The Roles of Affective Lability, Boredom, and Mindfulness in Predicting Number of Sex Partners within Women

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Abstract: Affective lability, a trait related to borderline personality disorder, bipolar disorder, eating disorders, and post-traumatic stress disorder, is associated with a greater number of lifetime sex partners. Among individuals who are affectively labile, boredom proneness, which has been linked to impulsive and risky sexual behaviors, might increase the likelihood of having more sex partners. Conversely, mindfulness has been found to be associated with healthy emotion regulation and lower impulsivity, and may enable a greater tolerance of affective lability and boredom, and, in turn, lower the sense of urgency to engage in sex to cope. Thus, the present study investigated the links between affective lability, boredom proneness, mindfulness, and number of sex partners in the last year. We predicted that affective lability would be positively associated with number of sex partners, and that this association would be moderated by boredom proneness and mindfulness in a three-way interaction. Adult women (N = 469, M age = 25.15 years) were recruited from online communities and completed measures of affective lability, boredom proneness, trait mindfulness, and number of sex partners in the last year. None of the preregistered three-way interactions were supported; however, exploratory analyses revealed that, among women who reported rapid changes between depression and elation, those who were less likely to observe thoughts and sensations had more sex partners in the last year. Clinicians and researchers should further investigate which facets of mindfulness may protect against a higher number of sex partners in affectively labile individuals.

Keywords: affective lability; affective dynamics; boredom proneness; mindfulness; sexual behavior

1. Introduction

Affective lability, a trait related to borderline personality disorder (BPD), bipolar disorder, eating disorders, and post-traumatic stress disorder (PTSD), is associated with a greater number of sex partners [1]. Having a greater number of sex partners is associated with various possible harms such as sexually transmitted infections, unplanned pregnancy, and sexual assault [2–4]. Among people who are affectively labile, boredom might be experienced more averagely and intensely and might increase the likelihood of engaging in impulsive sex. On the other hand, the tendency to observe thoughts and feelings that arise in the present moment in an accepting and nonjudgmental way may reduce impulsive behavior. In other words, among people who have the tendency to experience rapid mood changes and boredom, mindfulness may lower the likelihood of responding maladaptively to impulses and may reduce number of sex partners and associated risks.

1.1. Current Theory and Hypotheses

The potential negative consequences of having more casual sex partners are especially high for women compared to men in terms of negative emotions following casual sex [5,6], being stigmatized for engaging in casual sex [6,7], costs of unplanned pregnancy [8,9], and risk of sexual assault [2]. Additionally, women may be more emotionally expressive...
than men partially due to gender norms and stereotypes suggesting that women are more emotionally expressive and labile in Western cultures [10]. Thus, this study focuses on women. We theorized that women who experience sudden mood changes are more likely to engage in impulsive sex, particularly if they are prone to boredom; however, women who attend to the present moment without judgment are protected against impulsive sex. Our preregistered hypothesis was that affective lability would be associated with a greater number of sex partners in the last year, especially for women who are high on boredom proneness and low on mindfulness.

1.2. Affective Lability

Affective lability, conceptualized as a transdiagnostic construct, is a facet of emotion dysregulation involving rapid changes in extreme emotional states [11,12]. Affective lability is a primary feature of BPD and bipolar disorder (DSM-5-TR; [13]) and is also associated with other disorders such as eating disorders [14] and PTSD [15]. Although affective lability is present in numerous mental health issues, the shifts between emotional states vary depending on the disorder. For example, individuals with traits related to BPD are more likely to experience rapid shifts between euthymia and anger and between depression and anxiety; however, individuals with symptoms of bipolar II are more likely to experience shifts between euthymia and states of depression and elation [16–18].

1.3. Affective Lability and Sexual Behavior

People who experience frequent mood shifts are more vulnerable to negative emotions and depression [19], experience these states as aversive and intolerable, and are motivated to regulate their emotions quickly to alleviate their intensity and aversiveness [16]. In other words, rapid fluctuations in mood may create an elevated sense of urgency to regulate emotions, and, in response, promote engagement in impulsive or maladaptive behavior such as the pursuit of sex, even if it is risky. For instance, people with higher affective lability are more likely to be impulsive [16,20], and people with emotion regulation difficulties are more likely to have sex in exchange for money or drugs [21], which is associated with a higher risk for STDs, sexual assault, and physical abuse [22,23]. In addition, engaging in impulsive behavior is linked to a higher number of sex partners [9]. Furthermore, difficulty regulating emotions, and specifically affective lability, are associated with a greater number of sex partners [1,24].

1.4. Boredom and Impulsivity

Because people who experience strong fluctuations in mood are prone to impulsive behavior [16], feeling bored may escalate an aversive emotional experience (e.g., an anger response may be exacerbated if there is recurring boredom). Therefore, this heightened aversive experience may lower the threshold for acting on an urge to attenuate the intensity. For instance, boredom proneness is associated with risky sexual behavior [25], hypersexuality [26], impulsivity [27], risk-taking [28], use of substances (e.g., alcohol, marijuana, and tobacco; [29,30]), self-harm [31], binge drinking, and excessive internet use [32]. Taking this into account, among people with strong fluctuations in mood, being boredom-prone may motivate impulsive behavior to alleviate the unpleasant or even painful experience of boredom, and, in turn, lead to casual sex in order to regulate emotions.

1.5. Mindfulness as a Protective Factor

Mindfulness, the ability to attend to thoughts, feelings, and physical sensations in an accepting and nonjudgmental way [33], may reduce the impulse to pursue sex in order to alleviate the aversiveness of boredom in people who are affectively labile. For instance, research suggests that mindfulness is negatively associated with impulsivity [34–36]. In addition, higher trait mindfulness is associated with healthy emotion regulation [37–40], which may be due to reduced reactivity [41]. Therefore, engaging in mindfulness practices may enable awareness and understanding of one’s emotions which, in turn, may foster a
greater ability to cope with rapid mood shifts. This enhanced ability to manage fluctuating emotional states may reduce overall reactivity to emotions, and, thus, protect against acting on an urge to seek sex.

In addition to promoting healthier emotional regulation, mindfulness may also enable a greater tolerance of boredom. For instance, mindfulness may help to reduce the intensity of negative emotions in people who are boredom-prone, as Lee and Zelman [42] found that the Acting with Awareness and Describing domains of the Five-Factor Mindfulness Questionnaire (FFMQ) weakened the association between boredom proneness and anxiety and stress. Furthermore, since mindfulness is negatively associated with hypersexuality [43,44], mindfulness may be associated with fewer sex partners despite being prone to boredom. Thus, mindfulness may act as a protective factor for people who are prone to boredom and lower the chances of maladaptive coping and consequent impulsive sex.

1.6. The Current Study

Based on the above theorizing, we hypothesized that affective lability would be positively associated with number of sex partners in the last year, and that this association would be moderated by boredom proneness and mindfulness in a three-way interaction. More specifically, we predicted that high affective lability would be associated with a greater number of sex partners, especially for women who are high on boredom proneness and low on mindfulness. In addition, we investigated the predictive ability of five aspects of mindfulness to determine which may be the most helpful in reducing the number of sex partners.

2. Materials and Methods

2.1. Transparency and Openness

The current study was preregistered prior to hypothesis testing: https://aspredicted.org/P11_YM6 (accessed on 8 March 2023). Below, we report how we determined sample size, all data exclusions, and all measures in the study; there were no experimental manipulations in this study [45]. An a priori power analysis indicated that at least 242 participants (due to an error, this is a deviation from the power analysis discussed in our preregistration) were required to detect a small–medium effect with 80% power. However, we recruited more participants to accommodate incomplete responses and participants who did not follow instructions, and to allow for smaller-than-anticipated effect sizes. We did not preregister an adjustment to $p$-values to control for inflated risk of Type 1 errors due to multiple tests. This will be discussed below after reporting the results of hypothesis tests. Data are not made publicly available due to the ethical concerns of sharing sensitive data without explicit consent to share [46].

2.2. Participants

Participants were recruited from venues such as Reddit, Facebook, Instagram, and our university’s undergraduate participant pool. Inclusion criteria were identifying as a woman and being at least 18 years old; 620 participants met inclusion criteria. Participants were excluded if they did not identify as a woman or if, at the end of the survey, they reported providing bogus answers; 469 women remained in the final sample. Participants reported themselves as: heterosexual/straight (55.9%), bisexual (29.2%), “something else” (8.5%), or gay/lesbian (6.4%); dating (41.2%), no sexual or romantic involvement (27.1%), sexually involved but not dating (17.5%), married or common-law (11.3%), or engaged (3.0%); White (78.9%), “other” (6.6%), Black or African-American (4.1%), Asian (3.8%), and American Indian or Alaskan Native (0.6%); and Not Hispanic or Latino (87.8%) or Hispanic or Latino (11.5%). Participants reported having some college, trade school, or an AA/AS degree (38.6%), a high school diploma (24.1%), a BS/BA (23.7%), a graduate degree (12.5%), or no high school diploma (11.1%). Mean age was 25.15 years ($SD = 9.5$, range $= 18–79$).
2.3. Measures

For all measures, item scores were averaged so that higher aggregate scores reflected higher levels of the construct. Below, Cronbach’s αs are from the current sample.

2.3.1. Affective Lability

The 18-item Affective Lability Scale—Short Form (ALS-SF; [12]) comprises three subscales assessing rapid changes from a state of euthymia to other emotional states: Anxiety/Depression (five items; α = 0.88), e.g., “Many times I feel nervous and tense and then I suddenly feel very sad and down”, Depression/Elation (eight items; α = 0.88), e.g., “I switch back and forth between being extremely energetic and having so little energy that it’s a huge effort just to get where I am going”, and Anger (five items; α = 0.87), e.g., “Frequently, I will be feeling OK but then I suddenly get so mad that I could hit something”. Responses were given on a scale from 1 (very undescriptive) to 4 (very descriptive). For the full scale, Cronbach’s α = 0.92.

2.3.2. Boredom Proneness

The eight-item Boredom Proneness Scale—Short Form (BPS-SF; [47]) assessed the tendency to experience boredom, e.g., “I often find myself at ‘loose ends’, not knowing what to do”. Responses were given on a scale from 1 (strongly disagree) to 7 (strongly agree). Cronbach’s α = 0.89.

2.3.3. Trait Mindfulness

The 24-item Five Facet Mindfulness Questionnaire—Short Form (FFMQ-SF; [48]) comprises five subscales assessing the ability to attend to and describe present thoughts, feelings, and sensations without judgement: Observe (four items; α = 0.71), e.g., “I notice the smells and aromas of things”, Describe (five items; α = 0.85), e.g., “I’m good at finding the words to describe my feelings”, Acting with Awareness (five items; α = 0.84), e.g., “I find myself doing things without paying attention”, Nonjudging of Inner Experience (five items; α = 0.86), e.g., “I disapprove of myself when I have illogical ideas”, and Nonreactivity to Inner Experience (five items; α = 0.77), e.g., “I watch my feelings without getting carried away by them”. We confirmed the three-factor structure of the ALS-SF and five-factor structure of the FFMQ-SF using principal axis factor analysis with oblique rotation. Responses were given on a scale from 1 (never or very rarely true) to 5 (very often or always true). For the full scale, Cronbach’s α = 0.84.

2.3.4. Number of Sex Partners

Number of sex partners in the last year was assessed with a single question, “How many sex partners have you had in the last 12 months? For purposes of this study, sex is defined as vaginal, anal, or oral sex. If you are unsure, take your best guess” (modified from [49–51]).

2.4. Procedure

No identifying information was collected and informed consent was obtained at the beginning of the study. Participants provided demographic information and completed measures of affective lability, boredom proneness, trait mindfulness, number of sex partners in the last year, suicidal ideation, and alcohol use, in that order (the latter two measures were not relevant to our hypotheses and will not be discussed further). Participants from our undergraduate pool received course credit for participation. No other incentives were given. Mental health resources were provided at the end of the survey.

2.5. Analytic Strategy

Moderation was tested using PROCESS macro v4.3 with 5000 bootstrapped samples and heteroscedasticity-consistent standard errors [52]. Confirmatory (i.e., preregistered) tests entailed a total of 16 moderated regressions. First, one moderated regression was
conducted using total, aggregate scores on affective lability, boredom proneness, and mindfulness. Then, testing the same general three-way interaction hypothesis (i.e., affective lability × boredom × mindfulness), an additional 15 moderated regressions were conducted testing all possible combinations of individual subscales of affective lability and mindfulness (i.e., three affective lability subscales × five mindfulness subscales × one boredom proneness subscale = 15 moderated regressions).

Exploratory (i.e., post hoc) analyses comprised 26 moderated regressions to test all possible two-way interactions. First, three moderated regressions were conducted using total, aggregate scores on affective lability, boredom, and mindfulness. Then, testing all other two-way interactions, 23 analyses used individual subscale combinations (i.e., three affective lability subscales × one boredom proneness subscale; three affective lability subscales × five mindfulness subscales; and one boredom proneness subscale × five mindfulness subscales). Significance tests for moderation were based on 95% bootstrapped percentile confidence intervals (CIs). Moderation is significant if the CI for the respective interaction term excludes zero [52].

In the first step of all regression models, possible confounding effects of marriage status (married and engaged vs. not married or engaged) were controlled for, since research indicates marriage is associated with both emotion regulation [53] and number of sex partners [54]. Age was also controlled for because it has been found to be associated with both affective lability [55,56] and number of sex partners [57]. Whether an individual reporting having sex with people of any gender or only one gender was controlled for, since research suggests that having sex with more than one gender is associated with BPD-related traits [58,59] and also a higher number of sex partners [60,61]. Four outlying high scores on number of sex partners were Winsorized to not exceed three standard deviations from the mean, which had no effect on the significance of any of the tests below. We report semi-partial Pearson’s $r$ ($r_{sp}$) as a measure of effect size for regression coefficients [62].

3. Results
3.1. Descriptive Statistics

Means, standard deviations, and Pearson’s $r$ correlations for all key variables are presented in Table 1. Boredom proneness and the Anger subscale of the ALS-SF were positively associated with number of sex partners. The Act with Awareness subscale of the FFMQ-SF was negatively associated with number of sex partners.

Table 1. Means, standard deviations, and Pearson correlations for key variables.

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<tr>
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<th>10</th>
<th>11</th>
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<tbody>
<tr>
<td>Affective lability</td>
<td>2.43</td>
<td>0.66</td>
<td>0.85</td>
<td>0.90</td>
<td>0.78</td>
<td>0.63</td>
<td>−0.58</td>
<td>0.19</td>
<td>−0.41</td>
<td>−0.59</td>
<td>−0.51</td>
<td>−0.30</td>
<td>0.09</td>
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<td>Anxiety/depression</td>
<td>2.62</td>
<td>0.81</td>
<td>0.67</td>
<td>0.54</td>
<td>0.53</td>
<td>−0.58</td>
<td>0.14</td>
<td>−0.39</td>
<td>−0.52</td>
<td>−0.49</td>
<td>−0.36</td>
<td>0.05</td>
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<tr>
<td>Depression/elation</td>
<td>2.59</td>
<td>0.73</td>
<td>0.53</td>
<td>0.57</td>
<td>−0.50</td>
<td>0.20</td>
<td>−0.38</td>
<td>−0.57</td>
<td>−0.45</td>
<td>−0.17</td>
<td>0.07</td>
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<tr>
<td>Anger</td>
<td>1.99</td>
<td>0.82</td>
<td>0.49</td>
<td>−0.41</td>
<td>0.12</td>
<td>−0.26</td>
<td>−0.38</td>
<td>−0.36</td>
<td>−0.28</td>
<td>0.11</td>
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<tr>
<td>Boredom proneness</td>
<td>3.84</td>
<td>1.38</td>
<td>−0.63</td>
<td>−0.01</td>
<td>−0.49</td>
<td>−0.63</td>
<td>−0.40</td>
<td>−0.26</td>
<td>0.15</td>
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<tr>
<td>Mindfulness</td>
<td>3.06</td>
<td>0.51</td>
<td>0.28</td>
<td>0.70</td>
<td>0.70</td>
<td>0.66</td>
<td>0.58</td>
<td></td>
<td>−0.05</td>
<td></td>
<td></td>
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<tr>
<td>Observe</td>
<td>3.61</td>
<td>0.81</td>
<td>0.12</td>
<td>−0.07</td>
<td>−0.11</td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.06</td>
</tr>
<tr>
<td>Describe</td>
<td>3.21</td>
<td>0.91</td>
<td>0.40</td>
<td>0.27</td>
<td>0.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>−0.06</td>
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### Table 1. Cont.

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<th></th>
<th>M</th>
<th>SD</th>
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<tbody>
<tr>
<td>9.</td>
<td>Acting with awareness</td>
<td>2.95</td>
<td>0.85</td>
<td>0.42</td>
<td>0.23</td>
<td>−0.12</td>
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<tr>
<td>10.</td>
<td>Nonjudging of inner experience</td>
<td>2.86</td>
<td>0.91</td>
<td></td>
<td>0.25</td>
<td>−0.03</td>
<td></td>
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<tr>
<td>11.</td>
<td>Nonreactivity to inner experience</td>
<td>2.77</td>
<td>0.75</td>
<td></td>
<td></td>
<td>0.03</td>
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<tr>
<td>12.</td>
<td>Number of sex partners in last 12 months</td>
<td>2.09</td>
<td>2.90</td>
<td></td>
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Note. *p < 0.05. **p < 0.01. ***p < 0.001. Ns = 466–468.

### 3.2. Confirmatory (Preregistered) Analyses

None of the 16 three-way interactions testing our a priori hypotheses (i.e., one regression using total, aggregate scores for affective lability, boredom proneness, and mindfulness; 15 regressions using all individual subscale combinations of affective lability and mindfulness) were significant (see Tables S1–S16).

### 3.3. Exploratory (Not Preregistered) Analyses

Only one of the 26 exploratory tests of the two-way interactions was significant: higher Depression/Elation was associated with a greater number of sex partners, especially at low levels of Observe (see Figure 1, Table 2; for the sake of brevity, we do not present tabled results of the 25 non-significant two-way interaction tests). In other words, among women who reported rapid changes between depression and elation, women who were less likely to observe their thoughts and sensations had more sex partners in the last year. As noted above, we did not preregister adjustment to p-values to control for inflated risk of Type 1 errors due to multiple tests. If we adopt a criterion of p < 0.01, this result would be significant. If we use a Bonferroni correction, this result would not be significant. Regardless, it is not possible to adjust alpha to compensate for the increased probability of Type I errors since exploratory analyses consist of an indeterminate number of tests (and making such adjustments increases the risk of Type II errors; [63]). Thus, this result should be considered with caution and requires replication.

### Table 2. Moderated regression predicting number of sex partners from Depression/Elation and Observe with Age, Marital Status, and Sex with any Gender as covariates.

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>p</th>
<th>95% CI for B</th>
<th>r_{sp}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>−0.01</td>
<td>0.01</td>
<td>0.50</td>
<td>−0.04 to 0.02</td>
<td>−0.02</td>
</tr>
<tr>
<td>Married †</td>
<td>−0.03</td>
<td>0.44</td>
<td>0.94</td>
<td>−0.90 to 0.84</td>
<td>−0.01</td>
</tr>
<tr>
<td>Sex with any gender †</td>
<td>1.24</td>
<td>0.40</td>
<td>0.002</td>
<td>0.45 to 2.03</td>
<td>0.17</td>
</tr>
<tr>
<td>Depression/elation</td>
<td>2.08</td>
<td>0.70</td>
<td>0.003</td>
<td>0.70 to 3.47</td>
<td>0.03</td>
</tr>
<tr>
<td>Observe</td>
<td>1.50</td>
<td>0.58</td>
<td>0.01</td>
<td>0.36 to 2.64</td>
<td>0.04</td>
</tr>
<tr>
<td>Depression/elation × observe</td>
<td>−0.53</td>
<td>0.20</td>
<td>0.01</td>
<td>−0.93 to −0.13</td>
<td>−0.11</td>
</tr>
</tbody>
</table>

Note: † Married coded 1, all other relationship statuses coded 0; sex with any gender coded 1, all other options coded 0. The two-way interaction accounted for 1.28% of the variance, ΔR^2 = 0.0128. N = 452. Effect size r_{sp} is the semi-partial Pearson correlation.
In an online sample of 469 adult women, we did not find support for our preregistered hypotheses that affective lability would be associated with more sex partners in the last year, especially for women high on boredom proneness and low on mindfulness. Next, we speculate as to why these hypotheses were not supported despite being adequately powered and offer recommendations for future investigations of related topics.

First, instead of boredom proneness, perhaps sensation seeking would have been more likely to interact with affective lability in predicting number of sex partners. Despite previous research suggesting that boredom proneness is associated with hypersexuality [44], boredom proneness has been described as an ambiguous construct [64] and conceptualized broadly as the tendency to feel bored across different situations [47]. In contrast, some work has conceptualized boredom as being closely related to sensation seeking (e.g., [65]).

We speculate that sensation seeking may be more relevant to our theorizing that affectively labile women may impulsively use stimulating activity to regulate emotions and avoid the aversiveness of boredom. In other words, the urge to seek out casual, impulsive sex may be fueled by the desire for novel and intense experiences or sensations. For example, Zuckerman [66] defines sensation seeking as “the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences”, and numerous studies suggest that sensation seeking may motivate engagement in casual and risky sex (e.g., [67]).

For instance, the Boredom Susceptibility subscale of the Sensation Seeking Scale assesses the degree to which an individual seeks out stimulating activity to avoid boredom [66] rather than a general tendency to feel bored [47]. In future research, this scale could be used to investigate whether this particular aspect of boredom increases the likelihood that affectively labile individuals engage in impulsive sex. Moreover, the Boredom Proneness Scale might be more relevant to internalizing concerns (e.g., depression), whereas the Boredom Susceptibility subscale of the Sensation Seeking Scale might be more relevant to externalizing concerns (e.g., substance abuse; [68]), and, in turn, might better predict engagement in impulsive sex.

Figure 1. Simple slopes for predicting number of sex partners from Depression/Elation and Observe.

4. Discussion

Figure 1. Simple slopes for predicting number of sex partners from Depression/Elation and Observe.
Another reason for the lack of support for our preregistered hypotheses may be due to our operationalization of our outcome variable as participants’ number of sex partners rather than impulsive sex specifically. Our theorizing was that affective lability and boredom proneness motivate the pursuit of sex to assuage the aversiveness of those emotional states. For instance, research suggests that higher affective lability and boredom proneness are associated with greater impulsivity \cite{16,27}, and lower trait mindfulness is related to higher impulsivity \cite{35}. Further to this point, it should be noted that most of our sample reported fewer than two sex partners in the last year (i.e., 21% had no sex partners, and 45% had one sex partner). However, it is possible these individuals with few or no sex partners pursued or engaged in sexual activity in an impulsive manner (e.g., hooking up but not engaging in penetrative sex, or impulsively engaging in sex just a few times), and the impulsiveness of that sort of sexual behavior would not have been captured by merely asking about number of sex partners. For example, some individuals might engage in impulsive sex infrequently, just as some individuals might engage in frequent sex with many different partners in a manner that is not impulsive.

One possible way to capture impulsive sex is with a measure of out-of-control sexual behavior. For example, the Compulsive Sexual Behavior Disorder Scale (CSBD-19; \cite{69}) contains five subscales assessing compulsive sex urges and behaviors in the last six months and aligns with the ICD-11 diagnostic guidelines for CSBD \cite{70}. Rather than asking about number of sex partners, this measure focuses on lack of control over sexual urges and its interference in daily life, which may be more relevant to our theorizing. Another approach would be to operationalize impulsive sex in terms of sexual risk-taking. For example, the Sexual Risk Survey takes a multifaceted approach and includes five subscales assessing risky sex in the past six months (SRS; \cite{71}). In addition to number of sex partners, this measure includes questions about condom usage, sex with high-risk partners, intent to have sex, and impulsive sexual behaviors. For instance, this measure asks about unexpected and regretted sexual encounters, which may explain impulsive sex not solely defined by number of sex partners.

Another line of speculation as to why we did not find support for our hypotheses might be because our theorizing about the protective role of mindfulness was incorrect. We originally theorized that trait mindfulness promotes healthy emotion regulation among people who are affectively labile and boredom-prone, and thus reduces impulsive sex. However, perhaps mindfulness reduces affective lability and the aversiveness of boredom, rather than improving the ability to cope with affective lability and boredom. If mindfulness reduces these aversive states rather than making these aversive states easier to deal with, then our hypothesized three-way interactions would not have been supported. Future research should evaluate whether administering a mindfulness intervention may enable learning techniques that reduce rapid mood changes and boredom, and, in turn, reduce impulsive sex.

Exploratory (i.e., not preregistered) analyses revealed that Depression/Elation (i.e., rapid change between depression and elation) was associated with a greater number of sex partners, especially among individuals low on Observe (i.e., the tendency to observe present thoughts, feelings, and sensations). This aligns with previous literature suggesting that people who are affectively labile may use sex to regulate negative emotions \cite{24}. Therefore, people who are affectively labile may benefit from interventions related to safer sex practices \cite{72}. In addition, our finding that a facet of mindfulness may reduce engagement in high-risk sex aligns with previous research regarding the negative association between mindfulness and hypersexuality \cite{43,44}. Thus, in a clinical setting, mindfulness interventions may help reduce compulsive sexual behavior and may enhance empirically supported treatments for compulsive sexual behavior, such as cognitive behavioral therapy \cite{73}.

Further, our finding that Observe was associated with fewer sex partners among people who are affectively labile may indicate that this specific facet of mindfulness may reduce the maladaptive use of sex to assuage negative emotional states. In fact, some research suggests that the tendency to observe internal and external experiences is the
The very core of mindfulness [74]. The other facets of mindfulness, which include describing thoughts and feelings, acting with conscious awareness, letting go of judgments, and allowing thoughts to come and go without reacting, were not found to be significant moderators of associations between affective lability and the number of sex partners in any of our analyses. This may suggest that the tendency to observe thoughts and sensations may be the component of mindfulness that reduces impulsive sexual behavior.

Although our findings suggest that the tendency to observe thoughts and sensations may help reduce the number of sex partners and associated risks, it is important to discuss the possible limitations of our assessment of mindfulness and, specifically, the Observe subscale. Previous research yields conflicting findings regarding the Observe subscale of the FFMQ, sometimes revealing that Observe is associated with higher rather than lower levels of psychological symptoms, dissociation, and thought suppression [75,76]. This may be explained by the notion that self-focused attention can be either adaptive or maladaptive; that is, excessive focus on depressive thoughts and feelings may maintain negative thinking and depression [77], and may become adaptive only after more experience practicing mindfulness [75].

Furthermore, previous literature suggests questionable adequacy of the factor structure of the FFMQ. For example, confirmatory factor analyses revealed that a four-factor structure (i.e., excluding Observe) may provide a better fit [78]. Therefore, due to issues with the latent structure of the FFMQ, researchers should be cautious when using this measure in future investigations. Accordingly, due to the possible flaws of the FFMQ stated above and since this significant finding was only one among 26 exploratory tests, this exploratory finding might reflect a Type 1 error (i.e., incorrect rejection of the null hypothesis), and should be viewed with caution and confirmed by future research.

This study had a number of limitations. Most study participants were White and under 25 years old. Future studies should aim to recruit a more diverse sample to help increase the generalizability of our findings. Additionally, although we controlled for marital status, 41% of our participants were in dating relationships, which, if monogamous, would lower the likelihood of having a greater number of sex partners. Moreover, 27% of our participants reported not being sexually involved at all when asked about relationship status and thus may have restricted variance on our outcome measure. Furthermore, our survey did not ask if participants’ gender differed from sex assigned at birth, which precluded exploring whether this could have interacted with our predictors; this should be considered in future investigations of these processes. In addition, because our sample included only women, it is unclear to what extent our findings extend to men. Though the risks associated with multiple casual partners may differ for men, men are at greater risk of CSBD than women [69]; accordingly, future research should aim to explore these associations among men.

As noted above, our exploratory finding that rapid change between depression and elation was related to a greater number of sex partners, especially for those who were less likely to observe thoughts and sensations, was one of 26 post hoc (i.e., not preregistered) tests, and, since exploratory analyses consist of an indeterminate number of tests, it was not possible to adequately adjust for inflated risk of Type I errors [63]. Therefore, this finding should be viewed with caution and needs replication. Last, cross-sectional data preclude drawing causal conclusions. For example, experimental manipulation of affective lability, boredom, and mindfulness would be needed to confirm that high affective lability leads to an increased number of sex partners among boredom-prone women who are low on Observe.

This study did not support our hypotheses that high affective lability is associated with a greater number of sex partners in the last year, especially for women high on boredom proneness and low on mindfulness. Exploratory analyses revealed that, among women with rapid changes between depression and elation, those who were less likely to observe thoughts and sensations were more likely to have a greater number of sex partners, but this finding needs replication. Clinicians and researchers should further examine the role of
mindfulness and which facets may be the most effective in reducing number of sex partners and associated risks. Moreover, future research should assess impulsive sex directly to better understand the role of mindfulness in reducing urges to seek sex to cope with rapid mood fluctuations. Lastly, future research should examine impulsive sex in the context of other psychiatric disorders such as psychotic spectrum disorders, which have been linked to both affective lability and risky sexual behavior [79–81].

**Supplementary Materials:** Tables S1–S16 are available online: https://osf.io/7xwv/ (accessed on 26 March 2024).

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