

## Withdrawal-Motivated Behavior Does Not Connect Internet Sex Addiction and Sexual Objectification, but Craving Does



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Men who score higher on internet sex addiction are more likely to objectify women. In this study, we examined whether withdrawal-motivated behaviors (e.g., seeking sexually stimulating environments after cutting off online pornography consumption) connect behaviors typical for sexual objectification with internet sex addiction symptomatology, as suggested by Roza et al.'s symptomatology chain (2023). We analyzed a network of 1,272 heterosexual men ( $M_{age} = 32.93$ ,  $SD_{age} = 9.44$ ). The results went against our expectations – no withdrawal-motivated behaviors laid on a direct path between addictive symptomatology and objectifying behaviors. Instead, we found frequent preoccupation with thoughts of online pornographic content and the lack of ability to limit one's exposure to online pornography were associated with objectifying behaviors, and may, therefore, strengthen or sustain sexual objectification in sexually addicted men. Our results highlight the complexity of the relationship between sexual objectification and addictive symptomatology and provide a basis for further causal study of this relationship.

**Key words:** internet sex addiction, sexual objectification, withdrawal-motivated behavior, craving

Pornography consumption is the most prevalent internet sexual activity (e.g., Wright et al., 2023; Hoagland & Grubbs, 2021), especially among men, who are the most likely consumers (Solano et al., 2020). Outcomes of nudity exposure and sexual activities have enticed a significant body of research (see Bridges, 2024; Peter & Valkenburg, 2016), and literature reviews show that regular pornography

consumption affects sexual attitudes (Peter & Valkenburg, 2016; Wright, 2020). Specifically, frequent pornography exposure is (causally) associated with sexual objectification (SO), particularly of women (i.e., putting the physical appearance or sexual functionality of the body above the overall value of the person, Bridges et al., 2024; Mikorski & Szymanski, 2017; Vandenbosch & Oosten, 2017). Ex-

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cessive pornography consumption (a part of internet sex addiction, ISA) represents a precursor to a sexually distorted perception of people (Blinka et al., 2022; Chau et al., 2024). Recently, Novakova et al. (2025) suggested that complex mechanisms underlie sexual objectification in individuals addicted to online pornography. In search of these mechanisms, this study examines theoretical considerations linking ISA with SO. One such mechanism may be the activation of withdrawal-motivated behavior, which maladaptive coping strategies may follow, SO included (Roza et al., 2023). By zooming in on individual behaviors instead of broad concepts, we hope to gain a nuanced insight into how ISA may contribute to the sexually distorted perception of persons.

#### **Sexual Objectification and Online Pornography Consumption**

Research has shown that frequent pornography consumption is related to perceiving people as sex objects (Willis et al., 2022), and the relationship seems stronger for men (Vandenbosch & Oosten, 2017; Willis et al., 2022) probably because men consume online pornography more often (Solano et al., 2020; Campbell & Kohut, 2017), and its content accommodates their preferences (Miller & McBain, 2022). A standard pornographic script starts with fellatio and ends with male orgasm, establishing pornography as a tool for male pleasure (e.g., McKee, 2005). This scenario often emphasizes the treatment of a person (mostly a woman) as a body whose purpose is to provide sexual pleasure (Bartky, 2015). In this respect, pornography facilitates the message that treating women as sexual objects is acceptable.

Wright's sexual script acquisition, activation, and application model (3AM; Wright, 2011) implies that pornography may modify consumers' sexual cognitions, including SO

(Oosten, 2017; Wright, 2020). Users are exposed to scripts they are not aware of (acquisition) and primed with scripts of which they are already aware (activation). Moreover, pornography can normalize such scripts by portraying sexual behavior as rewarding (application). Due to the focus on primarily male audiences, especially male consumers may start following salient scripts that may have seemingly functional value. The functional value and saliency may then support and sustain the frequent exposure. Frequent exposure is thus likely to enhance long-term memory activation and have sex-objectifying scripts more accessible when frequent pornography users evaluate their perception of and attitudes toward women (Wright, 2024).

Pornography consumption may develop into ISA through a combination of biological, behavioral, and social mechanisms. It triggers the brain's reward system and creates a cycle where individuals need increasingly explicit content for arousal (Brand et al., 2016). Over time, this can lead to reduced self-control and compulsive behaviors (Kor et al., 2014). Many people use pornography to escape stress or loneliness, which can turn into a habit due to the accessibility of online content (Cooper et al., 2000). Cognitive factors, like becoming preoccupied with sexual material or developing unrealistic expectations about relationships, further fuel the cycle (Griffiths, 2005). Nevertheless, ISA is not equivalent to frequent consumption of online pornographic material; not all frequent consumers eventually manifest the maladaptive patterns indicative of ISA (Novakova et al., 2025).

#### **Mechanisms Connecting Sexual Objectification with Internet Sex Addiction**

Pornography is not only frequently consumed by recreational users but also by individuals at risk of ISA (Böthe et al., 2020; Grubbs et al.,

2018). Many studies show a linkage between sex addiction and sexual objectification tendencies (Blinka et al., 2022; Ševčíková et al., 2018). ISA is a distinct maladaptive form of sexual expression that manifests as long-term repetitive patterns of increased preoccupation (salience), loss of behavioral control (e.g., relapse), craving, mood (mis-)management, tolerance, withdrawal-motivated experiences (Wéry & Billieux, 2016; Kor et al., 2014), and negative consequences, such as relationship difficulties, emotional distress (e.g., guilt, anxiety, or depression), work-related impairment, or social withdrawal (Griffiths, 2012; Karila et al., 2014). Several qualitative studies (Blinka et al., 2022; Ševčíková et al., 2018) have pointed out that viewing women as sexual objects helps sexually addicted men cope with irritation and craving due to the lack of access to online pornography. Extensive objectification of women may saturate men with sexual stimuli when abstaining from online pornography and nurture the craving. Sexually addicted men also show increased neural responses to cues for external erotic stimuli (Antons et al., 2020; Brand et al., 2016; Gola et al., 2017).

Roza et al.'s scoping review (2023) presented evidence for the existence of withdrawal-motivated (in Roza et al., "withdrawal-like") symptoms. The symptomatology chain (according to Roza et al.) usually starts with exposure to online pornography, which can have a psychological and physiological impact, as well as with tolerance development. It continues with withdrawal onset and symptoms (mental, sexual, physical). Finally, to alleviate (withdrawal) symptoms, individuals might resort to coping strategies such as masturbation or even searching for sexual stimuli elsewhere. On the contrary, Fernandez et al. (2023) studied the effects of abstinence from sexually explicit materials and suggested that withdrawal-motivated behaviors and SO can co-occur in response to craving triggered by

limiting pornographic internet use. ISA model (Griffiths, 2012) is also consistent with the idea that both sexual objectification and withdrawal-motivated behaviors connect via craving. Internet sex addiction manifests through a multitude of maladaptive behavioral patterns. However, the literature primarily offers insights into the relationship between ISA and SO on a conceptual level. To gain insight into the mechanisms responsible for the relationship, we want to uncover the associations of the individual symptoms of ISA with sexual objectification.

### Research Aim

SO might be sustained and strengthened as a response to irritation due to missing access to sexually explicit stimuli (Blinka et al., 2022; Ševčíková et al., 2018). Roza et al. (2023) have proposed that discontinued problematic online pornography consumption may be followed by withdrawal-motivated behavior, and in turn, withdrawal-motivated behavior may activate coping strategies, possibly through objectifying people. In data, such a pattern would manifest as a positive relationship of withdrawal-motivated behavior with both internet sex addiction symptomatology and behaviors characteristic of objectification.

To uncover the position of withdrawal-motivated behavior in how ISA relates to sexual objectification, we zoom in on individual problematic behaviors. We expect that in a network model, symptoms of internet sex addiction and sexual objectification behaviors form separate clusters connected via withdrawal-motivated behaviors. Furthermore, we explore additional connections within the behaviors typical for ISA, SO, and withdrawal-motivated behavior that may suggest the mechanisms through which ISA and SO relate to one another.

As men typically engage with pornography more frequently and intensely than women

(Campbell & Kohut, 2017; Solano et al., 2020), and since such content predominantly caters to male preferences (Rodríguez-Castro et al., 2018; Miller et al., 2020), we concentrate on self-identified heterosexual male porn consumers, who may be especially prone to perpetuating SO.

## Methods

### Data Collection and Participants

The data come from a convenience sample online survey about internet sex conducted in the Czech Republic in 2017. The survey was primarily advertised via one of the biggest Czech online erotic platforms (a total of 2,215 participants, which is 88% of the whole sample, came from this website) and social networking sites targeting respondents who engaged in online sexual activities. The Czech Republic is racially and ethnically homogeneous and, like other European countries, has a large percentage of internet users. The Czech Republic is also known to be one of the most secular countries in Europe, with less conservative views towards family, marriage, and sexual norms (Datareportal, 2024; Václavík, 2024).

The data collection ran on the LimeSurvey platform. Participants had to be at least 18 and provide informed consent. They received information about the purpose of the study, data management and analytical procedures, and their rights. They filled out the questionnaire in Czech. We did not collect personal data and offered no incentives or rewards to the participants. 2,518 participants aged 18 to 77 ( $M_{\text{age}} = 32.73$ ,  $SD_{\text{age}} = 9.62$ ; 73.2% men) filled out the questionnaire. There were 1,312 non-homosexual men in total; no man indicated bisexuality. We worked with a subset of 1,272 men ( $M_{\text{age}} = 32.93$ ,  $SD_{\text{age}} = 9.44$ ) who self-identified as

heterosexual and filled in more than 75% of the questionnaire<sup>1</sup>.

### Items<sup>2</sup>

*Internet sex addiction symptomatology.* We worked with the items from the Short French Internet Addiction Test adapted to online sexual activities (s-IAT-sex; Wéry et al., 2015). The instrument assesses the potential symptoms of addiction to sexual websites in the preceding 12 months on a 5-point Likert scale from “never” (1) through “rarely” (2), “sometimes” (3), “often” (4) to “very often” (5). The items capture behaviors linked to craving and social problems (average inter-item correlation .38), and loss of control and difficulties with time management (average inter-item correlation .46).

*Withdrawal-motivated behavior.* We captured withdrawal behavior using three items (e.g., “If you take into account the last 12 months, how often have you needed to search for sexual stimuli somewhere else when you cannot access sites with sexual content?”) on a 5-point Likert scale from “never” (1) to “always/very often” (5), with an average inter-item correlation of .52. The wording of the items was based on interviews with sexually

<sup>1</sup> The choice of 75% reflected our motivation to avoid the inclusion of careless, bored, or otherwise demotivated participants and related response biases. We chose the 75% completion threshold to compromise between data completeness and robust estimates. We also wanted to support the validity of the multiple imputation, which replaces the missing values with those predicted from the remaining data entries. At the 75% threshold, all included participants meaningfully engaged with all three content domains (internet sex addiction, sexual objectification and withdrawal-motivated behavior).

<sup>2</sup> Since we work with the individual behaviors of the item-level, we do not elaborate on variability of the measures' composite scores. Readers interested in the internal consistencies and other psychometric properties may refer to Nováková et al. (2025), where factor models of the measures are fitted, together with McDonald's omega reliability estimates.

addicted men (Ševčíková et al., 2018) and corresponded to topics covered by other measures of addictive behavior (e.g., Standardised Clinical Interview to assess internet addiction, Wölfling et al., 2012; Griffiths, 2012). The exact wording of the items is in the Online Supplementary Materials.

*Sexual objectification.* SO was measured by five items (average inter-item correlation of .54) on the frequency of typical objectifying behavior (*Scans someone's figure with his eyes; Creepy gaze; Observes select body parts; Observes certain body parts instead of listening; Undresses passersby with his eyes*). The respondents indicated the frequency of such behavior on a 5-point Likert scale from "never" (1) to "always/very often" (5). The wording of the items was again based on interviews with addicted men (Ševčíková et al., 2018) and the same literature as the items on withdrawal-motivated behavior. The exact wording of the items is in the Online Supplementary Materials.

### Data Analysis

We performed a network analysis to explore links among ISA, withdrawal-motivated behavior, and sexual objectification on an item level. Under the network approach, behaviors associated with psychopathology do not result from an underlying latent variable. Instead, the phenomena arise from mutual pairwise interactions between symptoms (Borsboom & Cramer, 2013). This approach is beneficial for the exploratory study of mechanisms of addictive behavior, as it allows one to observe unique pairwise associations between individual behaviors. On data from a single measurement occasion, networks are systems of partial correlations. Each edge (connection, path) between two nodes (symptoms) represents a unique association between two variables after controlling for all the other variables in the network (Borsboom

et al., 2021). The analysis was pre-registered via the [Open Science Framework](#).

*Data cleaning and preparation.* We excluded all women, homosexual men, and people with more than 25% missing responses. There was considerable skewness in the data. Subsequently, we imputed the remaining missing data points with the CART method (van Buuren & Groothuis-Oudshoorn, 2011), which performs well with heavily skewed data (Burgette & Reiter, 2010). The imputed values were a median from five imputation iterations. We then performed a non-paranormal transformation to move the data distribution closer to normal (*gaussianization*, Jiang et al., 2020) to minimize the bias in the edge estimation. We checked for outliers via boxplots and Grubb's tests (Komsta & Novometsky, 2022) and found none. This left 1,272 men.

*Network estimation.* We first retrieved the correlation matrix using the *cor\_auto* function from the *qgraph* package (Epskamp et al., 2012). This function automatically computes a correlation matrix appropriate for the supplied data. We then used the *ggmModSelect* algorithm from *bootnet* (Epskamp & Fried, 2015), which performs well with bigger sample sizes. The algorithm first estimates node-wise regularized regression with regularization (graphical lasso). The regularization causes small edges to shrink towards zero. The algorithm then adds or removes edges to find a network model with the lowest possible Bayesian Information Criterion (BIC). The tuning parameter  $\gamma$  controls the sparsity of the network (how many edges are retained). We set the tuning parameter to .5. This value is a default choice in *bootnet*. It applies some penalty on model complexity (does not return a saturated model with all possible edges) yet does not pull substantive edges closer to zero notably faster. To assess the stability of the edges, we performed a non-parametric bootstrap with 1000 resamples.

| Results                       | Network Model                                                                      |
|-------------------------------|------------------------------------------------------------------------------------|
| <b>Descriptive Statistics</b> | We estimated eight non-zero edges between the three withdrawal-motivated behaviors |

Table 1 Descriptive statistics before multiple imputation and transformation

|                                              | mean | SD   | median | min | max | skewness | kurtosis |
|----------------------------------------------|------|------|--------|-----|-----|----------|----------|
| <b>Internet sex addiction symptomatology</b> |      |      |        |     |     |          |          |
| C1 Covers visiting s. sites                  | 1.81 | 1.11 | 1      | 1   | 5   | 1.28     | 0.74     |
| C2 Angry when disturbed from s. sites        | 1.36 | 0.79 | 1      | 1   | 5   | 2.52     | 6.39     |
| C3 Preoccupied with online sex               | 1.86 | 0.92 | 2      | 1   | 5   | 0.89     | 0.13     |
| C4 Hiding the time spent on s. sites         | 1.70 | 1.12 | 1      | 1   | 5   | 1.59     | 1.46     |
| C5 Does not go out due to s. sites           | 1.66 | 0.94 | 1      | 1   | 5   | 1.41     | 1.45     |
| C6 Uncomfortable without s. sites            | 1.37 | 0.76 | 1      | 1   | 5   | 2.31     | 5.32     |
| L1 Longer on s. sites than intended          | 2.80 | 1.08 | 3      | 1   | 5   | -0.04    | -0.77    |
| L2 Neglects household due to s. sites        | 1.69 | 0.93 | 1      | 1   | 5   | 1.32     | 1.20     |
| L3 Performs worse due to s. sites            | 1.50 | 0.81 | 1      | 1   | 5   | 1.71     | 2.61     |
| L4 Sleeps less due to s. sites               | 1.98 | 1.04 | 2      | 1   | 5   | 0.86     | 0.00     |
| L5 Begs to stay longer on s. sites           | 2.12 | 1.15 | 2      | 1   | 5   | 0.69     | -0.57    |
| L6 Unable to limit time on s. sites          | 1.59 | 0.89 | 1      | 1   | 5   | 1.46     | 1.38     |
| <b>Objectification</b>                       |      |      |        |     |     |          |          |
| O1 Scans someone's figure with his eyes      | 3.93 | 0.91 | 4      | 1   | 5   | -0.68    | 0.12     |
| O2 Creepy gaze                               | 2.77 | 1.13 | 3      | 1   | 5   | 0.11     | -0.73    |
| O3 Observes select body parts                | 3.30 | 1.02 | 3      | 1   | 5   | -0.20    | -0.49    |
| O4 Observes body parts instead of listening  | 2.66 | 1.05 | 3      | 1   | 5   | 0.23     | -0.52    |
| O5 Undresses passers-by with his eyes        | 2.86 | 1.18 | 3      | 1   | 5   | 0.09     | -0.83    |
| <b>Withdrawal-Motivated behavior</b>         |      |      |        |     |     |          |          |
| W1 Searches sexual stimuli elsewhere         | 1.60 | 0.86 | 1      | 1   | 5   | 1.38     | 1.32     |
| W2 Visits places where sex is accessible     | 1.34 | 0.71 | 1      | 1   | 5   | 2.14     | 3.95     |
| W3 Visits places with attractive people      | 1.56 | 0.86 | 1      | 1   | 5   | 1.48     | 1.50     |

Note. Full descriptives after multiple imputations and transformations are available in the Supplementary Materials. s. sites = sexually themed websites

and the rest of the network. The strongest one was equivalent to a partial correlation of .17 (W1 and C3; *Searches sexual stimuli elsewhere when not on the internet* and *Feeling preoccupied with online sexual activities when offline or fantasizing about being on internet sex sites*), followed by .13 (W1 and L2; *Searches sexual stimuli elsewhere when not on the internet* and *Neglects household*), .10 (W2 and C2; *Visits places where sex is accessible when not on the internet* and *Angry when disturbed from sex sites*), .09 (W3 *Visits places with attractive people* and O4 *Observes body instead of listening*), and .09. (W3 *Visits places with attractive people* and O2 *Gazes creepily*.) No withdrawal-motivated behavior laid on a direct path between SO and ISA symptomatology.

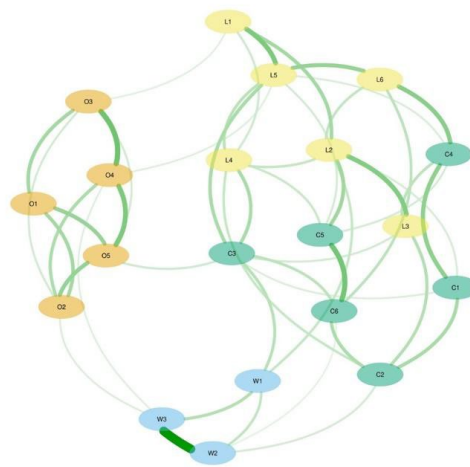
There were three weak non-zero connections between sexual objectification and internet sex addiction items: .12 (O5 and C3; *Undresses passer-byes with his eyes* and *Feeling preoccupied with online sexual activities when offline or fantasizing about being on internet sex sites*), .07 (O3 and L1; *Observes select body parts* and *Visits sex sites for longer than intended*) and .07 (O4 and L5; *Observes certain body parts instead of listening* and *Wants to stay for 'just a few more minutes'*). Moreover, the bootstrapped confidence intervals (1000 resamples) around these parameters were broad, indicating considerable inaccuracy, and bootstrapped means were closer to zero than the estimated values.

The resulting network graph is in Figure 1, and the complete edge list can be found in the Online Supplementary Materials (Supplement 1), together with the bootstrap plots (Supplements 2 and 3). We did not use any arguments to hide edges (this deviated from our pre-registration) as the relationships were generally weak, making the network sparse (median edge weight = 0, mean edge weight = .04), with isolated clusters: the mean

and median edge weight for withdrawal-motivated behavior (median edge weight = .15, mean edge weight = .21) and objectification clusters (median edge weight = .21, mean edge weight = .16) were notably higher than those outside clusters (median edge weight = .01, mean edge weight = 0). The aggregate connections between the items on addiction symptomatology were weaker (median edge weight = 0, mean edge weight = .07), but this can be attributed to a substantial number of edges estimated between all the s-IAT-sex items (still the minimum edge weight estimated between the s-IAT-sex items when excluding the zero edges was .09 and the maximum was .33). The relatively high magnitude of the within-cluster edge weights suggests that men who engaged in one behavior from, for instance, the withdrawal cluster, were more likely to engage in the remaining ones.

At one reviewer's suggestion, we performed sensitivity analyses by 1) lowering the tuning parameter and 2) using polychoric correlations and an input. These revealed some additional, mostly weak ( $\leq .1$ ) edges. Except for one, all were relationships within the broad behavioral clusters. The only additional substantial edge outside the broad behavioral clusters was a negative link between O1 and C5 (-.10 under zero tuning parameter, -.18 with polychoric correlations as an input), suggesting that men who engage in scanning others' bodies with their eyes are less likely to stay home due to online sexual motivation. The script for the sensitivity analysis, annotated with a brief summary of the results, has been uploaded to the OSF repository.

The data did not support our expectation that withdrawal-motivated behavior characterized by seeking out external sexual stimuli outside the internet directly connects addictive symptomatology and objectifying behaviors. There was a weak link between the sexual objectification and withdrawal-motivated



Note. s. sites = internet sex sites

Figure 1 Network model.

behavior clusters via *Feeling preoccupied with online sexual activities when offline or fantasizing about being on internet sex sites*, a craving symptom.

### Discussion

We used network analysis to examine the relationships between ISA symptoms and behavior typical of women's SO. More precisely, we were interested in whether withdrawal-motivated behaviors would connect internet sex addiction symptoms and objectifying behaviors. This symptomatology chain proposed by

#### Objectification

- O1 Scans someone's figure with his eyes
- O2 Creepy gaze
- O3 Observes select body parts
- O4 Observes body parts instead of listening
- O5 Undresses passers-by with his eyes

#### Withdrawal-motivated behavior

- W1 Searches sex stimuli elsewhere
- W2 Visits places where sex is accessible
- W3 Visits places with attractive people

#### Craving/Social problems

- C1 Covers visiting s. sites
- C2 Angry when disturbed from s.sites
- C3 Preoccupied with online sex
- C4 Hiding the time spent on s. sites
- C5 Does not go out due to s. sites
- C6 Uncomfortable without s. sites

#### Loss of control/time management

- L1 Longer on s. sites than intended
- L2 Neglects household due to s.sites
- L3 Performs worse due to s. sites
- L4 Sleeps less due to s. sites
- L5 Begs to stay longer on s. sites
- L6 Unable to limit time on s. sites

Roza et al. (2023) aligns with the proposition that viewing women as sexual objects helps sexually addicted people cope with the state of irritation (which can be considered a withdrawal-motivated behavior) due to the lack of access to online pornography (Blinka et al., 2022; Ševčíková et al., 2018). Therefore, withdrawal-motivated behavior would be, at least to some extent, necessary to facilitate sexual objectification. However, we found no withdrawal-motivated behavior on a direct path between addictive symptomatology and sexual objectification. Instead, we found that men who were often preoccupied with on-

line sexual activities (craving domain according to Wéry et al., 2015) were more likely to search for sexual stimuli elsewhere when not perusing websites with online pornographic content (withdrawal), as well as undress passing by women with their eyes (SO). These findings align with Fernandez et al. (2023), who identified abstinence effects as crucial for facilitating both withdrawal-motivated behaviors and SO. Additionally, and as expected, men who engaged in certain objectifying and withdrawal-motivated behaviors were also likely to engage in other behaviors from the same domain.

The exact nature of the mechanism is challenging to uncover, as the relationship may arise from different causal patterns, which are impossible to assess in cross-sectional data or without (quasi-)experimental manipulation. Seeking out external sexual stimuli when lacking access to internet sex sites may be a response to craving (or, more precisely, feeling preoccupied with online sexual activities). Craving due to preoccupation with online sexual activities is linked to intense cue reactivity (Antons et al., 2020; Gola et al., 2017), which may maintain or strengthen the objectification of women to nourish men's fantasies when pornographic sites are not accessible (Blinka et al., 2022; Fernandez et al., 2023; Ševčíková et al., 2018). This interpretation of craving as a common cause of withdrawal-motivated behavior and objectification behaviors aligns with research on sexually addicted people being more likely to react to sexually related cues, than for instance cues related to monetary gains, than healthy internet population (Gola et al., 2017, see also Antons et al., 2020; Brand et al., 2016). This cue sensitivity then predicts increased behavioral motivation to view erotic images and is linked to problematic pornography use, the instances of pornography use per week, as well as the number of weekly masturbations (Gola

et al., 2017; Roza et al. 2023). Craving may thus, due to its relationship with intense cue reactivity, facilitate sexual objectification and motivate the search for places with accessible stimuli.

While we theoretically lean towards the common-cause explanation, which also aligns with the internet sex addiction model (Griffiths, 2012; Karila et al., 2014; Wéry et al., 2015), there are alternative explanations. We find it unlikely that withdrawal-motivated behavior would occur before craving, as some form of craving is necessary to provide an impetus for seeking sexual stimuli outside the internet (see Roza et al., 2023). However, long-sustained and deeply internalized SO may make men susceptible to persistent thoughts of any sexual activity, online pornography included (Willis et al., 2022). If such material is not accessible, a reaction is to seek it elsewhere to facilitate masturbation, a strategy to alleviate withdrawal-motivated symptoms. Relationships between craving, withdrawal-motivated behavior, and SO seem complex and dependent on the time window where they arise. We may, therefore, observe different patterns on a panel level (a sizable sample measured over several occasions) than cross-sectionally or momentarily, for instance, shortly after the removal of the pornographic material. In some men in our sample, the symptoms of ISA and withdrawal-motivated behavior may not have overlapped during the data collection. Similarly, some men may have cycled between periods of heightened ISA symptomatology and withdrawal-motivated behavior. The 12-month interval may be too crude to provide a nuanced look into the associations. Therefore, experimental or (intensive) longitudinal studies are needed to deepen our understanding of the role of the individual components. In addition, we found that men who tended to selectively observe body parts and do so

even instead of listening to a conversation were also more likely to use sex sites for longer than intended and even to beg to stay on sex sites for a few more minutes (albeit the associations were very weak). Uncontrolled sex site usage leads to more exposure to sexual content that depicts women as sexual objects and may thus intensify the reductionist attitude towards women, which aligns with Wright's 3AM (2020). As 3AM implies, frequent exposure is likely to enhance long-term memory activation and make sex-objectifying scripts more accessible when users evaluate their perception of and attitudes toward women. In this respect, the loss of control may be responsible for the frequent use of internet sex sites, for which there is strong evidence of its association with sexual objectification (Mikorski & Szymanski, 2017; Peter & Valkenburg, 2009; Vandenbosch & Oosten, 2017). Alternatively, the kind of sexual objectification captured by the two items, especially the inability to follow a conversation, suggests that to engage in such behaviors, there must be a certain lack of inhibition, as men are too consumed by the sexual stimuli to participate in a conversation. Such a lack of inhibition may make men less successful at limiting consumption (see Chau et al., 2024, who found that a lack of control connected sex addiction and SO).

Our study also has an additional methodological outcome. Network topology may serve as a useful heuristic for gauging instruments' dimensionality, with firmly separated clusters suggesting demarcated latent variables (Christensen & Golino, 2021). The original work of Wéry et al. (2015) reported a very strong correlation between the dimensions of s-IAT-sex (craving/social problems and loss of control/time management), suggesting whether it is plausible to fit a two-dimensional model to s-IAT-sex. Our network model did not support the two dimensions either.

Instead, all the ISA symptoms were broadly interconnected in one cluster. Moreover, a two-factor model estimated on the same data did not fit the data well (Novakova et al., 2025). This suggests either unidimensionality or a lack of dimensionality altogether, which would point towards a more symptom-oriented approach to s-IAT-sex or ISA in general. This finding aligns with other studies (e.g., Chen & Jiang, 2020; Ševčíková & Stašek, 2023). We, therefore, encourage other researchers to revisit the theory behind s-IAT-sex and advocate for treating s-IAT-sex as unidimensional or working with the individual symptoms, at least until the proposal of an alternative structure.

The relationships we found were weaker than expected. The incidence of ISA symptoms and withdrawal-motivated behaviors in our convenience sample was quite low, limiting the variability in data and most likely attenuating the relationships. Our expectations were primarily based on clinical samples, while the relationships seem much weaker in the general population. Future research on clinical samples must examine whether clinical samples yield more substantial connections. Also, since our measurement tools captured different time windows in a single measurement occasion, this could have weakened the connections. Finally, we assumed that self-identified heterosexual men's objectification would primarily target women, however, the SO items were not gendered. Therefore, it may be worth exploring whether there are differences in the mechanisms contingent on the gender of the objectified.

## Conclusions

We explored the multifactorial nature of the relationship between the sexual objectification of women and internet sexual addiction in heterosexual men. One key takeaway fol-

lows from our focus on withdrawal-motivated behaviors, which did not connect symptoms of ISA to objectifying actions, as Roza et al. (2023) suggested. Instead, the data were consistent with the addiction model of Griffiths (2012) and Fernandez et al. (2023), who proposed that withdrawal-motivated behaviors and sexual objectification might co-occur due to craving. Another main finding highlights the inability to limit exposure to online pornography as a mechanism that can result in prolonged viewing, which may further sustain or intensify objectification. While it is necessary to examine the suggested mechanisms by methods that can test the proposed causal directions of the relationships, their identification may have practical implications for the treatment of internet sex addiction that should not only address unhealthy sexual behavior but also uncover specific pathways contributing to the acquisition of problematic sexual beliefs or behavior, such as sexual objectification.

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