helping reasons for MF but not FM. To identify the major themes, we modeled participants' responses to the question "why did you select the victim you chose to help?" as networks where network nodes represented key terms in responses and links indicated associations between key terms. We identified prominent network themes using a community detection algorithm which partitioned off groups of nodes (i.e., major themes) that were more likely to be connected to each other than to members of other groups.

### *Exploratory Analyses: Participant Gender and Same Versus Mixed Gender Assaults*

Given that past research on the participant gender has been equivocal (e.g., Banyard et al., 2020), we explored the effects of the participant gender on helping choice and rating variables. In addition, we explored whether helping choice rates differed between the same versus mixed-gender assault types since there is scarce work in this area.

## **Method**

The present study was conducted with institutional IRB approval. All manipulations, measures, and exclusions are reported. All data and materials are available upon request by contacting the corresponding author.

### *Participants*

The participants were 76 individuals recruited through Mechanical Turk. Their data were included if they successfully answered 83% of manipulation-check questions. We chose the 83% level because this was the point at which there was a clear break in the distribution (see Golding et al., 2018). Based on this analysis, we dropped six

participants, and one participant was removed because we were interested in comparing male versus female participants and this participant identified as non-binary. The final sample included 69 participants (32 females, 37 males). A sensitivity analysis conducted in G\*Power (Faul et al., 2009) indicated that this sample size with two repeated measures would have 80% power across an infinite number of samples to detect an effect size of  $d = 0.34$  at  $\alpha = .05$ . Participants were US citizens between 20 to 60 years old ( $M = 37.71$ ,  $SD = 10.60$ ). The racial composition of the sample was 75% White/Caucasian, 10% Asian, 6% Black/African American, 6% Hispanic/Latino, and 3% "Other."

## Design

The following independent variables were manipulated: perpetrator gender (male vs. female), victim gender (male vs. female), and participant gender (male vs. female). The dependent variables were the victim chosen for help (dichotomous) and participant attitudes (rating-scales) towards the perpetrator, victim, and the assault.

## Materials

**Sexual Assault Summaries.** Participants read summaries describing a party where two separate sexual assaults were simultaneously taking place. In both assaults, the perpetrator (male or female) was grabbing the crotch of the victim (male or female), while the victim resisted. Here is an example summary:

*You are at a party and in one corner of the room you see a man grabbing the crotch of a woman. The woman keeps trying to push his hands away, but she is unsuccessful.*

*At the same time you are watching this you see in another part of the room a woman grabbing the crotch of a man. The man keeps trying to push the woman's hands away, but he is unsuccessful.*

The two simultaneous sexual assaults never had the same perpetrator-victim-gender combination. Since each summary featured two of the four assault types, participants read six summaries (i.e., MF vs. FF, MF vs. MM, MF vs. FM, FF vs. MM, FF vs. FM, MM vs. FM). We randomized the order of the summaries and the sequence of the two sexual assaults within each summary.

**Questionnaire.** Following each summary, we asked participants to choose one of the two victims to help and to explain their reason for choosing this victim. Next, for *both* sexual assaults (presented in the order they were read), the participants were asked to rate the seriousness of the assault and the vulnerability of the victim on a scale from 1 (*not at all*) to 10 (*extremely*), how much sympathy they felt for the victim from 1 (*no sympathy*) to 10 (*extremely sympathetic*), and how much anger they felt towards the perpetrator from 1 (*no anger*) to 10 (*extremely angry*). After

finishing all six summaries and the corresponding questions, the participants provided their age, gender, and ethnicity.

*Procedure.* The participants accessed and completed the study online via Qualtrics. They first agreed to an informed consent sheet and proceeded to read the summaries, answer questions regarding their helping decisions and give perceptions of the assaults. During the study, the participants received 12 manipulation-check questions (two per summary) which asked them to identify the genders of the perpetrator and victim in the described assaults. Participants answering incorrectly were encouraged to pay closer attention. Upon completion, the participants received a compensation code and access to a copy of the consent sheet and the study's purpose.

### *Data Analysis Plan*

We used summary statistics to compare raw rates of intervention (i.e., choice of helping a particular victim) across the four assault types. We aggregated intervention rates by victim gender, perpetrator gender, same-gender and opposite-gender pairings to test certain hypotheses. To evaluate intervention differences across the four assault types and desired aggregations, we used logistic mixed models and exact binomial tests. We used chi-square or Fisher's exact tests to evaluate intervention rate differences between male and female participants.

To compare ratings (e.g., sympathy for the victim) across the four assault types and participant gender we used summary statistics. Given the study design and the left-skewed distribution of the raw ratings, we used one-sample *t*-tests to determine statistically significant differences in ratings across assault types. For the same reasons, we used linear mixed models to assess differences in ratings between assaults participants chose to help versus those they did not.

Model assumptions were assessed in all cases using residual plots, histograms, and formal hypothesis testing, as appropriate. All quantitative analyses described above were completed in R, version 4.3.0 (R Foundation for Statistical Computing; Vienna, Austria).

*Sentiment Analysis.* We used VADER sentiment scores to determine sentiment (emotion) differences in participants' reasons for helping between the four assault types. Reasons for helping were compiled across the six different summaries and grouped by assault (MF, FF, MM, and FM). For example, MF reason data may contain a participant's reason for choosing MF in MF vs. FF as well their reason for choosing MF in MF vs. MM. We computed VADER sentiment scores for each reason by summing the valence score (defined by the algorithm's dictionary) of each word in the reason and normalizing the score from  $-1$  (most extreme negative) to  $+1$  (most extreme positive).

To determine if the sentiment differed by the assault type, we used the MIXED procedure in SPSS (version 26) to fit a linear mixed-effects model with a compound symmetry covariance structure to our data. The sentiment score was the dependent variable,



helping choice was the fixed effect and the participant was the random effect. Treating participants as a random effect allowed us to account for the correlation between repeated measures of the sentiment from the same participant within each assault type. Using a linear mixed model allowed us to adjust for missing data from participants who, for example, responded in only three of the four assault types.

**Cognitive Network Analysis.** To construct networks, we used the same helping reason datasets (i.e., MF, FF, MM, and FM) from the sentiment analysis. First, we transformed each dataset into a term-by-response matrix using the bag-of-words model (Salton et al., 1975). Each row in the matrix represented a unique term, each column represented an individual participant's response, and each cell gave the term's frequency in a given response. Next, we used  $tf \times idf$  (Sparck Jones, 1972) to rank order terms across responses. Since we believed networks with 9–11 nodes would provide the most useful visualization of major themes, we reduced the term-by-response matrix so it included only rows that represented the top 9–11 ranked terms. We then computed the cosine similarity between pairs of rows (terms) in the term-by-response matrix, yielding a term-by-term matrix whose entries were a measure of similarity or connectedness between terms. Finally, the Pathfinder algorithm (Schvaneveldt, 1990) scaled this similarity matrix, retaining only the most salient connections. This resulted in a network with nodes that represented key terms and links that represented primary associations between terms.

We employed the Girvan-Newman Community Detection algorithm (Newman & Girvan, 2004) to isolate major themes (i.e., clusters of nodes) in each network. This algorithm assigns nodes into communities to maximize a modularity index,  $Q$ .  $Q$  ranges from 0 to 1 and measures the proportion of links that occur within communities relative to the expected proportion if all links were placed randomly. Values of  $Q$  greater than zero indicate the community structure. We conducted sentiment analysis, network construction and community finding using Matlab (Matlab, 2022) computing software.

## Results

All results with  $p < .05$  were reported. Unless otherwise noted, when testing for differences between assault types, we performed all six pairwise comparisons (i.e., MF vs FF, MF vs MM, MF vs FM, FF vs MM, FF vs FM, MM vs FF).

### *Hypothesis 1: Effect of Victim and Perpetrator Gender on Helping Choice*

**Hypothesis 1a.** Our hypothesis that the assault type would influence the helping choice was supported ( $\chi^2(3) = 138.4, p < .001$ ). Table 1 shows helping rates for the four assault types by the participant gender. As predicted, MF victims were chosen most often (190 of 207, 91.8%), followed by FF victims (91 of 207, 44.0%), MM victims (79 of 207, 38.2%), then FM victims (54 of 207, 26.1%). Table 2 shows helping

**Table 1.** Number of Times (Percentages) Victims in the Four Assault Types Were Chosen for Help.

Assault type	Male participants (n = 111)	Female participants (n = 96)	Total (n = 207)
MF	102 (91.9%)	88 (91.7%)	190 (91.8%)
FF	51 (45.9%)	40 (41.7%)	91 (44.0%)
MM	46 (41.4%)	33 (34.4%)	79 (38.2%)
FM	23 (20.7%)	31 (32.3%)	54 (26.1%)

**Table 2.** Frequency (Raw Count and Percentages) of Choosing to Help a Victim of an Assault Type for a Given Scenario (Pairing of Assaults).

Assault type	When paired with...	Overall (n = 69)	Female participants (n = 32)	Male participants (n = 37)
Mf	Ff	64 (92.8%)**	29 (90.6%)	35 (94.6%)
	FM	63 (91.3%)**	30 (93.8%)	33 (89.2%)
	MM	63 (91.3%)**	29 (90.6%)	34 (91.9%)
FM	FF	22 (31.9%)**	13 (40.6%)	9 (24.3%)
	MF	6 (8.7%)**	2 (6.3%)	4 (10.8%)
	MM	26 (37.7%)*	16 (50.0%)	10 (27.0%)
FF	FM	47 (68.1%)**	19 (59.4%)	28 (75.7%)
	MF	5 (7.2%)**	3 (9.4%)	2 (5.4%)
	MM	39 (56.5%)	18 (56.3%)	21 (56.8%)
MM	FF	30 (43.5%)	14 (43.8%)	16 (43.2%)
	FM	43 (62.3%)**	16 (50.0%)	27 (73.0%)
	MF	6 (8.7%)**	3 (9.4%)	3 (8.1%)

Note. Note that each participant encountered each perpetrator-victim-gender combination three times throughout the study, so the maximum count for each summary (e.g., MF vs FF) is three times *n*. The participant gender did not affect the helping choice.

\* $p < .01$ , \*\* $p < .001$

rates for the six pairwise comparisons. MF victims were chosen for help 92.8% (64 of 69), 91.3% (63 of 69), and 91.3% (63 of 69) of the time over FF, FM, and MM victims, respectively (all  $p < .001$ ). The participants chose to help FF (47 of 69, 68.1%) and MM victims (43 of 69, 62.3%) more often than FM victims,  $p < .001$  and  $p = .009$ , respectively.

*Hypothesis 1b.* As hypothesized, the victim's gender impacted the helping choice. Female victims were chosen for help more (212 of 276, 76.8%) than male victims (64 of 276, 23.2%),  $\chi^2(1) = 141.0$ ,  $p < .001$ .

*Hypothesis 1c.* Also as predicted, the perpetrator's gender influenced the helping choice. The participants chose to help victims of male-perpetrated assaults more

(200 of 276, 72.5%) than the victims of female-perpetrated assaults (76 of 276, 27.5%),  $\chi^2(1) = 103.1, p < .001$ .

### **Hypothesis 2: Ratings of the Perpetrator, Victim and Assault Seriousness**

For Hypothesis 2, we used means, medians, and interquartile ranges (IQRs) as descriptive statistics because the distributions of the rating variables were highly left-skewed. Table 3 gives descriptive statistics for the rating variables for each of the assault types by the participant gender.

**Hypothesis 2a.** We found support for our hypothesis that the participants would give the highest pro-victim (victim vulnerability, sympathy for the victim), anti-perpetrator (anger towards the perpetrator) and assault seriousness ratings to MF assaults and lowest to FM assaults. Victim vulnerability was the highest for MF victims ( $M = 8.99, Mdn = 10, IQR = 8-10$ ), followed by FF victims ( $M = 8.32, Mdn = 9, IQR = 7-10$ ), MM victims ( $M = 8.20, Mdn = 9, IQR = 7-10$ ), then FM victims ( $M = 7.24, Mdn = 8, IQR = 6-10$ ). MF victims were viewed as more vulnerable than victims in the other three assault types (all  $p < .001$ ). FF victims and MM victims were perceived as more vulnerable compared to FM victims ( $p < .001$  in both cases), but there was no significant difference in vulnerability ratings for FF victims compared to MM victims.

Participants felt most sympathetic towards MF victims ( $M = 9.06, Mdn = 10, IQR = 9-10$ ), followed by FF victims ( $M = 8.55, Mdn = 9, IQR = 8-10$ ), MM victims ( $M = 8.40, Mdn = 9, IQR = 7-10$ ), and then FM victims ( $M = 7.61, Mdn = 8, IQR = 6-10$ ). Sympathy for MF victims was higher than the sympathy for victims of the three other assault types (all  $p < .001$ ). In addition, participants were more sympathetic towards FF and MM victims than FM victims (both  $p < .001$ ). Sympathy for FF victims compared to MM victims did not differ.

**Table 3.** Raw Mean (Median) Rating Responses by Assault Type and Participant Gender.

Variable	Participant	MF	FF	MM	FM
	gender				
Situation seriousness	Female	9.14 (10.0)	8.89 (10.0)	9.00 (10.0)	8.75 (9.0)
	Male	8.78 (10.0)	8.16 (9.0)	8.11 (9.0)	7.26 (8.0)
	Overall	8.95 (10.0)	8.50 (9.0)	8.52 (9.0)	7.96 (8.5)
Victim vulnerability	Female	9.18 (10.0)	8.80 (9.0)	8.81 (9.0)	8.09 (8.0)
	Male	8.82 (10.0)	7.91 (8.0)	7.68 (8.0)	6.51 (7.0)
	Overall	8.99 (10.0)	8.32 (9.0)	8.20 (9.0)	7.24 (8.0)
Victim sympathy	Female	9.28 (10.0)	9.05 (10.0)	9.03 (10.0)	8.70 (9.0)
	Male	8.87 (10.0)	8.12 (9.0)	7.85 (9.0)	6.66 (7.0)
	Overall	9.06 (10.0)	8.55 (9.0)	8.40 (9.0)	7.61 (8.0)
Anger toward perpetrator	Female	8.72 (10.0)	8.58 (10.0)	8.57 (10.0)	8.19 (9.0)
	Male	8.55 (10.0)	7.65 (8.0)	7.87 (9.0)	6.71 (7.0)
	Overall	8.63 (10.0)	8.08 (9.0)	8.20 (9.0)	7.40 (8.0)

The participants were angriest at MF perpetrators ( $M = 8.63$ ,  $Mdn = 10$ ,  $IQR = 8-10$ ), followed by MM perpetrators ( $M = 8.20$ ,  $Mdn = 9$ ,  $IQR = 7$  to  $10$ ), FF perpetrators ( $M = 8.08$ ,  $Mdn = 9$ ,  $IQR = 7$  to  $10$ ), then FM perpetrators ( $M = 7.40$ ,  $Mdn = 8$ ,  $IQR = 6-10$ ). Anger for the perpetrator was higher for MF perpetrators than for MM, FF, and FM perpetrators (all  $p < .01$ ). Participants were significantly angrier towards MM and FF perpetrators than FM perpetrators (both  $p < .05$ ) but did not differ in anger towards MM and FF perpetrators.

The participants viewed the MF assault as the most serious ( $M = 8.95$ ,  $Mdn = 10$ ,  $IQR = 8-10$ ), followed by the MM assault ( $M = 8.52$ ,  $Mdn = 9$ ,  $IQR = 8-10$ ), the FF assault ( $M = 8.50$ ,  $Mdn = 9$ ,  $IQR = 7-10$ ), and then the FM assault ( $M = 7.96$ ,  $Mdn = 8.5$ ,  $IQR = 7-10$ ). MF assaults were viewed as more serious than each of the other three assaults (all  $p < .05$ ). MM and FF assaults were perceived as significantly more serious than FM assaults (both  $p < .05$ ), but MM and FF were not seen as different in terms of seriousness.

**Hypothesis 2b.** Our hypothesis that participants would rate the assault they chose for help with a higher pro-victim, anti-perpetrator, and perceived seriousness than the unchosen assault was supported.

Vulnerability ratings were higher for the chosen victim ( $M = 8.65$ ,  $Mdn = 9$ ,  $IQR = 8-10$ ) compared to the unchosen victim ( $M = 7.72$ ,  $Mdn = 8$ ,  $IQR = 7-10$ ),  $\chi^2(1) = 98.2$ ,  $p < .001$ . Participants had more sympathy for the chosen victim ( $M = 8.82$ ,  $Mdn = 10$ ,  $IQR = 8$  to  $10$ ) compared to the unchosen victim ( $M = 7.99$ ,  $Mdn = 9$ ,  $IQR = 7$  to  $10$ ),  $\chi^2(1) = 81.9$ ,  $p < .001$ . Anger was higher towards perpetrators assaulting the chosen victim ( $M = 8.40$ ,  $Mdn = 9$ ,  $IQR = 8-10$ ) compared to those assaulting the unchosen victim ( $M = 7.73$ ,  $Mdn = 8$ ,  $IQR = 6-10$ ),  $\chi^2(1) = 58.5$ ,  $p < .001$ , and the chosen assault was rated more serious ( $M = 8.74$ ,  $Mdn = 10$ ,  $IQR = 8-10$ ) than the unchosen assault ( $M = 8.22$ ,  $Mdn = 9$ ,  $IQR = 7-10$ ),  $\chi^2(1) = 43.0$ ,  $p < .001$ .

### Hypothesis 3: Reasons for Helping Choice

**Hypothesis 3a.** Table 4 displays estimated sentiment scores for each assault type, classified following Elbagir and Yang (2019) as negative ( $-0.5$  to  $-0.001$ ), neutral

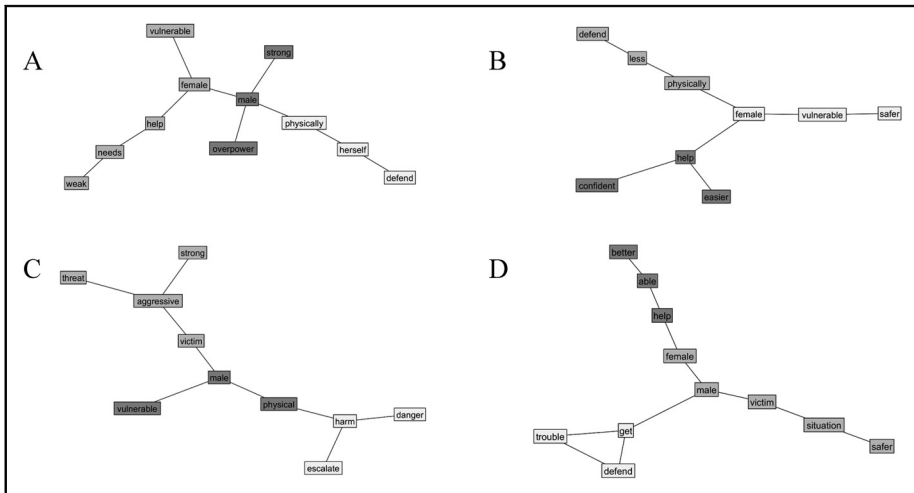
**Table 4.** Sentiment Classification, Mean Sentiment Scores and Related Statistics by Assault Type.

Assault type	Sentiment	Mean	Std. error	Df	95% CI
MF	Negative	-0.03	0.03	185.24	[-0.10, 0.04]
FF	Positive	0.12	0.04	341.97	[0.04, 0.21]
MM	Negative	-0.03	0.05	387.56	[-0.12, 0.07]
FM	Negative	-0.02	0.05	438.63	[-0.13, 0.09]

*Note.* Sentiment scores and related statistics were calculated from the open-ended responses participants gave when asked why they chose to help victims in each of the four assault types. Sentiment score classification followed Elbagir and Yang (2019).

(−0.001 to 0.001), and positive (0.001 to 0.5). Our hypothesis that the helping choice would predict the sentiment was supported,  $F(3, 456.89) = 4.10$ ,  $p = .007$ . FF had a greater sentiment score than FM ( $B = -0.14$ ,  $SE = 0.06$ ,  $t(473.5) = -2.24$ ,  $p = .026$ , 95% CI:  $[-0.27, -0.02]$ ), MM ( $B = -0.15$ ,  $SE = 0.06$ ,  $t(460.3) = -2.63$ ,  $p = .009$ , 95% CI:  $[-0.26, -0.04]$ ), and MF ( $B = -0.15$ ,  $SE = 0.05$ ,  $t(446.7) = -3.35$ ,  $p = .001$ , 95% CI:  $[-0.24, -0.06]$ ). We found no other significant pairwise differences.

**Hypothesis 3b.** Figure 1 shows the cognitive networks derived from reasons for helping by assault type. Network communities are delineated by grayscale variations.  $Q$  values for all networks ranged from 0.22 to 0.31, indicating moderate to strong community structure (Newman & Girvan, 2004). Our hypothesis that networks would differ in major themes (e.g., victim, perpetrator, bystander, and societal expectations) was supported. The MF network's themes concerned the victim's vulnerability, her weakness, and her inability to defend herself (left and right communities) as well as the perpetrator's physical strength and power (middle community). The FF network reflected themes of a vulnerable female victim (top right community) and bystander confidence in intervening (bottom community). Communities of the MM network concerned the risk the male perpetrator's aggressive and physically strong nature posed to victims (top left), and the danger of the assault and its potential for escalation (bottom). Communities of the FM network concerned the risk the male perpetrator's aggressive and physically strong nature posed to victims (top left), and the danger of the assault and its potential for escalation (bottom).



**Figure 1.** Cognitive networks derived from reasons for helping victims in each assault type. Note. Network communities are indicated by varying levels of grayscale. Panel A: MF Network derived from reasons for helping a female victim being attacked by a male.  $Q = 0.30$ . Panel B: FF Network derived from reasons for helping a female being attacked by a female.  $Q = 0.22$ . Panel C: MM Network derived from reasons for helping a male being attacked by a male.  $Q = 0.27$ . Panel D: FM Network derived from reasons for helping a male being attacked by a female.  $Q = 0.31$ .

right). Finally, the top and right communities of the FM network suggested bystanders would intervene because they were confident they could help without risking their safety. The left community suggested that not intervening could lead to repercussions for the victim if he defends himself against a female perpetrator, possibly being perceived as the aggressor.

### *Exploratory Analyses: Participant Gender and Same Versus Mixed Gender Assaults*

The participant gender had no effect on the helping choice but did affect the victim sympathy, anger towards the perpetrator and perceived assault seriousness (Table 3). For FF, MM, and FM, female participants gave higher ratings of victim sympathy ( $F(3,818)=5.34, p=.001$ ), victim vulnerability ( $F(3,819)=3.26, p=.021$ ), anger towards the perpetrator ( $F(3,819)=2.78, p=.040$ ) and assault seriousness ( $F(3,819)=3.08, p=.027$ ) compared to male participants.

When deciding between helping a same versus mixed-gender assault victim, participants chose the mixed-gender assault victim more often (175 of 276, 63.4%) than the same-gender assault victim (101 of 276, 36.6%),  $\chi^2(1)=38.7, p<.001$ .

## **Discussion**

This study contributes to the literature on bystander intentions in sexual violence in several ways. First, unlike the present study, prior studies in this domain had only partially manipulated perpetrator and victim gender to consider their effect on the helping intent (e.g., Katz, 2015). A complete manipulation allowed us to examine not only bystander intentions within the typical “male perpetrator-female victim” framework but also within the less researched FF, MM, and FM frameworks. Second, this full manipulation - when combined with our unique forced-choice design, allowed us to systematically investigate how the perpetrator gender, victim gender and the combination of the two affected participants’ helping preferences and assault perceptions. For example, we examined how the perpetrator gender influenced helping intentions and whether this influence varied by the gender of the victim. Third, we presented new analytical techniques in the framework of sexual assault experiments. Though cognitive networks alone have been used by previous researchers to investigate sexual assault (e.g., Lippert et al., 2018; Lynch et al., 2019), in this study we applied a combination of cognitive network construction and community detection methods to understand how sexual victimization was conceptualized. Unlike traditional methods (e.g., human coding) for analyzing open-end response data, cognitive networks, community detection algorithms and sentiment analysis are efficient and rely on less subjective methods to draw conclusions.

Our results are consistent with research suggesting characteristics associated with gender effect participants’ perceptions and responses to sexual violence (e.g., Davies et al., 2012; Persson et al., 2018; Schwark & Bohner, 2019). Common associations

regarding gender are that males are dominant, strong, and aggressive - in line with a perpetrator role - and that females are weak, vulnerable and in need of protection - compatible with a victim role (Bates, 2020; Seelau et al., 2003). In this way, the referent assault is that of a weak female being attacked by a strong male (Christie, 1986). If participants relied on ideas about gender in the current study, we would expect that the further from the referent assault another assault is, the less legitimate that assault is viewed and the less likely a victim will receive help. Indeed, we found participants responded most favorably (i.e., the highest frequency of helping, highest pro-victim, highest anti-perpetrator, and highest assault seriousness ratings) to MF assaults (closest to the referent assault) and least favorably to FM assaults (furthest from the referent assault).

Our findings involving FF and MM can also be explained with respect to the referent assault (MF assaults). Past research shows people rely more on victim than perpetrator characteristics to make judgments about sexual assaults (Franiuk et al., 2020). Thus, it is likely that when deciding who to help, our participants compared assault victims before comparing assault perpetrators. If only one of the assaults had a female victim, that assault was deemed closer to the referent assault and that victim chosen for help, which explains why FF victims were chosen for help more often than MM or FM victims. When the choice was between victims of the same gender, participants turned to the perpetrator to assess how far from the referent assault each assault was. Participants chose to help MM victims more often than FM victims and chose to help MF victims more often than FF victims because of the presence of the male perpetrator, which aligned with the referent assault.

Aspects of gender appeared to influence participants' helping choices particularly when the assault aligned with expectations of a female victim or a male perpetrator. MF and FF networks both spoke of the "weak", "vulnerable", and "helpless" female victim whereas MF and MM revealed concepts of the "strong", "threatening", and "aggressive" male perpetrator. Past research showed that bystanders were more inclined to intervene when there was the risk of physical harm to the victim (Fisher et al., 2011). Drawing upon this, it may be that the associations which the participants' had with gender highlighted a strength disparity (as seen in comparing network nodes) between the perpetrator and victim in assaults involving female victims and victims of male perpetrators. This strength disparity would predict a risk of physical injury which may have driven participants' decisions to help MF and MM victims.

Interestingly, even for assaults not involving a male perpetrator and a female victim, participants still seemed to rely on associations regarding gender. For instance, participants characterized female perpetrators as "weak" but did so to assess their own safety and capacity to help. Nodes in FF and FM networks like "safer", "confidence", "easier/better", "able to help", suggested that bystanders chose to help female perpetrated assault victims because of a low fear of injury and a high confidence in helping - two reasons bystanders give for intervening (e.g., Zelin et al., 2019). If the perpetrator and victim are both female, we might expect participants to have the lowest fear of injury and highest confidence toward intervention, which could explain why sentiment in helping reasons was most positive for FF assaults. The associations surrounding a

male perpetrator and a female victim were even used to motivate the helping choice in FM assaults. The FM network nodes “defend”, “get” and “trouble” indicated that help was chosen for the male victim because if he tried to defend himself the male perpetrator-female victim stereotype could lead people to view him as the aggressor rather than the victim.

In our exploratory analysis, we found no difference in male and female participants’ helping choices, aligning with Graham et al.’s (2023) study on bystander responsiveness to intimate partner violence that fully manipulated victim and perpetrator gender. We did find gender differences in participant attitudes (i.e., female participants held stronger pro-victim and anti-perpetrator attitudes than male participants) which mirrored those reported in the sexual violence literature (e.g., Lynch et al., 2019). However, these differences only applied to three of the four assaults. The lack of gender differences for the MF assault could be because it matched the expectations of a female victim and a male perpetrator. Research suggests that participants’ beliefs about gender may better explain perceptions of sexual assault than participant gender (Simonson & Subich, 1999). Thus, if a sexual assault matches gender expectations, conventional ideas about gender may dominate, and participant gender is less influential. Our exploratory analysis also showed mixed-gender assault victims were chosen for help more than same-gender assault victims. However, this finding was likely driven by the high helping rates for MF rather than a true preference for helping mixed-gender assault victims.

### *Limitations and Future Work*

While our study introduces new insights and methodologies to bystander research on sexual assault, we acknowledge limitations. First, we measured the intention to help and not actual helping behavior, which assumes that the intention to help predicts actual helping behavior. This assumption has theoretical and empirical roots: The Theory of Planned Behavior (Ajzen, 1991) asserts that behavioral intent is the most important determinant of behavioral performance, and empirical evidence supports a positive relationship between bystander intentions and bystander behaviors regarding sexual assaults (McMahon et al., 2015). Second, we acknowledge the low probability of a bystander witnessing two simultaneous sexual assaults. However, as hypothetical moral dilemmas (e.g., “the trolley problem”) have been explored extensively in philosophy and psychology, our approach served to isolate distinct factors that might affect human decision-making (Nichols & Mallon, 2006) in the context of sexual violence. In particular, by having participants make helping choices between simultaneous assaults, we were able to capture bystanders’ *relative* evaluation of an assault rather than their *absolute* evaluation which is typically measured in bystander studies (e.g., Schachtman et al., 2023). Studying relative judgments of assaults provided a new perspective on bystander behavior, which can be used to better understand outcomes for victims. Finally, we directed participants to make a helping choice despite evidence that bystanders do not always intervene in sexual assaults (e.g., Hoxmeier et al., 2018). Nonetheless, as noted earlier, employing a forced choice enabled a systematic



exploration of the influence of perpetrator gender, victim gender, and their combination on helping choice.

In the present study, we limited our investigation of participant attributes impacting helping choice to gender. Subsequent research could examine whether participant characteristics beyond age, gender and ethnicity impact helping choice in the scenarios depicted in the present study. Trauma history is one participant characteristic worth exploring. Though the literature suggests that previous victimization does not have a strong direct association with bystander intervention with respect to sexual violence, it could act as a moderator on helping choice (Mainwaring et al., 2023). For example, participant gender and personal history have interacted such that trauma history impacts female judgments on sexual assault cases but not male judgements (Cromer & Freyd, 2007). We might expect similar findings in the case of helping behavior when choosing between victims—helping choice may be affected by trauma history in females but not males.

Another participant characteristic to investigate is bystander efficacy (i.e., confidence to intervene). Past work showed that bystanders were more likely to intervene in sexual assaults when they had greater efficacy to intervene (Hust et al., 2019; Zelin et al., 2019), and that bystander training programs increased bystander efficacy in interpersonal violence contexts (e.g., Alegría-Flores et al., 2017; Stewart, 2014). Our cognitive network models indicated participants felt more efficacious when a female perpetrator was involved relative to when a male perpetrator was involved. Future research could quantitatively establish whether bystander efficacy changes as a function of perpetrator gender, and if so, investigate factors that moderate or indirectly affect the relationship between perpetrator gender and bystander efficacy.

Finally, our study has implications for informing innovative bystander sexual assault prevention programs that encompass instances of male-on-male, female-on-female, and female-on-male assault. Compared to the general population, victimization rates are notably higher in LGBTQ+ communities where sexual violence incidents often occur between same-gendered, intimate partners (Basile et al., 2022; Edwards et al., 2015). Yet, bystander prevention programs portraying same-gendered assaults remain scarce (McMahon et al., 2020). Likewise, despite research indicating that sexual victimization psychologically equally affects male and female victims (Walker et al., 2005), discussions about male victimization and associated misconceptions are lacking in bystander intervention programs (Rosenstein & Carroll, 2015). Implementing prevention education or training that highlights non-heteronormative assaults or instances of female-led sexual aggression may empower bystanders to recognize and intervene in such situations.

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## Ethical Statement

All procedures performed in this study were in accordance with the principles of the Declaration of Helsinki and ethical standards of the University of Kentucky Institutional Review Board (approval number 43723).

## Informed Consent

Informed consent was obtained from all individual participants included in the study.

## ORCID iD

Anne Lippert  <https://orcid.org/0000-0003-3920-1582>

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## Author Biographies

**Anne Lippert**, PhD is an Assistant Professor of Psychology in the College of Arts and Sciences at Prairie View A&M in Houston, Texas. Her research interests include issues of victimization, applications of text analysis to psychology, knowledge representation, and student use of technology.

**Dylan Baker**, BA is an Economics PhD student at the University of Chicago in Chicago, Illinois. His primary fields of interest include public economics and law & economics. He earned his bachelor’s degrees from the University of Kentucky in economics, political science, psychology, and history.

**Greg Hawk**, PhD is a Research Assistant Professor of Statistics in the Dr. Bing Zhang Department of Statistics, College of Arts and Sciences at University of Kentucky in Lexington, Kentucky. He serves as the Training Core Director for the Predictive Analytics and Data Science (PADS) Hub at the University of Kentucky, and his research interests include predictive modeling, model selection, and collaborative statistics.

**Nissa Gongora**, BS is a recent graduate of Prairie View A&M, where she earned her degree in psychology. She has a variety of interests including imposter phenomenon in students at Historically Black Colleges and Universities (HBCUs) and industrial-organizational psychology. She will begin Wayne State's Ph.D. in Industrial/Organizational (I/O) Psychology Program in August of 2024.

**Jonathan Golding**, PhD is a Professor in the Department of Psychology, College of Arts and Sciences at the University of Kentucky, Lexington, Kentucky. His primary research interests include psychology and law, specifically juror decision-making in victimization cases.