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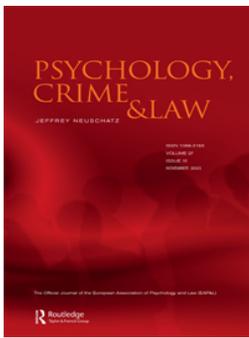
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# Do community females display a propensity towards sexual aggression? An empirical assessment of prevalence and psychological predictors

Zak Evernden<sup>a</sup>, Samuel T. Hales <sup>a</sup>, Theresa A. Gannon <sup>a</sup>, Kyle Best<sup>a</sup> and Tracy Pellatt-Higgins <sup>b</sup>

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## ABSTRACT

**Objective:** Despite growing interest in female sexual offending, academic understanding of community females who display a propensity towards sexual aggression (PSA) is lacking. **Method:** Across three vignette studies, we recruited three independent samples of community females ( $N_{\text{overall}} = 555$ ) to assess the prevalence of female PSA towards males. We also examined whether established risk factors associated with male PSA are valid predictors of female PSA. These included ambivalent sexist attitudes, inappropriate sexual interests, non-sexual aggression, impulsivity, male rape myth acceptance, and sexual preoccupation. **Results:** Across studies, findings showed that between 26.9% and 44.0% of participants did not emphatically reject an interest in adult male-directed PSA. Key predictors of participants' non-zero endorsement included an interest in violent sexual activities, rape myth acceptance, and sexual preoccupation. **Conclusions:** Though lower than their male counterparts (see Bohner, G., Reinhard, M. A., Rutz, S., Sturm, S., Kerschbaum, B., & Effler, D. (1998). Rape myths as neutralizing cognitions: Evidence for a causal impact of anti-victim attitudes on men's self-reported likelihood of raping. *European Journal of Social Psychology*, 28(2), 257–268), some community females self-report an interest in perpetrating male-directed sexual aggression. We discuss the implications of our findings on harm prevention efforts with females, alongside avenues for future research.

## ARTICLE HISTORY

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## KEYWORDS

Inappropriate sexual interests; community females; rape proclivity; sexual aggression; vignette study

Over the past three decades, several psychologically-informed theories of male sexual offending have been developed and well validated (e.g. Buss & Malamuth, 1996; Marshall & Barbaree, 1990; Seto, 2019; Stinson et al., 2008; Ward & Beech, 2006). This work stems from the overwhelming evidence base indicating that males commit the majority of sexual crimes internationally, mostly against females (Gannon & Cortoni, 2010; Office

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for National Statistics, 2018; Ward & Beech, 2006). It is unsurprising, then, that compared to their female counterparts, the knowledge base pertaining to the risk factors and psychological profiles of incarcerated males who have committed sexual harm, as well as their non-offending counterparts in the community who display a propensity to engage in sexual offending behaviours, is comparatively broad (e.g. Hanson & Morton-Bourgon, 2005; Mann et al., 2010; Seto & Lalumière, 2010; Tharp et al., 2013).

In light of researchers' preoccupation with understanding male perpetrators, theoretical explanations of female sexual offending against males are notably underdeveloped (see Gannon & Cortoni, 2010). Given that females are responsible for at least 4.6% of all known sexual offences (Cortoni et al., 2009) – a significant proportion of which are perpetrated against males (Vandiver, 2006; Wijkman et al., 2010) – this lack of understanding warrants urgent academic attention. For example, in their 2010 National Intimate Partner and Sexual Violence Survey, the Centers for Disease Control and Prevention (CDC, 2011) reported that over one-in-four incidents of sexual aggression against males were perpetrated by females. This number increases drastically when considering specific sexual offences; for example, the National Center for Injury Prevention and Control (2011) and Stemple et al. (2017) report that between 68.6% and 79.2% of males who disclose being 'made to penetrate a person' (a common form of non-consensual sex) reported female perpetrators.

Unfortunately, empirically assessing the prevalence and predictors of sexual aggression amongst community samples is extremely difficult, as those with a history of perpetration typically downplay or do not admit to their offences (see Kolivas & Gross, 2007). One approach that has allowed for the reliable evaluation of the prevalence and characteristics of illegal sexual activity amongst non-incarcerated individuals is the assessment of self-reported propensity to engage in sexual aggression (PSA; see Bohner et al., 1998). Studies assessing PSA typically use vignettes, wherein participants read fictitious, but realistic, acquaintance rape scenarios and then are asked to rate how likely it is that they would (a) behave similarly to the perpetrator depicted in the vignette, and (b) enjoy or be sexually aroused by the situation described, if they could be assured of not being caught or punished (e.g. Alleyne et al., 2014; Bohner et al., 1998). Composite scores are then calculated across scenarios to form an overall PSA index. In line with established procedures for the analysis of PSA (e.g. Briere et al., 1992; Gannon & O'Connor, 2011), participants who do not emphatically reject all behavioural and enjoyment/arousal items are then classed as possessing at least some interest in engaging in sexual aggression.

The use of the PSA paradigm has been positively evaluated as a means of assessing interest in sexual aggression amongst community samples and is believed to lead to valid estimates of prevalence (e.g. Alleyne et al., 2014; O'Connor & Gannon, 2021; Palermo et al., 2019). There are two possible explanations for this. First, it has been hypothesised that reading the vignettes, which require participants to imagine themselves as the perpetrator in the hypothetical scenarios, heightens brain activation associated with sexual offending behaviours, in turn increasing the likelihood that an individual will indicate some endorsement of sexual aggression (Jeannerod & Frak, 1999). Second, as PSA measures generate a composite score based on participants' responses to behavioural and enjoyment/arousal items, they increase the likelihood of detecting subtle PSA and decrease participants' susceptibility to socially desirable response patterns – a

common participation bias recorded across sexual aggression research (for a review, see Tan & Grace, 2008). This is evident from historic studies of PSA (e.g. Malamuth, 1981), where researchers used to ask participants to only self-report their behavioural propensity to written scenarios of acquaintance rape, which led to significantly lower estimates of prevalence.

Studies assessing PSA have highlighted high rates (>30%) of community males who self-report a likelihood to commit rape or use force for sexual purposes with a woman if they knew that they would not get caught (e.g. Alleyne et al., 2014; Bohner et al., 1998). However, despite evidence that a notable proportion of men have experienced unwanted sexual contact from women (see CDC, 2011), there remains a paucity of research examining PSA in females. Of the studies that do exist, researchers have relied on demographically narrow samples (e.g. female college students; Anderson, 1996, 1998; Craig Shea, 1998; Perry et al., 1998; Schatzel-Murphy et al., 2009), which are not representative of the wider community female population. These include a vignette study by Perry et al. (1998), who discovered that a notable proportion (>25%) of their female college student participants ( $n=97$ ) did not emphatically reject behavioural items linked to a likelihood to engage in sexually aggressive acts, as well as a recent study by Struckman-Johnson et al. (2020) that assessed the predictors of female sexual aggression amongst MTurk workers in the US. Both authors suggest that their findings provide evidence that a subsection of community females display PSA; however, they note that their samples were too constrained to warrant any meaningful conclusions and that follow-up research adopting more diverse samples would be required before their findings were generalisable. Common methodological confines such as these limit our understanding of female PSA and hamper the development of theory and practice regarding female-perpetrated sexual aggression.

The present set of studies combat the limitations of previous work to provide a more reliable assessment of female PSA across three representative samples of community females. Using the vignette paradigm, we assess both the prevalence and associated psychological correlates of self-reported PSA by community females. We use, where possible, established gender-informed scenario-based methods to assess participants' propensity to engage in sexual aggression (such as those derived from male sexual aggression literature; e.g. Bohner et al., 1998). Whilst we appreciate that these methods were developed for use with community males, we are confident that they offer a valid means of assessing PSA in females based on findings from recent research examining other forms of adult-perpetrated sexual offending behaviours (e.g. Alleyne et al., 2014; O'Connor & Gannon, 2021; Palermo et al., 2019). Before describing the current research, we will review previous academic literature assessing the psychological characteristics related to PSA amongst males and females within the community.

### **Psychological characteristics of PSA amongst community samples**

Various psychological correlates of male PSA have been established in recent decades. Of these, perhaps the strongest link is between PSA and the acceptance of *rape myths* (Abrams et al., 2003; Malamuth, 1981; Murnen et al., 2002), which are defined as 'descriptive or prescriptive beliefs about rape [...] that serve to deny, downplay or justify sexual violence that men commit against women' (Bohner, 1998, p. 14). Subjective propensity to

engage in rape myth acceptance (RMA) is assessed by examining an individual's endorsement of prolific rape myths, such as 'Any healthy woman can resist a rapist if she really wants to' (Burt, 1980, p. 223). Researchers have established a causal link between RMA and self-reported PSA (see Bohner et al., 2005). For example, Bohner et al. (1998) demonstrated that the link between the two constructs is strongest when rape myths are assessed *before* participants read PSA vignettes. Subsequently, they suggested that, for community males, RMA leads to PSA through '[...] neutralizing in advance norms that oppose sexual violence' (p. 259).

To date, female RMA has been considered mostly from a female victim/male perpetrator perspective (see Chapleau et al., 2008; Turchik & Edwards, 2012) and many research studies into PSA have adopted narrow definitions of RMA which account only for male sexual aggression perpetrated against women (e.g. Bohner et al., 1998). In this context, community females have been shown to report some acceptance of rape myths, though this is to a lesser degree than their males counterparts (see Lonsway & Fitzgerald, 1994). For example, in their large-scale study looking at peer-on-peer sexual coercion, Kjellgren et al. (2011) assessed RMA amongst Swedish and Norwegian adolescent females ( $N = 4,363$ ). The authors found that females who reported sexual coercion ( $n = 37$ ) endorsed significantly more rape myths than their non-offending peers, as well as higher levels of sexual lust and violent pornography consumption, and more sexual partners. This relationship held when the authors compared sexually coercive participants to their counterparts with histories of non-sexual violent behaviours. Similar to the male sexual aggression literature (see Lonsway & Fitzgerald, 1994), these results suggest that females who sexually offend against adults show increased levels of female victim/male perpetrator RMA relative to their non-sexually offending peers. Therefore, it is important to study RMA as part of sexual aggression propensity research with community females.

Similarly, research has not yet examined how female's PSA towards males relates to their sexual interests. Whilst emerging evidence suggests that inappropriate sexual interests – defined here as '[...] enduring attractions to sexual acts that are illegal (e.g. sex with children, rape) or highly unusual (e.g. fetishism, autoerotic asphyxia)' (Hanson & Morton-Bourgon, 2005, p. 1154) – are not a risk factor for incarcerated females who have sexually offended (see Marshall & Miller, 2019), research has highlighted that they may constitute a strong predictor of past sexual aggression amongst their non-incarcerated counterparts (e.g. Bouffard et al., 2016; Craig Shea, 1998). This includes a recent study into the use of post-refusal sexual persistence (PRSP) – a specific form of sexual aggression – amongst community females in the US, in which researchers proposed that participants with a history of PRSP were sexually attracted to situations where they compel a man to have sex (Struckman-Johnson et al., 2020). Therefore, it would be interesting – and potentially of high academic and clinical value – to assess whether inappropriate offence-related sexual interests are associated with PSA in community females.

Beyond the aforementioned factors, there are theoretical grounds to assess in our studies other psychological variables that researchers have demonstrated as being strong predictors of sexual aggression amongst known female offenders. For example, research into the *Descriptive Model of Female Sexual Offending* (DMFSO) – the first offence-process theory to explain why females engage in illegal sexual activities – has demonstrated that impulsivity is a key offence-related risk factor amongst incarcerated persons (Gannon et al., 2008, 2010; Gannon et al., 2014) and thus may help to explain community

females' PSA. Focussed assessments of college sexual assault have further suggested that more gendered attitudinal factors may constitute a reliable predictor of past sexual aggression. For example, both Anderson (1996) and Christopher et al. (1998) showed that ambivalent attitudes towards men were highly correlated with female college students' self-reported use of sexual coercion. It would be of academic worth to assess whether the prognostic value of females' negative attitudes towards men maintains outside of college-only samples, across females within the broader community.

Finally, as Struckman-Johnson et al. (2020) emphasise, academic understanding of female sexual offending is extremely under-developed; subsequently, it is reasonable for researchers to look towards the established male sexual offending field when developing research hypotheses on community females' propensity to sexually offend. This broad knowledge base has highlighted numerous psychological variables associated with offence risk (e.g. Hanson & Morton-Bourgon, 2005; Mann et al., 2010). For example, empirical research has demonstrated that sexual preoccupation – defined as 'an abnormally intense interest in sex that dominates psychological functioning' (Mann et al., 2010, p. 198) – constitutes a key risk factor for both incarcerated and non-incarcerated males who have sexually offended against adults (e.g. Hanson & Morton-Bourgon, 2004, 2005; Zinzow & Thompson, 2015). Similarly, a recent meta-analysis by Wilson et al. (2015) has shown that general (non-sexual) aggression is also a good predictor of past sexual aggression amongst community males, particularly those who target adult victims. The authors' findings also suggest that this association is stronger for (both community and incarcerated) females than males and encourage follow-up research to assess this further. Exploring the prognostic value of these risk factors will help refine academic understanding of the cause of community females' sexual aggression and encourage more empirically-informed research in the area. This is crucial for the development of better treatment provisions for females who possess a propensity to engage in sexual offending behaviours.

## The present studies

The following set of psychological studies represent the most holistic empirical investigation of PSA amongst community females to date. Given that previous research has shown that a subset of community males display a propensity to engage in sexually aggressive acts (e.g. Alleyne et al., 2014; Bohner et al., 1998), we hypothesise that a proportion of the community females in our studies will also self-report some level of PSA. We anticipate this will be to a lesser degree than their male counterparts, given that females are responsible for less sexual offences generally. We will compare our findings to established rates of PSA amongst community males, as reported by Bohner et al. (1998).

Furthermore, we will explore whether key psychological factors associated with male sexual offending behaviours can be used to predict female PSA amongst participants who report a propensity to engage in male-directed sexual aggression. Specifically, given their strong prognostic value across the sexual offending literature, we hypothesise that inappropriate offence-specific sexual interests and RMA (relating to men as victims) will be key predictors of PSA amongst the community females in our sample. We will also explore in Study 3 whether other established psychological factors – including general aggression, ambivalence towards men, impulsivity, and sexual preoccupation – possess

utility in predicting female PSA, to help advance academic understanding of the aetiology of PSA amongst community females. We will also examine ambivalence towards the men as a gender-specific variable in the prediction of female PSA. Our hypotheses will be evaluated across all three studies, allowing for the replication of any significant findings.

Study 1 examines the prevalence of female PSA towards males, female victim/male perpetrator RMA, and inappropriate sexual interests amongst a sample of community females recruited online through social media. By varying the presentation order of our RMA and PSA measures, this study will evaluate Bohner et al.'s (1998) hypothesis that RMA leads to PSA through '[...] neutralizing in advance norms that oppose sexual violence' (p. 259). Study 2 builds on Study 1 by using a larger participant sample recruited through the popular crowdsourcing platform, Prolific, to replicate our earlier findings. Here, we will use the best identified order of presenting the PSA and RMA measures (determined by our Study 1 findings) to ensure the most valid estimate of participants' PSA. Finally, to examine whether there are other previously unidentified predictor variables related to females' PSA towards males, Study 3 methodologically replicates Studies 1 and 2 and also assesses several new variables hypothesised to be related to PSA. These include measures of aggression, ambivalence towards men, impulsivity, and sexual preoccupation. This final study will identify how these new variables relate to those in Studies 1 and 2 and highlight the variables that best predict community females' PSA towards men.

## Method

### Participants

#### Study 1

Overall, 121 adult females (aged 18 years or over) were recruited via social media platforms (e.g. Facebook and Twitter) to participate in our online study. All participants identified as heterosexual or bisexual adult females. Twelve participants were removed from the study prior to any statistical analyses due to incomplete data ( $n = 9$ ), dubious response patterns (i.e. responding with the same answer to every question;  $n = 2$ ), or repeated participation ( $n = 1$ ), which resulted in a final sample of  $N = 109$ . This sample size is comparable to previous male PSA studies that have found moderate to large effect sizes (e.g. Bohner et al., 1998). No remuneration was offered to study participants, but they were told that they would be contributing to a valuable research project in forensic psychology.

#### Study 2

Overall, 249 adult females (aged 18 years or over) were recruited to participate in our online study via Prolific (see Palan & Schitter, 2018) – a popular crowdsourcing platform that has received positive academic evaluation (e.g. Peer et al., 2017). Relevant pre-screening filters were set to ensure that all participants identified as heterosexual or bisexual adult females. Participants received £1.20 for taking part in this study, which was commensurate with their estimated completion time. No participants were excluded from the analyses.

### Study 3

In total, 199 adult females (aged 18 years or over) were recruited to participate in our online replication study, again via Prolific. The same pre-screening filters were set as previously, though an additional item was included that excluded participants who reported taking part in Study 2. Due to its increased length, participants received £2.50 for their participation. Data cleaning highlighted one participant as an outlier – they were removed from the study, resulting in a final sample of  $N = 198$ .

### Measures

Across all studies, we interpret internal consistency ( $\alpha$ ) scores in line with George and Mallery's (2003) criteria (see Table 1).

#### Propensity to engage in sexual aggression (PSA)

Five vignette-style scenarios, each depicting an adult female-perpetrated acquaintance rape of a male, were presented to participants (see Appendix). The first was adapted from a vignette created by Bohner et al. (1998) by reversing the gender of the perpetrator and the victim. The remaining four were devised by authors ZE and TG and based on real-life examples of female sexual aggression reported by Struckman-Johnson et al. (2003). All scenarios were written in a format designed to encourage participants to view the situation from the (female) perpetrator's perspective; for example:

Your partner gets home from work late one night, and says he wants to go straight to bed. Feeling unwanted, you try to seduce him and ask him for sex. He insists that he doesn't feel like it. An argument takes place, and you tell him he is not satisfying your sexual needs. He storms out of the room and goes to the bedroom. When in bed, you apologize and get on top of him. He reiterates that he doesn't want to have sex, but he is too tired to overpower you. While on top of him, you satisfy your needs by forcing him to penetrate you.

**Table 1.** Descriptive statistics for all study measures.

Measure	Study 1 ( $N = 109$ )			Study 2 ( $N = 249$ )			Study 3 ( $N = 198$ )		
	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i>	<i>SD</i>	$\alpha$
PSA <sup>a</sup>	1.25	0.49	.93	1.11	0.31	.87	1.10	0.27	.82
Behaviour <sup>a</sup>	1.20	0.45	.84	1.10	0.30	.83	1.09	0.23	.59
Enjoyment <sup>a</sup>	1.29	0.57	.83	1.13	0.36	.75	1.12	0.37	.81
RMA <sup>a</sup>	2.09	1.05	.81	1.78	0.90	.78	1.84	0.86	.75
MPI-R Sex	4.70	4.08	.77	3.08	3.75	.75	2.93	3.56	.73
MPI-R Violence	1.50	3.13	.86	0.76	1.89	.64	0.60	1.60	.59
MPI-R Other	2.31	2.79	.72	1.76	2.39	.57	1.75	2.59	.65
AQ							59.59	16.88	.92
BIS-11							61.59	10.55	.85
HM <sup>a</sup>							2.06	0.96	.70
BM <sup>a</sup>							1.64	0.92	.76
SP (excl. Mast)							11.06	3.37	.74
Mast							2.37	0.97	–

Note: PSA = propensity to engage in sexual aggression; RMA = rape myth acceptance; MPI-R = My Private Interests measure – Revised (where *Sex* = obsessed with sex, *Violence* = preference for violent or humiliation sex, and *Other* = other sexual interests); AQ = Aggression Questionnaire; BIS-11 = Barratt's Impulsivity Scale; HM = hostility towards men; BM = benevolence towards men; SP = sexual preoccupation; Mast = masturbation frequency.

<sup>a</sup>Composite (versus total) scores were calculated for these measures.

After reading each scenario, participants were asked to think about themselves as the female character and respond to two items, which were measured on a 5-point Likert-type scale. The first item asked participants 'How much enjoyment would you have got out of getting your own way in this situation?' (1 = *None at All*, 2 = *Not a Lot*, 3 = *Neutral*, 4 = *A Little*, 5 = *A Lot*), whilst the second asked 'Would you have behaved like this in this situation?' (1 = *Certainly Not*, 2 = *Probably Not*, 3 = *Neither Yes nor No*, 4 = *Probably Yes*, 5 = *Certainly Yes*). Given previous critiques (e.g. Bohner et al., 1998, 2006), we decided against asking participants about their sexual arousal to the depicted scenarios. As in previous research (e.g. O'Connor & Gannon, 2021; Palermo et al., 2019), participants are considered as endorsing PSA if they do not emphatically reject either item (i.e. they respond '2' or more). That is to say, we conceptualise non-zero responses as representing at least some endorsement of sexual aggression. So that our results were easier to interpret, responses to both behavioural propensity and enjoyment items were averaged for each scenario and the resulting composite score across all five scenarios was used as the overall measure of participants' PSA. Therefore, total composite scores for both items, as well as overall PSA, could range from 1 to 5. Previous studies using this methodology to assess male PSA have reported 'good' internal consistency (e.g. Bohner et al., 2006). In the current study, internal consistency was 'excellent'.

### **Rape myth acceptance (RMA)**

Six rape myth items applicable to female-perpetrated sexual aggression against adult males were taken from Struckman-Johnson and Struckman-Johnson's (1992) study of male rape myths among college men and women. These were presented in a scale format, where participants rated their level of agreement to each item on a 7-point Likert-type scale anchored by 1 = *Strongly Disagree* and 7 = *Strongly Agree*. An example item is 'It is impossible for a woman to rape a man.' Composite scores were calculated by averaging participants' responses across the six items for a total RMA score. Total scores could therefore range from one to seven. Two items were reverse-coded. Internal consistency for this scale was 'good'.

### **Aggression questionnaire (AQ)**

General levels of aggression were assessed using Buss and Perry's (1992) popular Aggression Questionnaire. This 29-item measure examines participants' levels of verbal and physical aggression, as well as their anger and hostility. An example item is 'I wonder why sometimes I feel so bitter about things.' Participants rate each item on a 6-point scale anchored by 1 = *Extremely Not Like Me* and 6 = *Extremely Like Me*. Sum scores represent a participant's overall self-reported level of aggressiveness. Total scores could range from 29 to 174. Previous research with both male and female community samples has indicated 'good' internal consistency (Buss & Perry, 1992). In our studies, internal consistency was 'excellent'.

### **Barratt impulsivity scale (BIS-11)**

Participants' level of impulsivity was assessed using the BIS-11 (Patton et al., 1995). This 30-item measure examines the key cognitive and behavioural facets of impulsiveness in the form of attentional focus, motor impulsiveness, and lack of forethought or planning. Items are rated on a 4-point Likert-type scale anchored by 1 = *Rarely/Never* and 4

= *Almost Always/Always*. An example item is 'I do things without thinking.' Sum scores were calculated to assess participants' overall level of impulsivity, with higher scores representing increased impulsiveness. Total scores could range from 30 to 120. Previous research has demonstrated that the BIS-11 exhibits 'good' internal consistency amongst students and incarcerated persons (Patton et al., 1995), which was replicated in our study.

### ***'My private interests' measure – revised (MPI-R)***

Participants' inappropriate sexual interests were assessed using an adapted version of the 'My Private Interests' measure (Williams, 2005), a 54-item scale designed to examine the sexual interests of incarcerated males who have sexually offended (Farren & Barnett, 2014). For the purpose of our studies, 11 items measuring sexual interest in children and three items that were not applicable to females (e.g. 'Secretly, I like to dress in women's clothes') were removed, resulting in a revised 40-item version of the measure termed the 'MPI-R'.

The MPI-R used in our studies contains 14 items that assess participants' preference for violent or humiliating sex (MPI-R Violence; e.g. 'I prefer sex when it is violent'), 11 items assessing obsession with sex (MPI-R Sex; e.g. 'I can't seem to get sex out of my mind'), and nine items measuring other non-standard sexual interests (MPI-R Other; e.g. 'I would like to have sex with an animal'). Six control items were also included that were not analysed. Participants responded 'True' (1) or 'False' (0) to each item, resulting in summed response scores for the three subscales and a total MPI-R score. Total scores for the MPI-R Violence, MPI-R Sex, and MPI-R Other subscales could therefore range from zero to 14, zero to 11, and zero to nine, respectively. 'Good' internal consistency has been reported across subscales for males convicted of sexual offences (Mathie, 2008). In our studies, internal consistencies ranged from 'acceptable' to 'good'.

### ***Negative attitudes towards men***

A shortened version of Glick and Fiske's (1996) Ambivalence Towards Men Inventory (AMI), termed the AMI-SV (Glick & Whitehead, 2010), assessed participants' negative attitudes towards men. This 12-item measure contains two distinct subscales, each comprising six items. The Hostility Towards Men (HM) subscale conceptualises men as dominant, arrogant, and overly competitive, whilst the Benevolence Towards Men (BM) subscale promotes the view of gender inequality through conceptualising men as 'providers' and women as passive recipients who should nurture their male partner. Example items from both scales are 'When men act to "help" women, they're often trying to prove they're better than women' (HM subscale) and 'Men are mainly useful to provide financial security to women' (BM subscale). Participants respond to items on both subscales using a 5-point Likert-type scale, anchored by 1 = *Strongly Disagree* and 5 = *Strongly Agree*. Composite scores were calculated for both subscales, with higher scores indicating increased negative attitudes. Total scores from both subscales could therefore range from one to five. The authors report 'acceptable' and 'good' internal consistency for the HM and BM subscales, respectively. In our study, both scales exhibited 'acceptable' internal consistency.

### ***Sexual preoccupation (SP)***

Five items that assessed female preoccupation with sex were developed for the purpose of this study. Participants responded to each item on a 5-point Likert-type scale, anchored

by 1 = *Strongly Disagree* and 5 = *Strongly Agree*. The items are 'I regularly have sexual thoughts/fantasies,' 'I have difficulty controlling my sexual urges,' 'Sexual satisfaction is important in my life,' 'My sexual thoughts and urges interfere with my daily life,' and 'I have a greater desire for sex than other women.' Total scores could range from five to 25. The internal consistency of this measure was 'acceptable'.

A standalone sixth SP item was included to examine Masturbation Frequency (MF). This item assessed actual behavioural engagement in self-serving sexual acts (compared to other SP items that examined individual perceptions of sexual preoccupation). The MF item asked participants 'How many times in an average month do you masturbate' and was presented alongside a 6-point Likert-type scale (1 = *Never*, 2 = *Less than Once a Week*, 3 = *1–3 Times a Week*, 4 = *4–6 Times a Week*, 5 = *Once a Day*, 6 = *More than Once a Day*). Total scores for the MF could range from one to six, with higher scores representing more frequent masturbation habits.

### **Procedure**

All studies were ethically approved by the relevant university research ethics committee (Refs: 201714899110714361 and 201715125576364799). Participants accessed the online studies, hosted on Qualtrics, via a private weblink. Initially, participants read an information sheet that warned them that, were they to participate in our study, they would be required to read graphic scenarios depicting forceful adult-on-adult sexual interactions. Informed consent was then gathered by an ethics consent form, which assured participants of their anonymity and explicated their right to withdraw at any time. Participants then completed each of the measures relevant to their studies. In Study 1, participants completed the PSA, RMA, and MRI-R measures. The order in which the RMA and PSA were presented varied randomly and was determined by Qualtrics: 79 participants first completed the RMA followed the PSA, whilst the remaining participants received the measures in the opposite order, before completing the MPI-R.<sup>1</sup> Based on Study 1 findings, in Study 2, participants completed, in order, the RMA, PSA, and MPI-R. In Study 3, participants completed the RMA, PSA, and MPI-R in the same order as in Study 2, followed by the AMI-SV, AQ, BIS-11, and SP/MF measures in a randomised order (again, determined by Qualtrics). At the end of the study, participants were presented with a written debrief that outlined the true nature of the study and provided them with the contact details for StopItNow UK & Ireland – a support service for individuals concerned about their own inappropriate sexual interests or behaviour.

### **Analytic strategy**

Analyses were conducted using SPSS v.24.0 and SAS 9.4 for Windows. Independent *t*-tests were conducted to compare self-reported rates of female PSA in our studies to male PSA levels reported by Bohner et al. (1998), with group (female versus male) acting as the between-participants factor. Cohen's *d* was calculated as a measure of effect size.

To examine the key factors that predicted PSA, a series of stepwise multiple regression models were constructed. As recommended by James et al. (2014), we adopted a stepwise approach based on the exploratory nature of our work, as it allowed us to assess in greater detail the contribution of multiple different variables (relative to a simultaneous

approach). Variables were retained in the model if the  $p$ -value was less than or equal to  $p = .20$  and discarded if they were greater than this.<sup>2</sup> The  $p$ -value of variables when added to the model at each step determined the order in which variables were added to the model, with the most significant variables being added first. Similarly, the order in which variables were discarded from the model at each step was also based on the  $p$ -value, with the least significant variables being discarded first. Variables were added and discarded from the model until the final model contained no variables with  $p$ -values greater than  $.20$ . Finally, unique model predictors were assessed as being significant where the  $p$ -value was less than  $.05$ . The data we collected across all our studies is publicly available on the Open Science Framework at the following link: <https://osf.io/94z5s/>.

## Study 1

### Results

Descriptive statistics for our propensity to engage in sexual aggression (PSA), rape myth acceptance (RMA), and inappropriate sexual interests (MPI-R) measures are displayed in Table 1.

#### Prevalence of female PSA

As in previous research (e.g. O'Connor & Gannon, 2021; Palermo et al., 2019), participants' PSA was assessed according to whether they emphatically rejected both behavioural and enjoyment items. Based on this approach, 34 participants (31.2% of the sample) self-reported at least some likelihood of behaving like the fictitious perpetrator in at least one of the five PSA scenarios, having responded '2' or more to at least one behavioural index item. Assessing individual behavioural scores showed that 2.8% of participants ( $n = 3$ ) had an average score of 3+ across the five items, 3.7% ( $n = 4$ ) had an average score of between 2 and 3, and 24.8% ( $n = 27$ ) had an average score of between 1 and 2. Moreover, 41 participants (37.6% of the sample) reported at least some likelihood that they would enjoy getting their way were they the fictitious perpetrator, having responded '2' or more to at least one enjoyment index item. Here, assessing individual enjoyment scores showed that 4.6% of participants ( $n = 5$ ) had an average score of 3+ across the five items, 5.5% ( $n = 6$ ) had an average score of between 2 and 3, and 27.5% of participants ( $n = 30$ ) had an average score of between 1 and 2. Calculating self-reported PSA (i.e. the average of participants' responses to both behavioural and enjoyment items) showed that 48 participants (44.0% of the sample) endorsed at least one behavioural or enjoyment item, having achieved an overall composite score of  $>1$  on our PSA scale, thus displaying some propensity towards male-directed sexual aggression. Table 2 shows the distribution of participants' scores for both behavioural and enjoyment items across all five PSA scenarios.

When compared with the community male participants ( $N = 113$ ) in Bohner et al.'s (1998) study of male PSA, the females in our study were less likely to report that they would behave like the perpetrator,  $t(199)_{Welch's} = 6.95$ ,  $p < .001$ ,  $d = 0.93$ , CI  $[-0.15, -0.01]$  ( $M_s$  1.20 versus 1.72, respectively). Similarly, the females in our study reported a lower likelihood of enjoying getting their own way, relative to Bohner et al.'s (1998) male participants,  $t(210)_{Welch's} = 7.98$ ,  $p < .001$ ,  $d = 1.07$ , CI  $[-0.17, -0.01]$  ( $M_s$  1.29 versus 1.99, respectively).

**Table 2.** Distribution of participants' scores on each subscale of the PSA across scenarios.

	Study 1 (N = 109)					Study 2 (N = 249)					Study 3 (N = 198)				
	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
Scenario 1															
Enjoyment	70.64	13.76	10.09	2.75	2.75	84.34	8.84	5.22	1.61	–	91.41	4.04	2.02	2.02	0.51
Behavioural propensity	86.24	7.34	3.67	2.75	–	92.37	5.22	1.20	1.20	–	93.94	5.56	0.51	–	–
Scenario 2															
Enjoyment	82.57	7.34	6.42	2.75	0.92	89.96	7.23	2.41	0.40	–	88.89	8.08	1.52	1.01	0.51
Behavioural propensity	82.57	11.01	4.59	1.83	–	86.35	10.44	2.81	0.40	–	86.36	10.10	1.52	2.02	–
Scenario 3															
Enjoyment	88.99	7.34	2.75	0.92	–	95.58	2.41	2.01	–	–	97.98	1.01	0.51	–	0.51
Behavioural propensity	91.74	6.42	0.92	0.92	–	96.79	2.01	0.40	0.40	0.40	99.49	0.51	–	–	–
Scenario 4															
Enjoyment	89.91	1.83	6.42	1.83	–	96.39	1.20	1.61	0.80	–	94.95	3.03	1.52	0.51	–
Behavioural propensity	88.07	9.17	0.92	1.83	–	96.79	2.41	0.40	0.40	–	96.97	2.53	0.51	–	–
Scenario 5															
Enjoyment	85.32	7.34	4.59	1.83	0.92	91.16	6.43	0.80	1.61	–	90.40	6.06	2.02	0.51	1.01
Behavioural propensity	86.24	7.34	3.67	2.75	–	91.16	6.83	2.01	–	–	89.90	8.08	0.51	1.52	–

Note: Percentages may not sum to 100% due to rounding.

### Predictors of female PSA

Overall, RMA was positively related to overall PSA,  $r = .25$ ,  $n = 109$ ,  $p = .009$  – a medium effect size. For participants who completed the RMA scale *before* the PSA measure, this relationship was moderate and significant,  $r = .34$ ,  $n = 79$ ,  $p = .002$ . For participants who completed the RMA scale *after* the PSA measure, the relationship was negligible and non-significant,  $r = .08$ ,  $n = 30$ ,  $p = .66$ . All three subscales of the MPI-R were positively related to PSA with medium-to-large effects sizes (MPI-R Sex:  $r = .43$ ,  $p < .001$ ; MPI-R Violence:  $r = .67$ ,  $p < .001$ ; and MPI-R Other:  $r = .40$ ,  $p < .001$ ). Put another way, greater sexual interest in these three domains was related to higher levels of self-reported PSA.

A multiple regression analysis was conducted to examine the predictors of PSA amongst participants (see Table 3). The distribution of overall PSA scores (the dependent variable in the regression analysis) was assessed for normality using distributional and cumulative distribution function plots, the Shapiro-Wilks test, and measures of kurtosis and skewness. Prior to analysis, overall PSA scores were transformed using a Box-Cox transformation (where  $\lambda = -5$ ). The distributional properties of scores were assessed post-transformation and showed improved kurtosis and skewness. The 'enter method' was used during model construction. Overall, RMA and two of the MPI-R subscales (MPI-R Violence and MPI-R Sex) were found to explain a significant proportion of variance in PSA for females,  $F(3,105) = 14.16$ ,  $p < .001$ ,  $R^2 = 0.29$ , adjusted  $R^2 = 0.27$ . All three variables (RMA, MPI-R Violence, and MPI-R Sex) significantly predicted PSA at the  $p < .05$  level.

### Discussion

The results of Study 1 contribute to the extant knowledge base on female sexual offending by suggesting that some community females do not emphatically reject a propensity to engage in male-directed sexual aggression. Whilst the prevalence was

**Table 3.** Predictors of SAP in females

Models & measure	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
Study 1 ( <i>N</i> = 109)				
MPI-R Violence	0.0075	0.0024	0.304	.002
RMA	0.0166	0.0064	0.226	.01
MPI-R Sex	0.0043	0.0018	0.230	.02
Study 2 ( <i>N</i> = 249)				
MPI-R Violence	0.0099	0.0022	0.296	<.001
RMA	0.0175	0.0039	0.250	<.001
MPI-R Sex	0.0023	0.0011	0.140	.04
Study 3 ( <i>N</i> = 198)				
MPI-R Violence	0.0041	0.003	0.105	.18
MPI-R Other	0.0041	0.002	0.171	.04
HM	0.0105	0.0046	0.163	.02
RMA	0.0094	0.0052	0.131	.07
MPI-R Sex	0.0018	0.0013	0.101	.19
All Studies ( <i>N</i> = 555)				
MPI-R Violence	0.0073	0.0015	0.234	<.001
RMA	0.0168	0.0027	0.234	<.001
MPI-R Sex	0.0028	0.0008	0.161	<.001
MPI-R Other	0.0022	0.0012	0.086	.07

Note: *B* and *SE B* reflect the Box-Cox transformations performed. *B* = Unstandardised beta; *SE B* = Standard error for the unstandardised beta;  $\beta$  = Standardised beta; MPI-R = My Private Interests measure – Revised (where *Sex* = obsessed with sex, *Violence* = preference for violent or humiliation sex, and *Other* = other sexual interests); RMA = rape myth acceptance; HM = hostility towards men.

significantly lower in our participants than has been documented in male PSA research (e.g. Bohner et al., 1998) – supporting pre-existing theory that men hold a greater propensity than women towards sexual aggression (see Malamuth, 1996) – self-reported rates for female PSA were noteworthy. Indeed, almost one-in-three participants in this study (31.2%) indicated some behavioural propensity towards PSA, whilst over one-in-three (37.6%) self-reported that they would feel some level of enjoyment were they to act on their urges (i.e. non-zero endorsements). Overall, nearly half of participants (44.0%) displayed *at least some* PSA.

Additionally, findings from Study 1 support three of our key hypotheses. First, they reinforce the hypothesis that RMA relating to men as victims leads to female PSA through ‘neutralizing in advance norms that oppose sexual violence’ (Bohner et al., 1998, p. 259). Second, the results show that, along with participants’ levels of RMA (relating to men as victims), inappropriate sexual interests – here, an obsession with sex and preference for violent sexual activities – play an important role in predicting PSA towards males. Finally, Study 1 findings suggest that both RMA and inappropriate sexual interests are important predictors of PSA towards males, with a preference for violent sexual activities demonstrating the strongest overall predictive ability.

Given the novelty of this research, it is possible that the sample recruited for Study 1 may have possessed unique psychological characteristics that meant they possessed inflated levels of both male victim/female perpetrator RMA and sexual aggression directed towards men. For example, participants in this study were not rewarded for taking part in our study, meaning we may have inadvertently and disproportionately recruited community females who were highly attracted to engage with information about forceful sexual interactions (and thus more likely to endorse PSA towards males). To assess the validity of our results, we therefore set out to replicate our key findings in Study 2, where we purposively doubled our initial sample of adult females using a broader participation pool that incentivised participation using financial remuneration.

## Study 2

### Results

Descriptive statistics for our propensity to engage in sexual aggression (PSA), rape myth acceptance (RMA), and inappropriate sexual interests (MPI-R) measures are displayed in Table 1.

#### *Prevalence of female PSA*

Based on the scoring method described earlier, 49 participants (19.7% of the sample) self-reported at least some likelihood of behaving like the fictitious perpetrator in at least one of the five PSA scenarios, having responded ‘2’ or more to at least one behavioural index item. Assessing individual behavioural scores showed that 1.2% of participants ( $n = 3$ ) had an average score of 3+ across the five items, 0.8% ( $n = 2$ ) had an average score of between 2 and 3, and 17.7% ( $n = 44$ ) had an average score of between 1 and 2. Moreover, 54 participants (21.7% of the sample) reported at least some likelihood that they would enjoy getting their way were they the fictitious perpetrator, having responded ‘2’ or more to at least one enjoyment index item. Here, assessing individual enjoyment scores

showed that 1.6% of participants ( $n = 4$ ) had an average score of 3+ across the five items, 2.0% ( $n = 5$ ) had an average score of between 2 and 3, and 18.1% of participants ( $n = 45$ ) had an average score of between 1 and 2. Calculating self-reported PSA showed that 67 participants (26.9% of the sample) endorsed at least one behavioural or enjoyment item, having achieved an overall composite score of  $>1$  on our PSA scale, thus displaying some propensity towards male-directed sexual aggression. Table 2 shows the distribution of participants' scores for both behavioural and enjoyment items across all five PSA scenarios.

A comparison with the community males in Bohner et al.'s (1998) study revealed that the female participants in our Study 2 were less likely to report that they would behave like the scenario perpetrator,  $t(134)_{Welch's} = 9.68, p < .001, d = 1.29, CI [0.49, 0.75]$  ( $M_s$  1.10 versus 1.72, respectively). Similarly, our participants reported a lower likelihood of enjoying getting their own way relative to Bohner et al.'s (1998) male participants,  $t(137)_{Welch's} = 11.88, p < .001, d = 1.58, CI [0.72, 1.01]$  ( $M_s$  1.13 versus 1.99, respectively).

### Predictors of female PSA

RMA was positively related to overall PSA,  $r = .32, n = 249, p = <.001$  – a medium effect size. All three subscales of the MPI-R were positively related to PSA, again with medium effects sizes (MPI-R Sex:  $r = .31, p < .001$ ; MPI-R Violence:  $r = .43, p < .001$ ; MPI-R Other:  $r = .30, p < .001$ ). Thus, higher levels of RMA and inappropriate sexual interests were related to higher levels of PSA.

The multiple regression analysis conducted for Study 1 was replicated to examine PSA predictors for females (see Table 3). As earlier, a Box-Cox transformation was applied to improve kurtosis and skewness (where  $\lambda = -5$ ). Again, RMA and two of the MPI-R subscales (MPI-R Violence and MPI-R Sex) were found to explain a significant proportion of variance in PSA for females,  $F(3,245) = 24.7, p < .001, R^2 = 0.23, \text{adjusted } R^2 = 0.22$ . These variables all significantly predicted female PSA at the  $p < .05$  level, replicating our Study 1 findings.

### Discussion

Study 2 appears to support our suggestion that the self-selecting participants from Study 1 – who were provided with no participation incentives – were reporting disproportionately higher levels of PSA towards males (compared to participants in our current sample). In Study 2, when participants were paid to engage in the research, the prevalence of PSA towards males dropped from 44.0% to 26.9%. That is to say, notably fewer participants self-reported a non-zero interest in perpetrating male-directed sexual aggression. Similarly, average behavioural and enjoyment scores also fell from 31.2% to 19.7% and 37.6% to 21.7%, respectively. However, compared to Study 1, there were no key differences in other outcomes for Study 2, which provides cross-validation of the key predictors of PSA towards males established earlier (i.e. inappropriate sexual interests and male victim/female perpetrator RMA). Compared to Study 1, though, a preference for violent sexual activities was only marginally more predictive of PSA towards males in this study than RMA.

Given that our findings were replicated across two distinct samples of community females, we speculated as to whether a female's preference for violent sexual activities

might simply reflect higher overall levels of generalised aggression – an established predictor of sexual aggression amongst community males (see Hersh & Gray-Little, 1998). We also considered whether broader forms of ambivalence towards men – such as participants' hostile and benevolent sexist attitudes – might represent important predictors of PSA towards males in community females, along with RMA. Therefore, in Study 3, we also administer to participants established measures of aggression and negative sexist attitudes.

Given the repeated findings across Studies 1 and 2 that an obsession with sex represented an important predictor of female PSA towards males, we decided to include two other more detailed assessments of this obsession in Study 3: one measuring female's self-reported preoccupation with sex both generally and relative to other females, and another examining self-reported frequency of masturbation. This was based on the established finding in the male sexual aggression literature that both factors represent distinct forms of sexual preoccupation; that is, the former examines individual perceptions of sexual preoccupation, whilst the latter assesses actual behavioural engagement in self-serving sexual acts (see Kafka, 1997; Kafka & Hennen, 2003; Malamuth et al., 1995). However, we analysed both items collectively, as together they provide a reliable metric for sexual preoccupation.

Based on prior conjecture that individual levels of impulsivity constitute one of the most reliable dynamic intrapersonal risk factors associated with sexual aggression amongst community males (Mouilso et al., 2013; see also Knight & Sims-Knight, 2003; Thompson et al., 2015), we also included in Study 3 a measure of general impulsiveness. We speculate that, even if community females displayed high levels of sexual preoccupation, then impulsivity may represent one important pathway regarding its expression.

## Study 3

### Results

Descriptive statistics for our propensity to engage in sexual aggression (PSA), rape myth acceptance (RMA), inappropriate sexual interests (MPI-R), impulsivity (BIS-11), two negative attitudes towards men (i.e. the Hostility Towards Men [HM] and Benevolence Towards Men [BM] subscales), and sexual preoccupation (SP and Masturbation Frequency [MF]) measures are presented in Table 1.

### *Prevalence of female PSA*

Based on the scoring method described earlier, 46 participants (23.2% of the sample) self-reported at least some likelihood of behaving like the fictitious perpetrator in at least one of the five PSA scenarios, having responded '2' or more to at least one behavioural index item. Assessing individual behavioural scores showed that 2.0% of participants ( $n = 4$ ) had an average score of between 2 and 3 across the five items, and 21.2% ( $n = 42$ ) had an average score of between 1 and 2. Unlike Studies 1 and 2, no participants had an average score of 3+. Moreover, 43 participants (21.7% of the sample) reported at least some likelihood that they would enjoy getting their way were they the fictitious perpetrator, having responded '2' or more to at least one enjoyment index item. Here, assessing individual enjoyment scores showed that 1.0% of participants ( $n = 2$ ) had an average score of 3+ across the five items, 2.0% ( $n = 4$ ) had an average score of between 2 and 3, and

18.7% of participants ( $n = 37$ ) had an average score of between 1 and 2. Calculating self-reported PSA showed that 56 participants (28.3% of the sample) endorsed at least one behavioural or enjoyment item, having achieved an overall composite score of  $>1$  on our PSA scale, thus displaying some propensity towards male-directed sexual aggression. Table 2 shows the distribution of participants' scores for both behavioural and enjoyment items across all five PSA scenarios.

In line with Studies 1 and 2, comparisons were made between the community females in our sample and the community males in Bohner et al.'s (1998) study. This revealed that our participants were less likely than their male counterparts to report that they would behave like the perpetrator in the vignette,  $t(128)_{Welch's} = 9.95$ ,  $p < .001$ ,  $d = 1.43$ , CI [0.51, 0.76] ( $M_s$  1.09 versus 1.72, respectively). Similarly, the females in our study reported a lower likelihood of enjoying getting their own way, relative to Bohner et al.'s (1998) male participants,  $t(145)_{Welch's} = 11.83$ ,  $p < .001$ ,  $d = 1.58$ , CI [0.72, 1.02] ( $M_s$  1.12 versus 1.99, respectively), replicating findings from Studies 1 and 2.

### Predictors of female PSA

As previously, RMA was positively related to overall PSA,  $r = .21$ ,  $n = 198$ ,  $p = .003$  – a small effect size. All three subscales of the MPI-R, along with the AQ, BM, HM, and SP, were positively related to PSA with small effects sizes (MPI-R Sex:  $r = .21$ ,  $p = .003$ ; MPI-R Violence:  $r = .19$ ,  $p = .007$ ; MPI-R Other:  $r = .22$ ,  $p = .002$ ; AQ:  $r = .18$ ,  $p = .01$ ; BM:  $r = .20$ ,  $p = .004$ ; HM:  $r = .24$ ,  $p = .09$ ; SP:  $r = .15$ ,  $p = .04$ ). Thus, higher levels of inappropriate sexual interests, aggression, benevolence towards men, and sexual preoccupations were related to higher levels of PSA. Notably, all three of the MPI-R subscales were also positively related to SP with medium-to-large effect sizes (MPI-R Sex:  $r = .68$ ,  $p < .001$ ; MPI-R Violence:  $r = .34$ ,  $p < .001$ ; MPI-R Other:  $r = .53$ ,  $p < .001$ ). Thus, we excluded SP from the final model, but retained the item regarding masturbation frequency (MF).

A multiple regression analysis was conducted as previously to examine PSA predictors for females (see Table 3) and a Box–Cox transformation applied to improve kurtosis and skewness (where  $\lambda = -5$ ). Using the 'enter method,' RMA, MPI-R subscales, and HM were found to explain a significant proportion of variance in PSA for females,  $F(5, 192) = 7.19$ ,  $p < .001$ ,  $R^2 = 0.16$ , adjusted  $R^2 = 0.14$ . However, unlike previously, only the MPI-R Other and HM measures significantly predicted PSA at the  $p < .05$  level. RMA was approaching significance ( $p = .07$ ).

Given that all three studies examined RMA and the MPI-R subscales as predictors of PSA, we decided after analysing Study 3 results to combine datasets and conduct a final multiple regression analysis to examine PSA predictors for females ( $N_{Overall} = 555$ ; see Table 3). Box–Cox transformations were again applied (where  $\lambda = -5$ ). Using the 'enter method,' RMA and all three MPI-R subscales were found to explain a significant proportion of variance in PSA for females,  $F(4, 551) = 40.8$ ,  $p < .001$ ,  $R^2 = 0.23$ , adjusted  $R^2 = 0.22$ . With the exception of the MPI-R Other subscale, all variables significantly predicted PSA at the  $p < .05$  level.

### Discussion

Similar to Study 2, Study 3 findings suggest that approximately one-in-five community females self-report a behavioural propensity towards PSA (19.7% versus 23.2%), as well

as some level of enjoyment were they to act on their urges (21.7% across both studies), having endorsed at least one behavioural or enjoyment item on the PSA measure. Overall prevalence of PSA – determined by participants' non-zero endorsement to PSA items – was also similar (26.9% versus 28.3%) between both studies, suggesting that approximately a quarter of community females exhibit some form of propensity to engage in male-directed sexual aggression (albeit to varying degrees).

Study 3 also highlights that, when other psychological factors are included in a predictive model of female PSA, RMA and inappropriate sexual interests – specifically, a preoccupation with sex and a preference for violent sexual activities – hold less prognostic value. Indeed, when additional variables were entered into the regression equation alongside RMA and our inappropriate sexual interests measures, hostility towards men also contributed to the prediction of female PSA towards males. However, the variance explained as a whole was relatively small (14%) compared to the regression models in Studies 1 and 2 (27% and 22%, respectively), suggesting that these additional variables contribute little overall to the model's predictive value.

Our findings also show that both 'other' inappropriate sexual interests and hostility towards men constitute strong predictors. Whilst it is unclear why 'other' inappropriate interests possessed such a strong prognostic value amongst our sample, hostility makes sense as a predictor of female PSA – if a female is hostile towards men, it stands to reason that they may also possess inappropriate attitudes regarding their male-directed sexual behaviour. Certainly, in Study 3 we found hostility towards men to be moderately correlated with male RMA in our sample. This suggests that community females' sexist attitudes, both in the form of RMA and hostility towards men, are important predictors of their male-directed sexual aggression.

## General discussion

The results of the three independent empirical studies reported in this paper highlight that a noteworthy proportion of adult community females do not emphatically reject an interest in perpetrating male-directed sexual aggression, having provided at least one non-zero response on our measure of PSA. Whilst rates appear lower than those reported by men towards women (e.g. Bohner et al., 1998), the prevalence of PSA for females (determined by participants' non-zero endorsement to PSA items) was still significant amongst our three samples, ranging between 26.9% and 44.0%. Although no directly comparable data are available, these findings align with those from Perry et al. (1998), who reported that over 25% of the female college students in their sample did not emphatically reject behavioural items linked to a likelihood to engage in sexually aggressive behaviour, as well as more recent empirical research that suggests that community females display at least some propensity towards, or history of, sexual aggression (e.g. Bouffard et al., 2016; Schatzel-Murphy et al., 2009; Schuster & Krahe, 2019; Struckman-Johnson et al., 2020). Our estimates of prevalence also support recent reports suggesting that community males are being sexually victimised by community females at rates higher than previously recognised (e.g. CDC, 2011; Stemple et al., 2017) and highlight that female sexual offending should be the subject of more academic attention.

Beyond prevalence, our findings elucidate some possible reasons why community females exhibit tendencies towards male-directed sexual aggression. A particularly

prominent candidate that we assessed was male victim/female perpetrator RMA. Across all three of our studies, we found that RMA was positively correlated with PSA, despite low levels of endorsement overall. In Study 1, our findings confirm Bohner et al.'s (1998) supposition that this relationship appears as a result of RMA 'neutralizing in advance norms that oppose sexual violence' (p. 259). Bohner and colleagues had previously argued in their research with community males that a correlation between RMA and PSA only exists when RMA is presented first to participants, because it has been made salient and, in turn, mimics the accessibility of such constructs in real-world acquaintance rape situations. Applied to female-perpetrated offending, this would translate to RMA about men being triggered in females when a man is declining sex. Across our four regression analyses, RMA emerged as a strong significant predictor regularly (i.e. in Studies 1 and 2, and in our combined analysis). Thus, across independent studies, increased male victim/female perpetrator RMA was consistently associated with higher rates of female PSA towards men. This is an important finding, as it provides evidence that male victim/female perpetrator RMA is linked to, and potentially plays an etiological role in, female PSA towards men.

Our findings regarding male RMA align well with those across the broader female sexual aggression literature. For example, as in our study, several researchers in both the US and UK have also demonstrated that male rape myths receive very low levels of endorsement across female community samples (e.g. Davies et al., 2012; Spruin & Reilly, 2018; Struckman-Johnson & Struckman-Johnson, 1992; Walfield, 2021). Similarly, in their recent MTurk study into the risk factors associated with community females' history of post-refusal sexual persistence (PRSP) use, Struckman-Johnson et al. (2020) discovered that male RMA was one of the strongest predictors of participants' past offending. Specifically, the authors found that participants who self-reported past PRSP endorsed more male rape myths on Struckman-Johnson and Struckman-Johnson's (1992) measure (also used in our study) than their non-offending counterparts, and that their scores explained a significant proportion of the variance in past PRSP use. Again, this was despite participants generally rejecting RMA items.

Our findings across all three studies suggest that RMA was not the only significant predictor of female PSA towards men – both a preference for violent sexual activities and an obsession with sex were also found to be consistently positively correlated with PSA. Again, this was despite low levels of endorsement across our MPI measures overall. Across our four regression models, both variables also emerged as significant predictors regularly (i.e. in Studies 1 and 2, and in our combined analysis). Here, a preference for violent sexual activities appeared to be a stronger predictor of female PSA towards males than participants' self-reported obsession with sex and held a similar – and sometimes stronger – prognostic value to participants' levels of RMA.

Again, parallels can be drawn between these findings and those published by Struckman-Johnson et al. (2020), who showed that their participants' self-reported rates of sexual sensation seeking – conceptualised by the authors as a tendency to look for novel sexual experiences – were strong predictors of their past PRSP use. Whilst sexual sensation seeking and an obsession for sex are inherently different constructs, both centre around an unhealthy and inappropriate preoccupation with sexual activity. Therefore, it is unsurprising that high MPI-R Sex scores were associated with participants' PSA scores in our study. To the best of our knowledge, no empirical research has been

conducted that has examined the link between community females' preference for violent sexual activities and PSA; however, given the well-established link between sexual interests – particularly, those involving sexualised violence – and actual displays of sexual aggression (see Mann et al., 2010), the fact that our participants' MPI-R Violence scores emerged as a predictor of their PSA is an important finding with potentially significant clinical implications.

### **Limitations**

The present set of empirical studies are the first to assess in-depth male-directed PSA across a broad sample of community females using the established vignette paradigm. To this end, they combat the limitations of previous research into community females' PSA, which has been constrained by sample demographics (e.g. college students or MTurk workers only; Perry et al., 1998; Schatzel-Murphy et al., 2009; Struckman-Johnson et al., 2020) or methodological issues (e.g. not examining participants' enjoyment to engage in illegal sexual activity as part of the assessment of PSA; Perry et al., 1998). Our findings offer an important contribution to academic knowledge regarding the prevalence of, and possible factors linked to, female propensity towards male-directed sexual aggression and should function as a catalyst for the development of more robust theory and practice in the field. However, we acknowledge that our studies do possess some limitations, which readers must bear in mind when considering our results.

First, the variables examined in this study do not comprise an exhaustive list; therefore, we do not claim to have examined the full spectrum of possible factors predictive of male-directed PSA amongst females. Whilst we believe that we have assessed some of the most potent predictors, we would encourage future researchers to investigate a broader array of factors, including those notably absent in our studies (e.g. psychosocial, ecological, and historical factors; see Cortoni, 2018). This would allow for a more comprehensive assessment of the aetiology of female PSA and, in turn, the development of more robust harm prevention initiatives for community females at risk of engaging in illicit sexual behaviours.

Second, it is well-established there are gender differences between men and women who engage in sexual aggression (e.g. Schuster & Krahe, 2019). These include significant variations in the psychological characteristics of both groups, as well as the correlates of their sexual offending behaviours. Therefore, despite only assessing in our studies those risk factors that we had a justifiable theoretical basis for examining (e.g. because they had been demonstrated as strong predictors of sexual aggression amongst both incarcerated males and females), we appreciate that our findings are constrained by our research design, which was inspired by previous empirical work into male sexual aggression. To this end, we encourage readers to consider our results as 'tentative' until they have been sufficiently validated across broader samples.

Third, despite the established benefits of the vignette paradigm (see Bohner et al., 1998), it is impossible for written scenarios to fully capture the nuances of all sexually aggressive acts, and for them to fully explore the severity of sexual aggression either experienced or engaged in by individuals (see Bouffard et al., 2016). To this end, we recommend that additional studies are conducted using alternate PSA measurement strategies. This would not only have the benefit of allowing us to examine the

generalisability of our findings regarding the prevalence and predictors of female PSA, but would also let us assess the external validity of our results across different PSA measures.

In general, research assessing the propensity of non-incarcerated persons to engage in sexual aggression has additional setbacks that also afflict our studies. For example, whilst participants can speculate how they would act in a given scenario, they can never be certain. Subsequently, vignette studies are typically constrained by their low ecological validity. This is offset somewhat in our studies by the fact that our five vignettes derived either from established vignettes that have been used regularly in psychology (i.e. Bohner et al.'s [1998] scenario) or were created based on real-life examples of female-perpetrated acts of sexual aggression, as reported by Struckman-Johnson et al. (2003). Another issue is that rates of endorsement on measures of PSA are often very low across community samples, likely as a result of the sensitive and potentially stigmatising topics they examine. This limitation can also be applied to several of our other measures. The distribution of scores on our PSA measure, where most participants emphatically rejected behavioural and enjoyment items across each of our five scenarios, clearly reflects this point (see Table 2). However, given the positive evaluations it has received (e.g. Alleyne et al., 2014; Gannon & O'Connor, 2011; O'Connor & Gannon, 2021), we would encourage future researchers to continue adopting the well-established scenario-based PSA paradigm until such a time when a more viable alternative measure of PSA is developed. Finally, there is often no indication that propensity measures help us to identify or predict those individuals who will go on to actually engage in sexual aggression. Therefore, we advise researchers and practitioners not to make any clinically-relevant decisions based on the results of propensity measures, until such a time when academic understanding in this area has advanced.

Given these limitations, it is difficult to use findings obtained from adult community females to fully assess the characteristics or psychological profiles of females who have engaged in sexually aggressive behaviours. This does not mean, however, that empirical academic research does not provide us with a reasonable guide. For example, given that participants are likely to under-report their levels of PSA and RMA, it would appear – at least based on the present set of studies – that a proportion of adult community females do hold male-directed rape myths and adversarial sexist attitudes towards men, as well as inappropriate sexual interests that facilitate sexually aggressive behaviours. Therefore, to alleviate the methodological limitations of propensity research outlined above, we recommend that future efforts to examine female PSA should endeavour to provide longitudinal evidence indicating that PSA is predictive of actual sexual harm.

## **Conclusion**

Across three novel empirical studies, we show that a proportion of adult community females appear to (a) self-report a propensity to engage in sexual aggression against males (based on their non-zero endorsement of select items on our PSA measure), and (b) endorse inappropriate sexual interests, hostile sexist attitudes, and male rape myths that appear to facilitate sexual aggression. These results suggest that professionals should consider developing preventative measures that educate community

females about prevalent rape myths and the normalisation of violent (often illicit) sexual activities, as well as encourage them towards more positive attitudes towards men. However, our regression models did not fully explain the variability in participants' responses to our PSA measures, thus suggesting that other psychological variables not assessed in our studies may help to explain community females' propensity towards sexually aggressive behaviours. To this end, we encourage researchers to extend our findings by examining other potential predictors of female PSA towards men that have shown promise in other academic and clinical work with perpetrators of sexual aggression.

## Notes

1. Due to a technical fault with the survey hosting site, randomisation of presentation order was not equal. However, given that our replication studies generated similar results, we are confident that our findings were not negatively affected by this issue.
2. We used this less conservative cut-off (versus the typical  $p < .05$ ) for initial model building due to the novelty of our research studies and to ensure that no potential predictive factors were overlooked.

## Open Scholarship



This article has earned the [Center for Open Science](#) badge for Open Data. The data are openly accessible at <https://osf.io/94z5s/>.

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## Data availability statement

The data used in our studies are publicly available on the Open Science Framework at the following link: <https://osf.io/94z5s/>.

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## Appendix. The five acquaintance rape scenarios comprising our propensity to engage in sexual aggression (PSA) measure

1. At a party, you get acquainted with a good-looking, interesting man. The two of you talk, dance and flirt with each other. Later, you take him home in your car, and he invites you into his apartment. You both sit down on the floor, and your new acquaintance starts kissing and caressing you. You willingly comply, and now you want more. When you start trying to take off his clothes in order to sleep with him, he suddenly pushes you away and says that he'd rather stop now. His resistance incites you even more, and you press the man down to the floor, restrain him and force him to penetrate you.
2. You have invited your classmate to your bedroom so that he can help you with a piece of work. You get on well, and you find him quite attractive. The conversation turns to relationship history, and he reveals to you that he has no sexual experience. You move closer to him and ask if he wants to have sex with you. He moves away and says he isn't ready, but you tell him it will be okay. You reach for his belt, unzip his jeans and start to rub his penis. He is clearly uncomfortable and tells you to stop. You tell him to let it happen and proceed to perform oral sex on him.
3. In a nightclub, you start dancing with an attractive guy. He seems to like you, and after a while you are making out on the dance floor. He already seems quite intoxicated and continues to drink throughout the night. Eventually, he says he wants to go home and is becoming less responsive. You take him outside and both get in a taxi back to your place. Once you get to yours you assist him to the bedroom. When he is passed out on the bed, your sexual desires take over and you remove his trousers to attempt to get him aroused. He wakes up and repeatedly says no, but you get on top of him and force him to penetrate you.
4. You're at a party when your ex-boyfriend shows up. He broke up with you and quickly started dating another girl. Both of you have a good night and end up alone in the living room together. You tell him that you're upset about the break-up and that you want to get back with him. You lean in to kiss him, but he tells you he is happier in his new relationship and has no interest in you anymore. This makes you angry, so you pin him down on the sofa and grab his penis. He doesn't want to hurt you but is pleading with you to stop. Ignoring his pleas, you force him to have sex with you.
5. Your partner gets home from work late one night, and says he wants to go straight to bed. Feeling unwanted, you try to seduce him and ask him for sex. He insists that he doesn't feel like it. An argument takes place, and you tell him he is not satisfying your sexual needs. He storms out of the room and goes to the bedroom. When in bed, you apologize and get on top of him. He reiterates that he doesn't want to have sex, but he is too tired to overpower you. While on top of him, you satisfy your needs by forcing him to penetrate you.