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Prevalence and psychological risk factors: a structural equation model of voyeurism engagement in men

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ABSTRACT

Voyeurism has been, and continues to be, a growing problem worldwide, particularly with the rise of technology. Yet, unlike many other sexual offences, the characteristics and risk factors associated with voyeurism remain underexplored. Using a sample of UK men ($N = 492$), Study 1 examined sexual arousal, proclivity, and engagement in voyeurism in the general population. Results indicated that 32.30% reported engaging in voyeurism, supporting the suitability of the sample for further investigation. Study 2 sampled UK men ($N = 513$) and categorised participants into three groups: (1) no desire or engagement, (2) desire without engagement, and (3) engagement in voyeurism. Groups differed across several psychological measures. A structural equation model demonstrated that sexual interest in voyeurism strongly predicted engagement, with sexual compulsivity and socio-relational factors (loneliness, self-efficacy in romantic relationships, and resilient coping) also playing important roles. Findings are discussed in relation to the aetiology of sexual offending and implications for practice.

PRACTICE IMPACT STATEMENT

Findings suggest that sexual interest in voyeurism may be a key factor in engagement, with sexual compulsivity and socio-relational variables (e.g. loneliness, relationship self-efficacy and coping) also playing a role. Practitioners may wish to consider these factors in assessment and intervention, while recognising that further research is needed to confirm their clinical utility.

Clinical features, frequency and prevalence of voyeurism defined

Voyeurism has long been normalised and romanticised in the media. Take, for example, films such as The Invisible Kid (1988) and Psycho (1960), TV series Stranger Things (2016), and music including Blink 182s "Voyeur" (1997), Busted's "What I go to school for" (2002), and Death Cab for Cutie's "I will possess your heart" (2008). Yet, engagement in voyeuristic

activities is a form of sexual harm and, in many countries, it is legally declared a sexual offence (Duff, 2018).

Voyeurism is broadly defined as non-consensual viewing of others (who are *unsuspecting*) whilst they are engaging in private activities for sexual purposes (Duff, 2018). Voyeurism comprises many private activities, including, but not limited to, watching someone naked, undressing, or engaging in sexual activity, which *can* be but is not always facilitated by technology. In recent years, it also includes upskirting, which is defined as taking photos/videos up someone's skirt or down their blouse. Voyeurism is a paraphilia under the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR; APA, 2022). It is also a paraphilic disorder, termed voyeuristic disorder, if individuals engage in this behaviour and/or voyeuristic urges and fantasies cause distress or an inability to function (DSM-5-TR; APA, 2022). However, the definition of voyeurism differs when considering the legal definitions across various jurisdictions. For example, in the UK and some US states, an individual can be convicted of voyeurism if the victim is suspecting. Across other jurisdictions (e.g. California), voyeurism is considered an invasion of privacy offence and not a sexual offence (see Lister & Gannon, 2024, for examples of non-sexually motivated voyeurism). For the purposes of this study, the definition of voyeurism in the DSM-5-TR (i.e. as a paraphilia), where a victim must be unsuspecting, will be used.

Voyeurism can be facilitated through the use of technology, such as non-consensual filming, hacking computers, or installing cameras. As such, with technology-use rising and devices getting smaller, less detectable, and more easily accessible, it is likely that the rates of technology-facilitated sexual violence, and subsequently voyeurism, are also increasing (Fisico & Harkins, 2021). This is demonstrated, in part, by voyeurism having been declared an epidemic in Korea (Teshome, 2019). Thus, it is imperative to understand voyeurism so that evidence-based preventative and rehabilitative strategies can be implemented.

There have been few attempts to estimate interest in voyeurism and paraphilic behaviours more generally, in the general population to date. The Swedish National Survey of Sexuality and Health (Långström & Hanson, 2006; Långström & Seto, 2006; Långström & Zucker, 2005) estimated the prevalence of paraphilic disorders using a representative sample of Sweden ($n = 2450$). This suggested that the prevalence of paraphilic behaviours was either statistically unusual, affecting less than 2.3% of the population, or atypical, affecting less than 15.9% of the population. Långström and Seto (2006) found the lifetime prevalence of voyeurism among men to be estimated at 11.5%. However, these rates differ widely within non-population-based samples. Dawson et al. (2016), for example, found that 52% of men indicated an interest in voyeurism utilising a mixed sample of students and individuals from the general population in Canada ($n = 1015$). In addition, Rye and Meaney (2007) sampled students at a Canadian University ($n = 318$) and found that 79% of men and women stated they would engage with voyeurism if they were certain they would not be caught.

There have also been significant associations found between voyeurism and other paraphilias, most often exhibitionism (Långström & Seto, 2006; Price et al., 2002; Richters et al., 2008), such that they are often examined together (Duff, 2018; Wood, 2019). However, they have also been found to be significantly different (Hopkins et al., 2016), and to date, professionals who have separated these have tended to focus solely on exhibitionism (e.g. Grant, 2005; Swindell et al., 2011). This has resulted in a serious lack of

research on the topic of voyeurism that Mann et al. previously described as "dangerous" (2008, p. 326). Additionally, voyeurism has consistently been shown to be more common than other types of paraphilic behaviour (Bártová et al., 2021; Joyal & Carpentier, 2017; Långström & Seto, 2006) and rarely occurs as a single incident, with an average individual engaging in this behaviour over five times (Lister & Gannon, 2024).

Pathways and correlates of voyeuristic behaviour

Despite its frequency, there is a dearth of literature surrounding the psychological profiles, characteristics and risk factors associated with voyeurism. To date, the only model focusing on voyeurism is the Descriptive Model of Voyeuristic Behaviour (DMV; Lister & Gannon, 2024), which highlights the affective, behavioural, cognitive and contextual factors related to engagement in voyeurism. This model identified several potential vulnerability and risk factors associated with voyeurism. It also identified three key pathways: "Sexual Gratification", "Maladaptive Connection Seeking" and "Access to Inappropriate Person(s)". These pathways will be discussed, along with factors that may be associated with them.

Sexual gratification

According to Lister and Gannon (2024), the Sexual Gratification pathway characterised those individuals whose voyeurism engagement was primarily rooted in sexual satisfaction resulting from voyeuristic sexual interest or general hypersexuality. Research in the 1990s hypothesised that voyeurism (and paraphilic behaviours more generally) is rooted in sexual compulsivity (Abouesh & Clayton, 1999; Kafka, 1994), and this is highlighted in case studies (Duff, 2018). In addition, Thomas et al. (2021) recently found that sexual compulsivity mediates the relationship between interest and engagement in voyeurism. This is, therefore, perhaps the most notable characteristic associated with voyeurism in the literature.

In a similar vein, the Motivation-Facilitation Model of Sexual Offending (MFM; Seto, 2008, 2019) posits that individuals' motivations to sexually offend are primarily rooted in paraphilia, high sex drive, and intense mating effort. Furthermore, Seto states that if an opportunity arises, situational factors and state (e.g. intoxication) and trait (e.g. antisocial personality) factors facilitate offence behaviours. Seto (2019) stated that this may apply to voyeuristic offences but that this is difficult to determine owing to a dearth of literature. Whilst this model has not been empirically validated, an individual having a high sex drive *may* motivate an individual to engage in voyeurism. Similarly, individuals engaging in voyeurism may present with a high frequency of sexual fantasising or sexual fantasy endorsement, given that this is highlighted in the DSM-5-TV (APA, 2022) and that deviant sexual fantasising is a key risk factor for sexual reoffending generally (Mann et al., 2010).

In the Sexual Gratification pathway, Lister and Gannon (2024) highlight that these individuals were most likely to be "disorganised planners" (p. 337). Disorganised planners, as described in the model, are those individuals whose voyeurism was not extensively planned; individuals were typically driven by sexual arousal and excitement and engaged with voyeurism somewhat impulsively. Whilst not investigated for voyeurism

specifically, impulsivity is a risk factor among individuals who have sexually offended more broadly (de Vries Robbé et al., 2015; Steene et al., 2023) and thus may be applicable.

Maladaptive connection seeking

The Maladaptive Connection Seeking pathway was characterised by individuals whose voyeurism engagement was a means to connect with others (Lister & Gannon, 2024). Typically, when these individuals felt isolated, they sought opportunities to engage with voyeurism through a variety of means, e.g. looking through windows or relationships with adolescents. This possibly indicates that there may be a relationship between voyeurism and factors such as loneliness, maladaptive coping and difficulties with relationships.

Using a small sample of imprisoned men, Wood (2019) used interpretative phenomenological analysis to investigate voyeurism, finding three motivations for engagement: need for intimacy, escapism and habit. Such motivations could indicate difficulties with coping and/or difficulties making or sustaining relationships (both romantically and otherwise), as well as loneliness as a factor in voyeurism engagement. More broadly, de Vries Robbé et al. (2015) identified dysfunctional coping and difficulties with romantic relationships as key risk factors for sexual reoffending. In addition, Babchishin et al. (2015) found that individuals who had engaged in mixed sexual offences (as may be the case with voyeurism) demonstrated higher levels of loneliness compared to individuals who had sexually offended against children only. Furthermore, loneliness and boredom have been found to be important predictors of internet pornography use (Yoder et al., 2005), and intimacy deficits and emotional loneliness were found to be linked with online sexual offending, as well as difficulties coping with negative emotions (Middleton et al., 2006). Given that voyeurism can be conducted online, it is plausible that these factors are also important for voyeurism specifically.

In addition, low self-esteem has been linked with social competency difficulties such as loneliness and difficulties developing intimate relationships (Seidman et al., 1994). The relationship between self-esteem and sexual offending is well-documented (e.g. Merdian et al., 2020; Shine et al., 2002). For example, Steene et al. (2023) highlight that individuals who have offended against children typically report low self-esteem and feelings of worthlessness. Furthermore, Babchishin et al. (2015) found that individuals who engaged in contact offences against children had lower self-esteem than those who used child sexual exploitation materials. Merdian et al. (2020) propose that feelings of low self-esteem typically result from rejection in childhood. In addition, men who have experienced child sexual abuse tend to report lower levels of self-esteem and have an increased risk of engaging in offence behaviours as adolescents (Gauthier-Duchesne et al., 2022). Whilst experiencing adverse childhood experiences (ACEs) does not increase the risk of reoffending, experiences of ACEs are much more prevalent among individuals who have sexually offended compared to the general population (Khan et al., 2021). Similarly, Babchishin et al. (2011) demonstrate that individuals who have sexually offended report higher rates of experiencing sexual abuse themselves than the general population. As a result, ACEs and low self-esteem may also be important factors related to voyeurism.

External locus of control is also a factor which has been linked with sexual offending (see Huntley et al., 2012 for an overview). External locus of control, along with low self-esteem and emotional loneliness, can distinguish individuals who have offended from nonoffending comparison groups (Thornton, 2002). Moreover, there are differences within groups of individuals who have sexually offended. For example, Elliott et al. (2009) found that individuals who have engaged in contact sexual offences have a more external locus of control compared to those who have engaged in online sexual offences. McAnena et al. (2016) also found that individuals who have engaged in non-contact offences and offences against children had a more external locus of control than contact offences against adults. Thakker et al. (2007) highlight that an individual who has sexually offended with a higher external locus of control may view emotions, thoughts and events surrounding sexual interests relating to offence behaviours (e.g. pae-dophilia, voyeurism) as inevitable and unavoidable. Thus, this is an important factor to consider with voyeurism.

Access to inappropriate person(s)

The final pathway, Access to Inappropriate Person(s), characterised individuals whose voyeuristic engagement was a means to gain access to intimate parts of someone's life, whom they explicitly knew they could not have a relationship with (Lister & Gannon, 2024). For example, a married neighbour, a stepchild, or a sister-in-law.

Lack of victim empathy is a construct which, until recently, has consistently been a feature of treatment for individuals who have sexually offended (Barnett & Mann, 2013). However, there is mixed evidence on the relationship between offending and empathy deficits (Barnett & Mann, 2013), with little relationship with recidivism (Hanson & Morton-Bourgon, 2005). Yet, Elliott et al. (2009) found that those who com-mitted contact sexual offences showed greater victim empathy distortions than those who had committed online offences, so victim empathy could be useful in discriminating offence behaviours. Similarly, moral disengagement has also been found to be higher among individuals who have sexually offended compared to those who have engaged in non-sexual offences (Petruccelli et al., 2017). Barnett and Mann (2013) explain the dis-crepancy in findings by arguing that victim empathy encompasses several components based on other psychological constructs, e.g. distress management, sexual preoccupation and offence-supportive cognition. However, victim empathy has not been investigated for voyeurism, an offence that is associated with less punitive attitudes (Duff, 2018), and so this may explain engagement in voyeurism with this pathway specifically.

Several psychological characteristics have the possibility to link to voyeurism, and yet, with the exception of sexual compulsivity, none of these have been empirically tested.

Rationale for the current study

Due to the dearth of literature on voyeurism, the current study was exploratory and com-prised two studies. Study 1 aimed to establish an estimate of interest in voyeurism in the UK general population, given the discrepancy in figures and lack of UK data. To gain a well-rounded understanding, this study aimed to identify differences in individuals' arousal, proclivity and engagement towards voyeurism as well as the relationship with

voyeurism and other paraphilic interests/behaviours. Study 2 aimed to empirically test the range of psychological characteristics that may be associated with voyeurism engagement based on the pathways in the DMV (Lister & Gannon, 2024): sexual compulsivity, sex drive, sexual fantasy endorsement, impulsivity, loneliness, emotion regulation, coping, efficacy in romantic relationships, self-esteem, ACEs, locus of control, victim empathy and moral disengagement. This study also aimed to model key psychological characteristics to form a comprehensive empirical model of voyeurism engagement.

Study 1 method

Participants

To examine the relationship between paraphilias in this study, an online study was conducted. A priori power analysis was conducted to estimate the necessary sample size to achieve 80% power, estimating a medium effect size for bivariate correlations ($r > 0.3$; $a = .05$). Power analysis demonstrated that 84 participants were required (G*Power 3.1; Faul et al., 2007). A sample of 492 individuals was collected, which substantially exceeds this, allowing for the detection of small correlations, ensuring robust power for all planned analyses, including Bonferroni adjustments for multiple comparisons. To adjust for the large sample size, only correlations which were a medium effect size ($r > .3$) and above were considered significant.

The sample consisted of men from the UK general population recruited through an online crowdsourcing website, Prolific. Participants could take part if they identified as a man, were over 18, and were UK residents, and were excluded if they did not meet these criteria. The mean age of the sample was 38.5 ($SD = 13.3$) with a range of 20–78 years ($n = 462$), and the majority of the sample were British (87.0%; $n = 428$). See Table 1 for further demographic information.

Measures

Joyal and Carpentier's (2017) adaptation of the paraphilia-associated sexual arousal patterns (PASAP) questionnaire (Ahlers et al., 2011) was further amended. A single-item depicting each paraphilic behaviour in the DSM-5 (APA, 2013), except voyeurism, was included: fetishism, exhibitionism, frotteurism, masochism, sadism, zoophilia, coprophilia and paedophilia (e.g. "sexual activities with a child aged 13 years old or less after you were an adult"). To investigate voyeurism, Joyal and Carpentier's single-item was expanded into 6-items to depict the range of behaviours, including the use of technology and upskirting. The expanded voyeurism items were as follows:

Watching someone in person, who is unaware of your presence, whilst they are undressing or nude.

Watching someone in person, who is unaware of your presence, whilst they are engaging in sexual activity.

Looking up someone's skirt in person whilst they are unaware of your presence.

Watching someone electronically, who is unaware of your presence, whilst they are undressing or nude.

Table 1. Demographic information for men in the sample for Study 1 and 2.

	Study 1 sample (N = 492)		Study 2 sample (N = 513)	
Variable	N	%	n	%
Ethnicity[a]				
British	428	87.00	234	45.60
European	23	4.70	125	24.30
Asian	7	1.40	5	1.00
American	3	0.60	7	1.40
African	0	0.00	4	0.80
Mixed	0	0.00	10	1.90
Other	4	0.80	0	0.00
Race[a]				
White			442	86.10
Black			11	2.10
Asian			18	3.70
Hispanic			2	0.40
Mixed			16	3.30
Highest Educational Attainment[a]				
GCSE or equivalent			37	8.20
A-level or equivalent			118	23.00
Bachelor's degree or equivalent			218	42.50
Postgraduate degree or equivalent			124	24.00
Sexual Orientation[a]				
Heterosexual			391	76.20
Homosexual			32	6.20
Bisexual			61	11.90
Pansexual			16	3.10
Relationship Status[a]				
Not in a relationship			198	38.60
In a committed relationship			117	22.80
In an open relationship			9	1.80
Married			105	20.50
Employment Status				
Employed			403	78.50
Unemployed			27	4.90
Studying			77	15.00
Retired			5	1.00

Note: Figures may not add up to 100% due to rounding.
[a]Totals may not always equal the total sample due to participants withholding information.

> Watching someone electronically, who is unaware of your presence, whilst they are engaging in sexual activity.

> Looking up someone's skirt electronically whilst they are unaware.

As a result, the amended scale contained 14 items: eight pertaining to the different paraphilias listed above and six related to voyeurism. For all items, participants were asked to indicate their levels of sexual arousal and engagement. To investigate sexual arousal, individuals were asked how arousing they found each of the items. Participants responded on a 5-point Likert-type scale from 0 "Not at all arousing" to 4 "Extremely arousing". Any score above zero indicated some sexual arousal to the paraphilic behaviour. To investigate engagement, individuals were asked how often they had engaged with each of the items. Participants responded on a 4-point Likert-type scale from 0 "I have never done it" to 3 "I did it often; more than 10 times lifetime". Any score above zero indicated some engagement with the paraphilic behaviour.

Proclivity was investigated for voyeurism only and so only included the six voyeurism items documented above. Participants were asked whether they would engage with the

behaviour if they could be provided with a guarantee that they would not be caught. This was measured on a 4-point Likert-type scale from 0 "I would definitely not do this" to 3 "I would definitely do this". Any score above zero indicated some desire to engage in voyeuristic behaviours.

Procedure

This study was approved by the authors' University Ethics Committee (Ref: 201915621840685783). Participants were given information about the study and provided consent to take part in the study online. Participants then completed the amended PASAP with the three sections (arousal, engagement and proclivity) presented in a randomised sequence to account for any order effects. Participants were paid £10 per hour, and the average survey completion time was 3.8 min. Upon completion of these, participants were thanked for their time and debriefed. The short completion time reflects the brevity of the survey since internal consistency estimates indicated non-random responding.

Data preparation and planned analyses

This is a descriptive study examining the prevalence and paraphilic correlates of voyeuristic behaviour. Thus, the statistical analysis was primarily descriptive, examined indices of reliability of the study measures, and the intercorrelation of paraphilia categories.

    The authors take responsibility for the integrity of the data, the accuracy of the data analyses, and have made every effort to avoid inflating statistically significant results.

Study 1 results

We report internal consistency reliability according to the criteria matrix outlined by Ponterotto and Ruckdeschel (2007), an adaptation of which can be seen in Appendix 1, whereby alphas are interpreted based on sample size and number of scale items. The amended PASAP demonstrated excellent internal reliability overall and for each of its subscales, including the voyeurism items (overall $\alpha = .91$; sexual arousal $\alpha = .86$, engagement $\alpha = .69$), with the lower alpha attributable to the smaller number of items in this subscale. The voyeurism items alone also demonstrated excellent internal reliability (overall $\alpha = .93$; sexual arousal $\alpha = .92$, engagement $\alpha = .71$, proclivity $\alpha = .93$), except engagement, which increased but still did not exceed the .80 threshold to be considered fair.

PASAP descriptive statistics

Sexual Arousal and Engagement. Responses of anything other than "Not at all aroused" were considered indicative of arousal, and responses of anything other than "I have never done it" were considered indicative of engagement. Over half of the sample reported sexual arousal to at least one paraphilic behaviour (66.9%, $n = 329$). Around half the sample also documented engagement with at least one paraphilic behaviour (52.0%, $n = 256$). Individuals' arousal and engagement were highest for voyeurism, 56.3% ($n =$

277) and 32.3% ($n = 159$), respectively. These figures were particularly high when compared to all other paraphilic behaviours (see Table 2).

   Proclivity. Proclivity total scores indicated that only 38.6% ($n = 190$) of the sample emphatically rejected all forms of voyeurism, if there was no chance of being caught. Around one third (32.5%; $n = 160$) of the sample stated they would probably engage and 8.9% ($n = 44$) said they would definitely engage in voyeurism. See Table 3 for the breakdown of responses by voyeuristic behaviour. Next, proclivity was separated by in-person and electronic acts. For in-person, 28.7% ($n = 141$) of the sample stated they would probably engage and 8.1% ($n = 40$) would definitely engage in voyeurism. For electronic acts, 20.1% ($n = 99$) would probably engage and 6.3% ($n = 31$) would definitely engage.

   To examine differences in participant proclivity to engage in voyeuristic behaviour online versus in-person, four paired-samples Wilcoxon signed-rank tests were conducted. These tests compared overall voyeurism scores and specific behaviours, including watching people undressing or nude, watching people engaging in sexual activity, and upskirting. Because normality assumptions were violated, Wilcoxon signed-rank tests were conducted to compare participants' proclivity to engage in various behaviours online versus in-person. A Bonferroni correction was applied to control for family-wise error

Table 2. Sexual arousal and engagement with paraphilic behaviours from DSM-V.

Paraphilic behaviour	Arousal	Engagement
Voyeurism	56.3% (277)	32.3% (159)
Fetishism	9.1% (45)	17.1% (84)
Exhibitionism	7.7% (38)	4.1% (20)
Frotteurism	19.9% (98)	8.1% (40)
Pedophilia	1.6% (8)	0.2% (1)
Masochism	20.5% (101)	13.8% (68)
Sadism	16.1% (79)	10.2% (50)
Zoophilia	1.0% (5)	0.6% (3)
Coprophilia	6.9% (34)	6.7% (33)
Total	66.9% (329)	52.0% (256)

Note: Numbers in brackets represent number of individuals.

Table 3. Prevalence (%) and intensity of desire for different voyeuristic behaviours amongst 492 adults in the general population.

		I would definitely not do this	I probably wouldn't do this	I probably would do this	I would definitely do this
In-person	Undressing/ Nude	44.70	27.40	22.60	5.30
	Sexual Activity	49.00	25.40	19.70	5.90
	Upskirting	70.10	19.10	7.70	3.00
	Total	40.90	43.30	28.70	8.10
Electronic	Undressing/ Nude	60.40	20.30	14.60	4.70
	Sexual Activity	58.70	20.10	15.70	5.50
	Upskirting	74.80	15.70	6.70	2.80
	Total	56.50	30.5	20.10	6.30
Total	38.60	48.20	32.50	8.90

Notes: Percentages for total scores will not equal 100. For scores relating to "I would definitely not do this", percentages indicate the number of individuals who stated this for *all* items. For all other responses, percentages indicate the number of individuals who stated this for at least one item.

across the four tests (α = .0125). Across all comparisons, participants reported a consistently higher proclivity to engage in these behaviours in-person than online.

Proclivity to engage in all voyeuristic behaviours combined was significantly lower online (Mdn = 3) than in-person (Mdn = 5), $W = 4382$, $N = 492$, $p < .001$, $r = −0.31$. This pattern was also evident for watching people who are undressing or nude, with lower proclivity online (Mdn = 1) than in-person (Mdn = 2), $W = 2198$, $N = 492$, $p < .001$, $r = −0.35$. Similarly, proclivity to watch people engaging in sexual activity was lower online (Mdn = 1) than in-person (Mdn = 2), $W = 2329$, $N = 492$, $p < .001$, $r = −0.22$. Finally, proclivity to engage in upskirting was lower online (Mdn = 1) than in-person (Mdn = 1), $W = 858$, $N = 492$, $p = .006$, $r = −0.13$.

Although all comparisons reached statistical significance, effect sizes were generally small, indicating that the differences between online and in-person proclivity were modest.

Bivariate associations among paraphilia categories

Spearman's rank correlations were carried out to investigate any significant associations between paraphilias for both arousal and engagement (see Table 4). Given the large sample size, reliance solely on p-values would likely identify trivially small associations as statistically significant. Therefore, we focused on effect size magnitude, retaining correlations of $r \geq .30$, corresponding to at least a medium effect size (Cohen, 1988). Statistical significance levels are reported for those reaching this effect size for completeness but were not used as the primary criterion for interpretation. A Bonferroni correction was also applied to control for family-wise error across the 36 tests (α = .00139). For arousal, there was a significant correlation between voyeurism and frotteurism only ($r(492) = .47$, $p < .001$). There were no significant associations between voyeurism and any other paraphilic behaviour for engagement using the strict significance level ($r > .30$).

Study 1 discussion

Study 1 showed that over one-third of the sample reported having engaged in voyeurism. This increased when individuals were asked to report their desire to engage with voyeurism (i.e. proclivity), with individuals more likely to engage in person than

Table 4. Correlation (Spearman's r) matrix comparing the relationships between different paraphilias based on arousal (bottom) and engagement (top).

	Mean arousal (SD)	Mean engagement (SD)	1	2	3	4	5	6	7	8	9
1. Voyeurism	3.57 (4.67)	.84 (1.81)	—	.17	.11	.27	.09	.11	.16	.02	.06
2. Fetishism	1.15 (.54)	1.29 (.70)	.11	—	.04	.07	−.02	.21	.16	.11	.23
3. Exhibitionism	1.12 (.47)	1.07 (.34)	.27	.23	—	.32*	.21	.09	.14	.12	.15
4. Frotteurism	1.30 (.68)	1.13 (.49)	.47*	.20	.42*	—	.16	.16	.09	.07	.15
5. Paedophilia	1.03 (.27)	1.01 (.14)	.16	.19	.21	.20	—	.12	.13	.00	−.01
6. Masochism	1.36 (.82)	1.25 (.68)	.10	.22	.13	.16	.13	—	.35*	.04	.35*
7. Sadism	1.25 (.68)	1.16 (.54)	.19	.27	.22	.27	.22	.45*	—	.15	.24
8. Zoophilia	1.02 (.23)	1.01 (.11)	.15	.25	.21	.18	.47*	.14	.19	—	.20
9. Coprophilia	1.13 (.56)	1.11 (.44)	.18	.23	.14	.20	.29	.30*	.34*	.30*	—

Note: $N = 492$. * = significant effect size at $r > .3$

online if there was no risk of being caught. Moreover, if there was no risk, individuals were more likely to engage in voyeurism in person than online. The prevalence was higher still when considering voyeuristic arousal. Over half of the sample of community males indicated sexual arousal towards voyeurism. Study 1 also demonstrated that, similar to the reported literature, voyeurism was associated with frotteurism, but only when considering sexual arousal. This association did not exist for engagement with voyeuristic behaviours.

Given the magnitude of interest in engaging with voyeurism, particularly compared to other paraphilias, it is important to identify the key characteristics and risk factors of voyeurism. Study 1 indicated that utilising a UK general population sample would be sufficient to investigate this. Therefore, Study 2 aimed to investigate the characteristics associated with voyeurism arousal, proclivity and engagement, as well as possible pathways of voyeurism engagement, utilising structural equation modelling.

Study 2 method

Participants

To examine the psychological variables associated with engagement in voyeuristic behaviours, an online study was conducted. A priori power analysis was conducted to estimate the necessary sample size to achieve 90% power, estimating a medium effect size for multivariate analysis of variance (MANOVA) ($f = 0.25$; $a = .05$; 3 groups, 9 response variables). Power at 90% was chosen to ensure a genuine effect would be found (Brysbaert, 2019). Power analysis demonstrated that 246 participants were required (G*Power 3.1; Faul et al., 2007).

There were 553 men recruited in total using opportunity sampling, but 40 were removed at the data preparation stage due to failed attention checks and/or high levels of non-completion rates. This left a remaining sample of 513 community men: 104 from an online crowdsourcing site (Prolific) and 409 from online forums (Reddit). Participants recruited from Prolific were remunerated at a rate of £10 per hour. Those recruited from Reddit were invited to participate in a prize draw to remunerate for their participation. Participants could take part if they identified as a man, were over 18, and were residing in the UK. The mean age of the sample was 30.0 ($SD = 8.5$) with a range of 18–67 years. The majority of the sample identified as White ($n = 442$, 86.1%), had a high-level of education (Bachelor's degree and above; $n = 342$, 66.5%), were employed ($n = 403$, 78.5%), and identified as heterosexual ($n = 392$, 74.8%). The largest nationality group was British ($n = 234$, 45.6%) and the highest populated relationship category was "not in relationship" ($n = 198$, 38.6%). Further demographic information can be found in Table 1.

Measures

The internal consistency reliability of each measure was assessed according to Ponterotto and Ruckdeschel's (2007) criteria matrix, whereby alphas are interpreted based on sample size and number of scale items. An adapted version can be found in Appendix 1.

Paraphilia-associated Sexual Arousal Patterns Questionnaire (PASAP) amended (Ahlers et al., 2011; Joyal & Carpentier, 2017). This measure, as described in Study 1, was used to

categorise participants on voyeurism engagement, based on proclivity and engagement subscales: No Engagement, Desire to Engage and Engagement. Any score above zero on the engagement subscale for voyeurism items (i.e. self-reporting that they had engaged one or more times) led to being placed in the Engagement (E) group. Individuals who had not engaged with voyeurism (zero on the engagement subscale) but had a score greater than zero on the proclivity subscale (i.e. self-reporting that they would engage in voyeuristic behaviours, providing a guarantee they would not be caught) were placed into the Desire to Engage (DTE) group. Individuals whose total scores on the proclivity and engagement subscales for voyeurism items were zero were placed in the No Engagement (NE) group. Overall, the scale demonstrated excellent internal reliability in this study (a = .93). For voyeurism items only, the sexual arousal and proclivity subscales demonstrated excellent internal consistency reliability (a = .94) and the engagement subscale demonstrated good reliability (a = .81).

Voyeuristic Behaviour Proclivity Scale (VBPS; Lister et al., 2026). This is a measure investigating individuals' proclivity to engage with voyeurism. It is comprised of eight vignettes describing different voyeuristic behaviours. After each, participants are asked to rate arousal ("Not at all aroused" to "Extremely aroused"), enjoyment ("Not at all" to "Extremely"), and likelihood of engagement ("Not at all likely" to "Extremely likely") on a 5-point Likert-type scale. An example vignette and questions can be seen in Appendix 2. Scores were totalled, with higher scores indicating greater interest in voyeurism. The 6-vignette version has shown excellent internal reliability in a mixed general community and student sample (α = .93; Hesp, 2026) and the 8-vignette version performed similarly in the current study (α = .96).

Sexual Compulsivity Scale (SCS; Kalichman & Rompa, 1995). This scale assesses intrusive, uncontrollable sexual thoughts. It contains 10-items, such as "My sexual thoughts and behaviours are causing problems in my life". Items are measured on a 4-point Likert-type scale from "Not at all like me" to "Very much like me". Scores are totalled with higher scores indicating higher sexual compulsivity. This scale has shown good internal reliability with a community sample of men and women (α = .86; Kalichman & Rompa, 1995) and performed similarly in the current study (a = .87).

Sex Drive Questionnaire (SDQ; Ostovich & Sabini, 2004). This measure examines sex drive using 4-items, such as "How often do you experience sexual desire?" Each item is measured using either a 6- or 7-point Likert-type scale. Those items pertaining to frequency of experiencing sexual desire, orgasms and masturbation are measured on a scale from "Never" to "Several times a day". The item pertaining to the level of sexual drive compared to an average person is from "−3 Very much lower" to "3 Very much greater". Higher total scores indicate greater sex drive. In a sample of male University students, Ostovich and Sabini (2004) found an excellent internal (α = .82) and test-retest reliability (α = .91) over a 6-to-8-week period. Lister and Gannon (2026), based on a sample of 166, found this scale to demonstrate good internal consistency (a = .78) and in the current study, the scale demonstrated moderate internal consistency (a = .79; N = 553).

Sexual Fantasy Questionnaire Revised (SFQ-R; Bartels & Harper, 2018). This is a 60-item measure of the frequency of fantasising about typical and atypical sexual fantasies, measured on a 5-point Likert-type scale from "Have never fantasized about" to "Have fantasized about very frequently". Included in the scale are two items directly relating to

voyeurism: "Watching others having sex" and "Secretly observing or peeping at somebody". This measure was originally developed as a multidimensional measure comprising six distinct domains. In the current study, a summed total score was used to index overall sexual fantasy propensity, with higher scores showing higher levels of propensity. The totalled score demonstrated excellent internal reliability in the current study ($a = .95$) evidencing shared variance across items/subscales.

The Barratt Impulsiveness Scale (BIS; Patton et al., 1995). This measure investigates impulsiveness, containing 34-items, with items such as "I act on the spur of the moment". Items are measured on a 4-point Likert-type scale from "Rarely/never" to "Almost always/always". Higher total scores indicate higher impulsivity. The scale has shown fair to moderate internal reliability amongst a combined general community and student sample ($α = .83$; Stanford et al., 2009). In the current study, the scale also demonstrated good internal reliability ($a = .86$).

Revised University of California Los Angeles (UCLA) Loneliness Scale (Russell et al., 1980). This measure assesses participants' feelings of loneliness day-to-day and their intimacy with adults, for example, "No one really knows me well". It is a 20-item measure asking how often individuals felt in the statements, rated on a 4-point Likert-type scale from "Never" to "Often". Higher scores indicate higher emotional loneliness. This measure has shown excellent internal reliability ($α = .91$; Russell et al., 1980) and a test-retest reliability of .70 when used with individuals who have sexually offended (Beech, 1998). In the current study, the scale also demonstrated excellent reliability ($a = .90$).

Difficulties in Emotion Regulation Scale – Short Form (DERS-SF; Kaufman et al., 2016). This scale measures individuals' ability to regulate emotions, via 18-items, such as "I have no idea how I feel". Items are measured on a 5-point Likert-type scale from "Almost never (0–10%)" to "Almost always (91–100%)". Higher total scores indicate greater difficulty with emotion regulation. The scale has excellent internal reliability ($a = .93$; $N = 479$) and good test-retest reliability among students ($ρ = .88$; Gratz & Roemer, 2004). Yet, in the current study, the scale demonstrated moderate reliability ($a = .89$) due to a lower sample size.

Brief Resilient Coping Scale (BRCS; Sinclair & Wallston, 2004). This measure assesses individuals' ability to cope in stressful situations. This is measured using 4-items, such as "I look for creative ways to alter difficult situations". Participants are asked how much they engage in the items when they encounter difficult, stressful, or upsetting situations. Items are measured on a 5-point Likert-type scale from "Not at all" to "Very much". Higher total scores indicate higher resilient copers. This scale has shown fair internal reliability with general community individuals ($a = .69$; Sinclair & Wallston, 2004; $N = 230$), but in the current study, this scale demonstrated lower internal reliability due to a larger sample size ($a = .66$).

Self-Efficacy in Romantic Relationships scale (SERR; Riggio et al., 2011). This measure examines the ability to engage with romantic relationships. It contains 12-items, such as "I am just one of those people who is not good at being a romantic relationship partner". Items are measured on a 9-point Likert-type scale, from "Strongly disagree" to "Strongly agree", with higher total scores indicating greater self-efficacy. This scale has demonstrated excellent internal reliability ($a = .89$) across multiple student samples (Riggio et al., 2013) and in the current study ($a = .90$).

Short Self-Esteem scale (SSES; Webster et al., 2007). This measure assesses self-esteem utilising eight-items on a dichotomous yes/no scale, for example, "Do you like the sort of

person you are?". Scores are totalled with higher scores indicating higher self-esteem. This scale has shown moderate internal ($a = .84$) and test-retest reliability ($α = .90$) in a sample of individuals who have sexually offended (Webster et al., 2007; $N = 1376$). However, in the current study, the scale demonstrated good reliability due to a smaller sample size ($a = .85$).

Adverse Childhood Experience Scale (ACE; Felitti et al., 1998). This measure examines the number of self-reported adverse childhood experiences. It comprises 10-items focusing on experiences such as abuse and neglect, measured on a dichotomous yes/no scale. Higher scores indicate a higher number of adverse experiences. Levenson and Socia (2016) report that there are no estimates of internal consistency, although the scale is based on well-validated existing scales and consistently shows good to excellent test-retest reliability estimates. In this study, it demonstrated adequate internal consistency reliability ($a = .71$).

Nowicki-Strickland Locus of Control Questionnaire (LOCQ; Nowicki, 1976). This is a 40-item scale assessing the degree to which individuals believe life events are the result of their own behaviour (internal) or outside of their control (external). Individuals respond on a dichotomous yes/no scale. For example, "Are some people just born lucky?". Higher total scores indicate a more externally controlled locus of control. This scale has shown fair internal consistency reliability ($a = .69$; Nowicki & Duke, 1982), but in the current study, the scale demonstrated lower reliability due to a larger sample size ($a = .77$).

Victim Empathy Scale (VES; Beckett & Fisher, 1994) amended. This is a 30-item scale which asks individuals who have sexually offended to indicate their views on the effects of their behaviour on the victim. Here, the scale was amended such that participants were asked to respond as if they were to engage with voyeurism, irrespective of whether they had or had not in the past. Participants responded on the same 3-point Likert-type scale from "Not at all" to "Yes, very much". The original scale demonstrated a good internal reliability ($a = .86$) and excellent test-retest reliability ($a = .95$) with individuals who have sexually offended (Beech, 1998). Higher scores indicate low levels of victim empathy. In the current study, the amended scale demonstrated excellent reliability ($a = .90$).

Moral Disengagement Scale amended (MDS; Detert et al., 2008). This scale measures moral disengagement. It contains 18-items, such as "It is alright to fight to protect your friends". Items are measured on a 7-point Likert-type scale from "Strongly disagree" to "Strongly agree". Higher total scores indicate greater moral disengagement. This scale has shown poor reliability ($a = .74$) among students (Detert et al., 2008). However, the 24-item version in a community sample ($a = .87$; Egan et al., 2015) and the 18-item version in the current study ($a = .85$) have been reported as having fair-to-moderate reliability.

Balanced Inventory of Desirable Responding – Version 6 (BIDR-6-IM; Paulhus, 1988). This scale aims to assess the validity of self-report responses by measuring socially desirable responding and impression management. The scale contains 40-items measured on a 7-point Likert-type scale from "Not true" to "Very true". For the purposes of this study, only the 20 impression management items were used. For example, "I sometimes tell lies if I have to". Higher scores on this measure indicate greater inflation of self to others. This subscale has shown adequate internal consistency reliability with a student sample ($α = .80$; Paulhus, 1998), and this was similarly the case in the current study ($a = .76$).

Procedure

This study was approved by the authors' University Ethics Committee (Ref: 202116223004417186). Participants first read the information sheet and provided consent to take part in the study on Qualtrics. Following this, demographic information was collected. If participants did not meet the eligibility criteria here, they were screened out and redirected to the debrief sheet. Then, participants were presented with the battery of measures in a randomised order, including three attention checks. Following this, participants were presented with a debrief sheet where they were signposted to any support if needed. Participants who were screened out also had access to this information. The average survey completion time was 34.2 min.

Data preparation and planned analyses

Participants who failed two or more attention checks or did not complete the PASAP in full were removed, as they could not be grouped. This changed the total sample size from 553 to 513. Following this, missing value analysis was conducted. The VES was removed due to non-completion rates being above 20% (26.79% cases and 24.33% values). All remaining measures, except the PASAP, showed some missing data, with 17.43% of values missing across the whole dataset. Following this, multiple imputation was conducted across the data utilising the Markov chain Monte Carlo (MCMC) method, as this was deemed the most appropriate methodology to address the missing data (Lee & Huber, 2021; Schunk, 2008; Scheffer, 2002; Sinharay et al., 2001); there were five imputations with 50 maximum case draws and two maximum parameter draws.

The analyses subsequently proceeded in several steps as follows. First, we examined the association between PASAP-measured voyeurism and social desirability to evaluate its suitability as a covariate. Second, we conducted a series of voyeurism group comparisons (NE, DTE and E) on the dependent measures via multivariate analysis of covariance (MANCOVA) with Bonferroni post hoc comparisons, controlling for social desirability score. Measures of effect size for group differences were computed using Hedge's g, where values of 0.20 are small, 0.50 medium and 0.80 large. Third, we conducted structural equation modelling (SEM) using Mplus 8.10 (Muthén & Muthén, 1998-2023) to examine a pathway model of voyeuristic engagement (i.e. the DMV). Maximum likelihood model estimation was used to model voyeuristic behaviour proclivity direct and indirect pathways to voyeuristic engagement, the primary outcome variable, via sexual compulsivity and a composite latent variable comprised of relational self-efficacy, resilient coping and loneliness. Finally, post hoc analyses examined the intersection of voyeuristic sexual interest and sexual compulsivity on voyeuristic engagement outcomes using median splits of the variables via one-way ANOVA with Tukey HSD comparisons.

Study 2 results

Voyeurism and social desirability

A one-way analysis of variance (ANOVA) was conducted to identify differences in impression management (BIDR-6-IM scores). Voyeurism Engagement, measured by the

PASAP, was the main factor with three levels: No Engagement (NE), Desire to Engage (DTE) and Engagement (E). There was a significant main effect of Voyeurism Engagement ($F(2, 510) = 14.49$, $p < .001$). Those who engaged with voyeurism (E) showed significantly lower scores ($M = 73.90$, $SD = 16.40$) than those who had not engaged (NE; $M = 82.83$, $SD = 15.65$; $p < .001$). Those with a desire to engage (DTE) also had significantly lower scores ($M = 77.97$, $SD = 15.10$) than those who had not engaged (NE; $p = .014$). There was no significant difference between E and DTE ($p = .06$). As a result of these findings, social desirability was used as a covariate in further analyses.

Voyeurism group comparisons

A MANCOVA was conducted with one factor containing three levels, similar to above (Voyeurism Engagement: No Engagement (NE), Desire to Engage (DTE) and Engagement (E)), measured using the PASAP. The dependent variables were the range of psychological measures documented above (excluding the VES), and BIDR-6-IM total score was inputted as the covariate.[1] The results showed that individuals could be differentiated by their engagement in voyeurism on the following: voyeuristic proclivity (VBPS), sexual compulsivity (SCS), sex drive (SDQ), sexual fantasising (SFQ-R), loneliness (UCLA), self-efficacy in romantic relationships (SERR), ACEs and moral disengagement (MDS). All descriptive statistics, test statistics and effect sizes can be found in Table 5.

Post-hoc analyses with Bonferroni correction were then conducted. First, there was a significant difference between E and DTE on voyeuristic proclivity with a medium effect ($p < .001$; $g = .69$), and a significant difference and large effect between DTE and NE ($p < .001$; $g = 1.06$) and E and NE ($p < .001$; $g = 1.62$). Proclivity towards voyeurism was highest amongst individuals who had engaged in voyeurism compared to both groups; those with a desire to engage had a higher level of proclivity than those who had not engaged. Second, for sexual compulsivity, there was a significant difference between E

Table 5. Descriptive and inferential statistics for each construct by voyeurism engagement.

Construct	No engagement (n = 188)		Desire to engage (n = 154)		Engagement (n = 171)		Range	F	p	p²
	M	SD	M	SD	M	SD				
Voyeuristic proclivity	7.72	8.88	20.11	14.30	32.04	19.69	0–92 (0–100)	102.56	**<.001**	**.287**
Sexual compulsivity	14.58	4.63	16.88	5.60	18.84	6.17	10–40 (10–40)	17.58	**<.001**	**.065**
Sex drive	17.47	3.71	18.46	3.49	18.92	3.80	4–26 (4–28)	3.82	**.023**	**.015**
Sexual fantasizing	47.22	27.25	58.68	27.91	66.38	34.88	0–180 (0–200)	12.11	**<.001**	**.045**
Impulsivity	61.41	11.11	64.15	10.76	64.29	12.07	37–102 (30–120)	0.78	.459	.003
Loneliness	37.53	12.44	40.69	10.77	39.90	11.88	10–59 (0–60)	3.79	**.033***	**.013**
Emotion regulation	43.60	12.84	45.93	12.13	44.71	11.93	5–20 (5–25)	1.10	.335	.004
Coping	14.61	2.71	14.07	2.95	14.48	2.98	12–108 (12–108)	1.54	.215	.006
Self-efficacy in romantic relationships	72.27	18.45	66.43	18.95	66.28	19.79	66–72 (12–108)	3.78	**.024**	**.015**
Self-esteem	5.35	2.61	4.97	2.66	5.04	2.59	0–8 (0–8)	0.50	.608	.002
ACEs	1.65	1.74	1.71	1.75	2.24	2.30	0–10 (0–10)	3.56	**.029**	**.014**
Locus of control	12.30	5.18	13.29	5.55	13.63	6.20	2–31 (0–40)	1.28	.279	.005
Moral disengagement	47.50	13.43	51.37	13.44	54.35	14.37	18–110 (32–224)	4.38	**.013**	**.017**

Notes: p values in bold are statistically significant, and partial eta squared values in bold indicate a small or larger effect size. The "Range" column shows the observed minimum and maximum scores in the current sample, with the possible range for each scale shown in parentheses.

and DTE showing a small effect ($p < .05$; $g = .33$), DTE and NE with a small-to-medium effect ($p < .01$; $g = .45$), and E and NE with a large effect ($p < .001$; $g = .79$). Sexual compulsivity scores were highest for those who had engaged with voyeurism and lowest for those with no such engagement. Third, there was a significant difference between E and NE only with respect to sex drive, with a small effect ($p < .05$; $g = .39$). Those who had engaged in voyeurism had higher sex drive scores compared to those who did not engage. Fourth, on sexual fantasising, there was a significant difference and medium effect between E and NE ($p < .001$; $g = .62$), and between DTE and E with a small effect ($p < .01$; $g = .24$). Sexual fantasy propensity was highest for those who had engaged in voyeurism and lowest for those who had not.

Fifth, for loneliness, there was no significant difference but there was a small effect size difference for NE and DTE ($p = .052$; $g = .27$). Higher scores on loneliness were reported by those who had a desire to engage in voyeurism compared to those who had not engaged in voyeurism. Sixth, for self-efficacy in romantic relationships, there was a significant difference between DTE and NE only ($p < .05$; $g = .31$) although both DTE and NE as well as E and NE had a small effect size ($p = .075$; $g = .31$). Those who had not engaged in voyeurism showed higher efficacy in romantic relationships than both those who had engaged and had a desire to engage. Seventh, for ACEs, descriptively, 69.40% of the overall sample ($n = 356$) had experienced one or more adverse childhood experiences (NE = 63.80%, $n = 103$; DTE = 72.10%, $n = 111$; E = 73.10%, $n = 142$). There was a small group difference for E and NE ($p = .054$; $g = .29$). A greater proportion of individuals who had engaged in voyeurism had experienced adverse childhood experiences compared to those who had not engaged. And lastly, for moral disengagement, there was a significant difference between E and NE only ($p < .01$; $g = .49$), showing a medium effect size. Those who had engaged with voyeurism showed higher moral disengagement than those who did not engage.

Structural equation modelling pathways to voyeuristic behaviour

To further investigate the role of different psychological variables in voyeuristic engagement, structural equation modelling (SEM) was conducted through Mplus. Rather than using all variables with a significant group difference, to ensure the model would be parsimonious, only those variables where there were conceptual commonalities with the DMV (Lister & Gannon, 2024) were considered for the hypothesised model in the current analysis. In addition, the MFM (Seto, 2019) was taken into consideration due to the suggested application to voyeurism and theoretical underpinning from decades of research into sexual offending.

Thus, it was expected that proclivity towards voyeurism (measured by the VBPS) would significantly predict engagement in voyeurism (measured by the PASAP engagement subscale; PASAP-E). In addition, as evidence has linked sexual compulsivity to voyeurism (Thomas et al., 2021), this was inputted as a mediator of proclivity and engagement in voyeurism (measured by the SCS). Lastly, a latent variable was also created (labelled F1), comprised of self-efficacy in romantic relationships (SERR), resilient coping (BRCS) and loneliness (UCLA). These were chosen and grouped based on the findings in the DMV (Lister & Gannon, 2024), where each of these variables were common experiences of all participants in the model prior to their voyeurism engagement, as well as the

findings from the multivariate analysis above. Whilst coping was not found to be significant, it is a common feature throughout the DMV and conceptually similar to the two other factors and thus was included at this stage. This latent variable was also expected to mediate the relationship between proclivity and engagement in voyeurism.

To examine potential multicollinearity among variables included in the hypothesised model, Pearson correlations were computed. No correlations exceeded .60 (large effect size; see Table 6), indicating that multicollinearity was not a concern. Although several observed variables (e.g. voyeuristic proclivity, sexual compulsivity and voyeuristic engagement) displayed significant skewness and kurtosis, and Mardia's test indicated multivariate non-normality, Mplus estimates maximum likelihood models using observed information, which produces Huber–White robust standard errors. This approach provides unbiased parameter estimates and appropriate standard errors even when the assumption of multivariate normality is violated. Given the large sample size ($N = 513$), the maximum likelihood estimator with robust standard errors is considered appropriate and yields reliable model fit indices. The model contained 18 free parameters, and therefore the sample size exceeded Kline's (2016) recommended minimum of at least ten participants per estimated parameter.

To evaluate the overall model fit, Hu and Bentler's (1999) criteria were used. The chi-square test of exact fit was statistically significant, $\chi^2(7) = 17.76$, $p < .05$. However, the chi-square statistic is known to be highly sensitive to sample size and deviations from normality and should not be interpreted in isolation (Jöreskog & Sörbom, 1993; Kenny, 2020). The robust fit indices indicated good overall model fit: CFI = .979, TLI = .955, RMSEA = .055 and SRMR = .039.

With respect to the structural pathways, voyeuristic proclivity (VBPS) significantly predicted sexual compulsivity (SCS) and voyeuristic engagement (PASAP-E). Voyeuristic proclivity also significantly predicted the socio-relational factor (F1). However, neither the socio-relational factor nor sexual compulsivity significantly predicted voyeuristic engagement. Thus, the proposed mediating effects were not supported. A graphical representation of the model is provided in Figure 1, including standardised regression coefficients and standard errors.

Voyeuristic behavioural proclivity and sexual compulsivity

Given that the literature to date has highlighted that sexual compulsivity has served the role as a mediator between voyeuristic interest and engagement (Brown et al., 2022; Thomas et al., 2021) and paraphilic interest and engagement more broadly (Dawson et al., 2016), the role of sexual compulsivity in the SEM was unexpected. Sexual compulsivity (SCS) was inputted as a mediator in the model, but neither this nor F1, met the criteria for

Table 6. Correlations (Pearson's *r*) between each variable in the structural equation model.

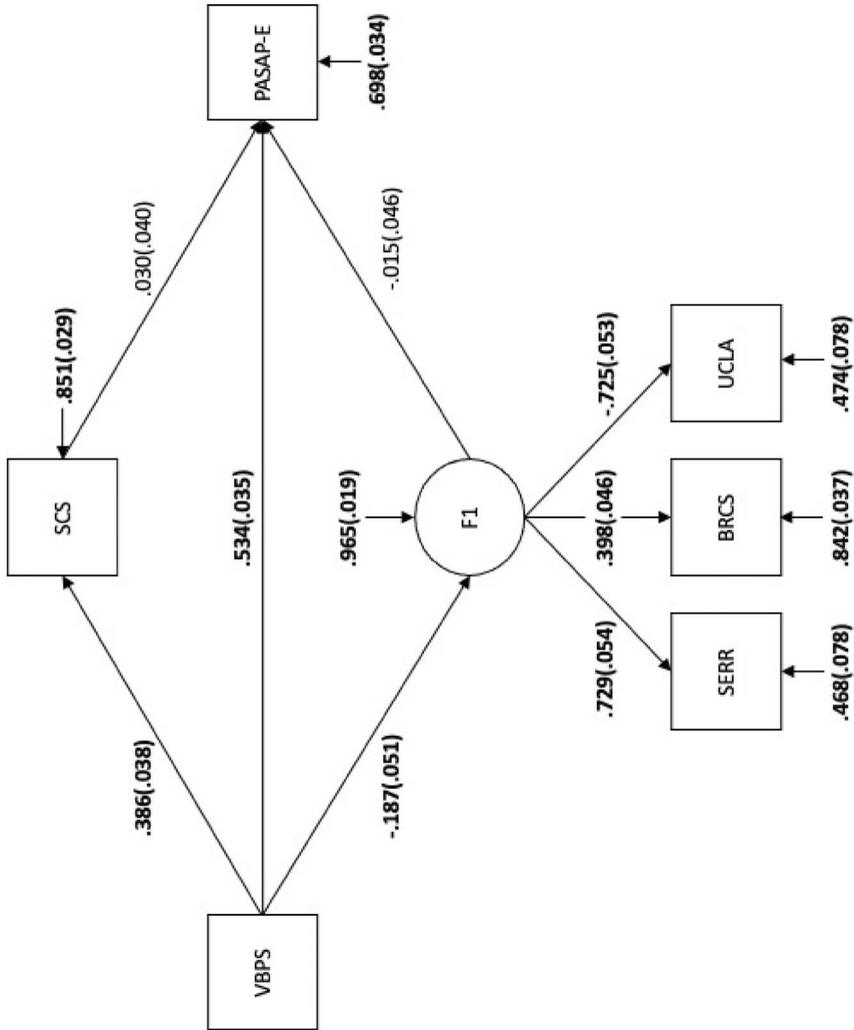|	1	2	3	4	5	6
1. Voyeuristic proclivity (VBPS)	—	.15	−.14	.39	−.02	.55
2. Loneliness		—	−.53	.19	−.29	.08
3. Self-efficacy in romantic relationships			—	−.17	.30	−.10
4. Sexual compulsivity				—	−.01	.24
5. Coping					—	−.03
6. Voyeurism engagement (PASAP-E)						—

Figure 1. Structural equation model.

Notes: Items on each line represent regression coefficients with standard errors in brackets. Items in bold indicate statistical significance ($p < .05$). VBPS = Voyeuristic Behaviour Proclivity Scale, SCS = Sexual Compulsivity Scale, PASAP-E = Paraphilia-Associated Sexual Arousal Patterns Engagement subscale, SERR = Self-Efficacy in Romantic Relationships Scale, BRCS = Brief Resilient Coping Scale, UCLA = University of California Los Angeles Loneliness Scale.

mediation due to a non-significant regression pathway from either variable to voyeuristic engagement (PASAP-E).

To further investigate the relationship between voyeuristic sexual proclivity (VBPS) and sexual compulsivity (SCS), based on the SEM findings, a median split was used to create four variables: (1) high voyeuristic proclivity/high sexual compulsivity, (2) high voyeuristic proclivity/low sexual compulsivity, (3) low voyeuristic proclivity/high sexual compulsivity and (4) low voyeuristic proclivity/low sexual compulsivity. These were then entered into a one-way ANOVA with voyeuristic engagement (PASAP-E) as the dependent variable. This demonstrated a significant effect of voyeuristic proclivity and sexual compulsivity on engagement in voyeuristic behaviours, $F(3, 51) = 40.592$, $p < .001$.

Post hoc comparisons using Tukey's HSD test demonstrated that those in the high voyeuristic proclivity/high sexual compulsivity group ($M = 2.85$, $SD = 3.19$) had engaged in significantly higher levels of voyeuristic behaviour than those in the high voyeuristic proclivity/low sexual compulsivity group ($M = 1.91$, $SD = 3.34$). Both of these groups had engaged in significantly higher levels of voyeuristic behaviours than the low voyeuristic proclivity/high sexual compulsivity group ($M = .39$, $SD = .80$) and the low voyeuristic proclivity/low sexual compulsivity group ($M = .37$, $SD = 1.13$). The two groups comprising individuals with low voyeuristic interest did not significantly differ.[2] All descriptive statistics are reported in Table 7 and a graphical representation seen in Figure 2.

Table 7. Means and standard deviations for voyeuristic engagement by high and low voyeuristic proclivity and sexual compulsivity.

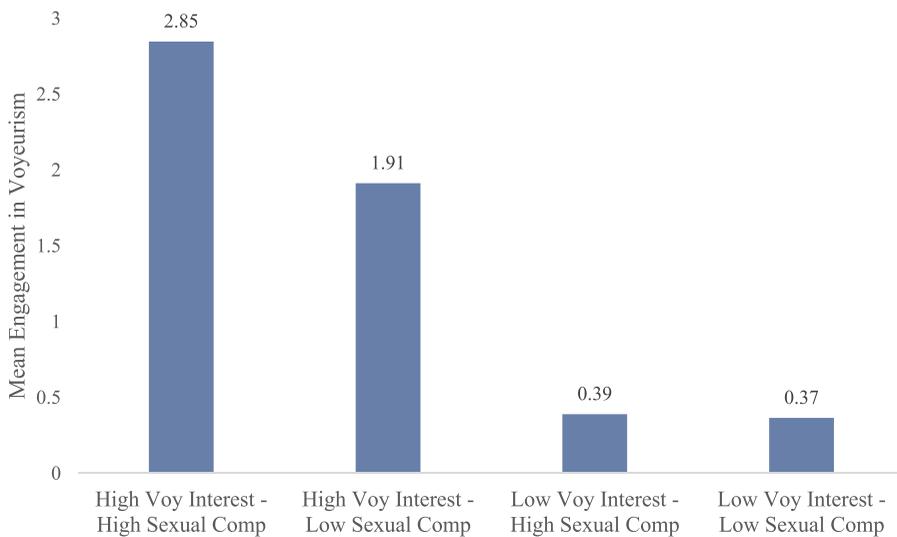| Voyeuristic proclivity	Sexual compulsivity	Mean	Standard deviation	N
High	High	2.847	3.185	111
High	Low	1.913	3.342	80
Low	High	0.390	0.803	100
Low	Low	0.365	1.129	222
	Total	1.148	2.382	513

Figure 2. A graphical representation of the mean engagement in voyeurism by high and low voyeuristic interest and sexual compulsivity.

Post-hoc power analysis demonstrated that this analysis was adequately powered achieving 99.90% power estimating a medium effect size for one-way ANOVA ($f = 0.25$; $a = .05$). Due to F1 being a latent variable comprised of three scales (SERR, BRCS, UCLA), a median split could not be conducted; however, it is clear that it was not a mediator in the model but did significantly contribute to an excellent model fit nonetheless.

Study 2 discussion

The current study found that there were factors which could distinguish between those who had and had not engaged in voyeurism. Individuals who had engaged in voyeurism demonstrated higher voyeuristic proclivity, sexual compulsivity, sex drive, sexual fantasising, self-efficacy in romantic relationships, loneliness, number of ACEs and moral disengagement, as well as lower impression management than individuals who had not engaged with voyeurism. The structural equation model demonstrated excellent model fit and showed that voyeuristic proclivity was a significant predictor of engagement in voyeuristic behaviours. Voyeuristic proclivity also significantly predicted sexual compulsivity and the latent socio-relational variable (F1; comprised of self-efficacy in romantic relationships, resilient coping and loneliness), where these variables had an important role in the engagement of voyeuristic behaviours due to their contribution to the model fit. Furthermore, sexual compulsivity demonstrated an important role in the relationship between voyeuristic proclivity and engagement as demonstrated by the follow-up median split analysis.

General discussion

Although there are no comparable estimates in the UK, the rates of voyeurism found in this study (32.30%) mirrored that found throughout the literature with estimates ranging from 12.00–34.50% across Canada, Czechia and Sweden (e.g. Bártová et al., 2021; Joyal & Carpentier, 2017; Långström & Seto, 2006). Further, the rates of voyeurism arousal (56.30%) and engagement (32.30%) found were considerably higher than those expected from a normal statistical bell curve (2.3% rare, 15.9% unusual), similar to Joyal and Carpentier (2017). Not only this, but rates were considerably higher than that of other paraphilias (Bártová et al., 2021; Joyal & Carpentier, 2017; Långström & Seto, 2006). Moreover, although prior research has often grouped voyeurism with other paraphilic behaviours, most notably exhibitionism and frotteurism (e.g. Abel et al., 1988; Abouesh & Clayton, 1999; Bradford et al., 1992; Hocken & Thorne, 2012; Thomas et al., 2021), the present findings suggest that this conflation may be inappropriate. Whilst voyeurism was correlated with frotteurism in terms of arousal, these were not related when considering behavioural engagement. This underscores the importance of examining voyeurism as a distinct construct.

The findings in the present study also provide support for the three pathways outlined in the DMV (Lister & Gannon, 2024): Sexual Gratification, Maladaptive Connection Seeking and Access to Inappropriate Person(s). All the variables entered into the SEM model contributed significantly to the model fit. Notably, sexual compulsivity aligns with the Sexual Gratification pathway and the socio-relational variables align with the Maladaptive Connection Seeking and the Access to Inappropriate Person(s) pathways. The SEM model

generated in the present study also evidences some support for the MFM (Seto, 2019). Voyeuristic proclivity was the primary driver of engagement, in line with paraphilic interest being a motivator for sexual offending. Similarly, although not included in the SEM model, individuals who had engaged with voyeurism demonstrated higher sex drive and sexual fantasising. In addition, socio-relational variables (i.e. loneliness, low self-efficacy in romantic relationships and poor resilient coping) and sexual compulsivity significantly contributed to the model's fit, in line with state and trait factors facilitating sexual offending in the MFM. Unexpectedly, based on Thomas et al.'s (2021) findings, sexual compulsivity was not found to mediate voyeuristic proclivity and engagement. Rather, sexual compulsivity *resembled* moderation such that it heightened the number of times someone engaged in voyeurism but only among those with high voyeuristic proclivity. This aligns with Seto's assertion that facilitative traits help individuals overcome internal inhibitions to act on their interest. Clinically, this implies that sexual compulsivity and the socio-relational variables could be key intervention targets for reducing the likelihood of engaging in voyeuristic behaviours.

The role of voyeuristic sexual interest, and therefore proclivity, in voyeuristic engagement also mirrors that found in the literature. Broadly, the importance of sexual interest in sexual offending has long been established (Hanson & Morton-Bourgon, 2005). However, Joyal and Carpentier (2022) investigated the relationship between paraphilic interest and engagement for each of the DSM-5 paraphilias in a large general population sample in Canada. They found that across the whole sample, paraphilic interest accounted for around 50.0% of paraphilic engagement. More specifically, voyeuristic sexual interest accounted for 33.9% of active engagement. The findings in the present study further evidences the importance of sexual interest in voyeurism for explaining voyeuristic behaviour.

Unexpectedly, individuals who had engaged in voyeurism reported lower moral disengagement than those who had not. This contrasts with Molen et al. (2023), who found higher moral disengagement among individuals engaging in voyeuristic behaviours. Moral disengagement is known to evolve over time and can emerge following adverse experiences (Caravita et al., 2014). One possible explanation is that engaging in voyeurism alters individuals' moral perceptions, fostering offence-supportive attitudes. This is consistent with the DMV (Lister & Gannon, 2024), where individuals' justifications for voyeuristic behaviour shifted after initial engagement. Such offence-supportive beliefs may facilitate repeated offending, since voyeurism is known to be repetitive (Abel et al., 1988; Lister & Gannon, 2024; Wood, 2019). The role of offence-supportive cognition in sexual offending is generally well-documented in the literature (Helmus et al., 2013). Thus, the relationship between moral disengagement, offence-supportive attitudes and voyeurism requires further investigation.

Limitations

Several limitations should be acknowledged when interpreting these findings. First, it is important to consider the need for replicability for the findings in this study, particularly when examining the SEM. Although goodness-of-fit indices are commonly used to assess model adequacy, their interpretation remains contested (Barrett, 2007). Some argue that chi-squared statistics are the only valid indicator (Barrett, 2007; Hayduk, 2014), while others highlight their sensitivity to sample size and complexity (Hooper et al., 2008;

Jöreskog & Sörbom, 1993; Kenny, 2020; Kenny & McCoach, 2003). Hu and Bentler's (1999) cut-off criteria remain the most widely applied (Marsh et al., 2004; Tarka, 2018), although some researchers caution they may lead to mis-specified models (Kline, 2018; Marsh et al., 2004), no widely accepted alternatives have emerged (Xia & Yang, 2019). Importantly, SEM should be guided by theoretical frameworks and a priori hypotheses rather than data-driven decisions alone (Arbuckle, 2007; Hooper et al., 2008; MacCallum et al., 1992; Tarka, 2018). As the current model aligns with established theory (i.e. the DMV; Lister & Gannon, 2024) and satisfies Hu and Bentler's (1999) criteria, it was deemed acceptable. Nonetheless, further validation in independent samples is necessary.

Second, this study adapted the PASAP to include additional voyeurism items and included an additional subscale on proclivity. The overall scale in both Studies 1 and 2 demonstrated excellent internal reliability as well as good-to-excellent alphas for the sub-scales for all items and the subscales for voyeurism-only items. However, it is important to note that the engagement subscale does not differentiate between intentional, planned voyeurism and opportunistic or accidental encounters. Intentionality may influence associated arousal and cognition, and it is possible that some socio-relational variables (e.g. loneliness, coping) may relate more strongly to intentionally motivated voyeurism than to opportunistic encounters. Future research should seek to examine these differences and how they may impact motivation and planning.

Third, the study was based on a general population sample of self-identified men residing in the UK, which limits generalisability. Participants were predominantly White, heterosexual, and well-educated, which is not an accurate representation of the UK general population. In addition, the absence of women and gender-diverse individuals precludes any conclusions about voyeurism in non-male or non-cisgender populations. Furthermore, this study excluded individuals with clinical diagnoses of voyeuristic disorder or those convicted of voyeuristic offences. As such, the findings may not fully extend to forensic populations or individuals at higher levels of clinical risk. Future research should compare community-based and forensic samples to determine whether the same psychological mechanisms apply across levels of severity and criminal justice involvement.

Conclusion

In conclusion, voyeuristic engagement in the general population appears to be high and more prevalent than other paraphilias. Sexual interest in voyeurism plays an integral role in voyeuristic engagement. In addition, sexual compulsivity and socio-relational factors, namely emotional loneliness, resilient coping and self-efficacy in romantic relationships, play a role in facilitating the progression from interest to behaviour. However, further research is needed to validate risk factors associated with engaging in voyeurism. This is crucial to ensure that treatment for individuals engaging in voyeuristic behaviour is empirically sound and evidence-based, something practitioners have long been requesting (Mann et al., 2008).

Notes

1. The only difference in results when removing the BIDR covariate was that there was a significant difference on the BIS (F(2, 510) = 3.68, p < .05). Post-hoc analysis showed a difference

between E and NE only with a small effect size ($p = .05$, $g = 0.25$). Permutation ANCOVAs were also run for each dependant variable with Holm-correction applied. There were no differences in which variables reached statistical significance. Permutation pairwise-comparisons were also conducted with Holm-corrected p values. There were negligible differences in p values for those comparisons that reached statistical significance which do not affect the interpretation of the findings, except for ACEs. Here, there was no significant difference between E and NE ($p = .07$).

2. Permutation ANOVA was also run with Holm-correction applied which indicated a significant result. Permutation pairwise-comparisons were also conducted with Holm-corrected p values. There were negligible differences in p values for those comparisons that reached statistical significance which do not affect the interpretation of the findings.

Authors contributions

All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by the first and third authors. The first draft of the manuscript was written by the first author and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendices

Appendix 1. An adaptation of Ponterotto and Ruckdeschel's (2007) internal reliability coefficient matrix

No. of items per subscale	Rating	Sample size (N)		
		<100	100–300	>300
≤ 6	Fair	.60	.65	.70
	Moderate	.65	.70	.75
	Good	.70	.75	.80
	Excellent	.75	.80	.85
7–11	Fair	.65	.70	.75
	Moderate	.70	.75	.80
	Good	.75	.80	.85
	Excellent	.80	.85	.90
≥ 12	Fair	.70	.75	.80
	Moderate	.75	.80	.85
	Good	.80	.85	-
	Excellent	.85	.90	.90

Appendix 2. Example vignette from the Voyeuristic Behaviour Proclivity Scale (VBPS; Lister et al., 2026)

Please read the following stories carefully and answer the questions relating to it.

(1) In this situation, how aroused would you have felt?
(2) In this situation, how likely is it that you'd have done the same?
(3) In this situation, how much would you have enjoyed watching the person?

Q3. You go to your local swimming pool to go swimming on your own. After a good swim, you relax for a while in the water. As you relax, you look around the pool and notice an attractive swimmer. When they leave the pool, you also leave at the same time. Although the changing rooms at the swimming baths are unisex, there are individual changing cubicles. You pick the cubicle next to the attractive swimmer and use your mobile phone to record over/under the cubicle as they get changed. You store the recording on your phone. You then wait for them to leave before showering and changing yourself.