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Conceptualizing Sexual Pleasure at Home as a Work-Related Stress Recovery Activity

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ABSTRACT

Job stress is pervasive in today's workforce and has negative implications for employees' mental and physical well-being and job performance. Recovery activities outside of work can reduce strain and improve work outcomes; however, little is known about pleasurable intimate recovery experiences and their influence on work outcomes, even though these experiences are important parts of most people's lives outside of work. The present study examined sexual activity that is shared either with a relationship partner or oneself (masturbation) and how pleasure specifically predicts well-being and work outcomes to induce recovery. Results suggest that pleasurable sexual activity, with a partner or alone, is related to perceived recovery from work stress, job satisfaction, work engagement, and life satisfaction. Moreover, perceived recovery from work mediated the relationship between pleasurable sex and work outcomes. Gender moderated this relationship such that pleasurable sex was a stronger predictor of recovery for women (compared to men) in the context of sex within committed relationship partners (but not masturbation). Theoretical and practical implications are discussed.

Globalization, recent advancements in technology, and the COVID-19 pandemic have contributed to work and nonwork boundaries becoming more permeable, accompanied by an increased expectation of employee flexibility and availability (Derks et al., 2015; Idris et al., 2011). As a result, employees now work more nontraditional hours instead of spending time on leisure activities that promote recovery from job-related stress (Suleiman et al., 2021). Prolonged exposure to work demands increases risk for employee stress, burnout, and turnover (Demerouti et al., 2004; Garst et al., 2000); however, participation in recovery experiences can buffer against these negative outcomes (Sonnentag et al., 2017). Indeed, recovery from work is known to increase job satisfaction (Rodríguez-Muñoz et al., 2018), work engagement (Sonnentag, 2003), and life satisfaction (Sonnentag & Fritz, 2007).

Although previous research has identified various activities that promote recovery (Mojza et al., 2011; Tuisku et al., 2016; van Hooff et al., 2011), there is a paucity of studies that have investigated sexual activity as a recovery intervention. Past recovery research has suggested that people who engage in leisure activities that are social, physical, low activity (passive), and non-work related – either alone or with relationship partners – experience recovery from work stress and positive work outcomes (Hahn et al., 2012; Sonnentag, 2001). Further, the experience of pleasure, often associated with sex, is positively related with recovery from work (van Hoof, 2011). Sexual activity is a notable exclusion from the recovery literature given the strong association between sex and pleasure and the relative importance of intimate relationships and sexual activity in most peoples' lives (Meston & Buss, 2007; Pinkerton et al., 2003). Across 59 countries, a greater proportion of adults were married and monogamous compared to those who were single (Wellings et al., 2006), and 66% of adults across 26 countries viewed sex as important for health and well-being (Wylie, 2009). Additionally, 56% of American adults are married or in committed relationships (Rainie & Madden, 2005) and engage in sexual behavior with their partner about 54 times per year (Twenge et al., 2017). Furthermore, 91% of American adults aged 20–24 and 94% of American adults aged 25–29 report engaging in masturbation (Herbenick et al., 2010). These sexual activities are associated with pleasure and can reduce stress and enhance well-being for both couples (Debrot et al., 2017; Ein-Dor & Hirschberger, 2012) and those who masturbate alone (Levin, 2007).

The current study examined whether sex that is pleasurable promotes recovery from work stress. We focused on the importance of sexual pleasure for recovery gains both within relationships and in masturbatory contexts by selecting recovery outcomes commonly used in previous research: job satisfaction, work engagement, and life satisfaction. Additionally, we explored the moderating role of gender in the relations between sex, recovery states, and job and life outcomes to better understand the influence of gender differences on pleasurable sexual activity and recovery. In the context of our study, we refer to gender as a social construct that is determined by one's own perceived gender identity and expression, rather than physical characteristics or biological markers. We further discuss gender theory and past research to understand gender differences and their effect on sexual activity. In the discussion that follows, we develop our hypotheses by reviewing the literatures related to work recovery, sexual pleasure, and gender, and then describe our methods and results of our inquiry. We focus our examination on partnered sex on heterosexual couples as an initial investigation of these relationships.

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Recovery from Work Stress

Fast-paced and dynamic workplaces demand that employees give increasing energy and attention to their work tasks. These sustained work demands deplete employees' cognitive and physical resources, which provokes psychological and physical fatigue (Sluiter et al., 2003) and makes it difficult for employees to meaningfully engage in nonwork activities (Geurts & Demerouti, 2003). Moreover, demands in an employee's work domain make it difficult to fulfill nonwork requirements (e.g., family roles, extracurricular activities; Ilies et al., 2007). Recovery activities during nonwork time can reduce conflict between work and nonwork domains by replenishing affective and energetic resources (e.g., mood, vitality) and improving job performance after stressful work experiences (De Bloom et al., 2015; Meijman & Mulder, 1998). Recovery from work involves engaging in leisure activities during nonwork time without interference from active job demands to restore one's cognitive and physical energy (Sonnentag, 2001). Indeed, successful recovery efforts promote a positive subjective recovery state (the personal feeling of being mentally and physically refreshed; Binnewies et al., 2010; Sonnentag & Geurts, 2009; Tuisku et al., 2016), which allows employees to improve outcomes with their work (e.g., work engagement; Sonnentag, 2003) and nonwork domains (e.g., life satisfaction; Park & Fritz, 2015).

Recovery activities are often divided into different categories (i.e., psychological detachment, mastery, relaxation; Sonnentag & Fritz, 2007). However, personal evaluations of the recovery activity are often neglected in research. Specifically, pleasure – a state or feeling of happiness resulting from an experience that one enjoys – associated with the recovery activity should be considered important for reaping the benefits of recovery (van Hooff et al., 2011; 2017). We focus on the role of pleasure during recovery activities because of its function in the brain's "pleasure reward" system that regulates the stress response (Esch et al., 2004; Esch & Stefano, 2004). Pleasurable activities trigger dopaminergic signaling that help regulate stress hormones (e.g., cortisol; Esch & Stefano, 2010) and produce a calming effect, aiding relaxation and improving mood (Esch & Stefano, 2004). Experienced pleasure can also boost cognitive function (i.e., memory, concentration; Esch & Stefano, 2010) and promote successful stress management (Esch & Stefano, 2004). Additionally, Fredrickson's (2001) broaden-and-build theory posits that positive emotions and experiences (i.e., pleasure; Esch & Stefano, 2004; Seligman, 2002) can undo the effects of negative emotions and restore positive emotions. Therefore, we contribute to research on the importance of pleasure for feeling recovered from work by selecting a recovery activity for which pleasure is paramount: sexual activity.

The Role of Sexual Pleasure in Recovery from Work Stress

Contemporary Western culture characterizes sexual activity as a highly pleasurable and enjoyable endeavor in which anyone can take part (Brecher, 1977). Indeed, sexual pleasure is one of the highest ranked reasons for engaging in sexual activity (Meston & Buss, 2007) and contributes to overall sexual satisfaction (i.e., the affective response from the subjective evaluation of both positive and negative dimensions of sexual relationships; Byers, 1999; Stephenson et al., 2011). In line with past research, we define sexual pleasure as the positive feelings that arise from sexual stimuli associated with a variety of activities involving sexual arousal, genital stimulation, and/or orgasm (Abramson & Pinkerton, 1995; Rye & Meaney, 2007). We also note that sex is not always pleasurable; non-consensual, painful, or obligatory sex yield different outcomes related to psychological and physical well-being (Cheng & Smyth, 2015; Philpott et al., 2021). Accordingly, we focus our efforts on understanding how the perceived pleasure associated with sex affects well-being by way of recovery, rather than the mere frequency of sexual activity.

Indeed, sexual pleasure boosts well-being through both physiological and psychological processes. First, pleasurable sex restores physical resources through physiological changes in the body including the release of prolactin, oxytocin, serotonin, testosterone (in male bodies), and dopamine (Brecher, 1977; Komisaruk et al., 2006; Levin, 2007; Oti et al., 2021). These hormones and neurotransmitters then contribute to the calming, mood enhancing, and stress relieving effects of sexual activity (Carmichael et al., 1994; Komisaruk et al., 2006; Levin, 2007) and improve cognition (Berridge & Kringelbach, 2011). Additionally, these biological processes regulate physical health by lowering blood pressure, improving sleep, and decreasing heart rate (Brecher, 1977; Levin, 2007). Second, sexual pleasure improves well-being through psychological processes. Sexual pleasure promotes happiness and positive affect (Blanchflower & Oswald, 2004; Cheng & Smyth, 2015), elevates quality of life (Anderson, 2013; Debrot et al., 2017), increases self-esteem (Anderson, 2013; Bowman, 2013), and reduces stress (Komisaruk et al., 2006). Additionally, sexual pleasure encourages relationship health which furthers the positive psychological effects of sexual pleasure on well-being (Byers & Rehman, 2014; Christopher & Sprecher, 2000; Debrot et al., 2017; Karney & Bradbury, 1995). The combined physiological and psychological effects of pleasurable sexual activity suggest that it is an advantageous well-being phenomenon that is useful for recovery.

Although there is a strong relationship between pleasurable sex and individual well-being outcomes, the impact of sexual pleasure on work has yet to be examined. Instead, there is a collection of research focused on romantic partnerships as a promoter of recovery from work. For example, Hahn et al. (2012) discovered that time spent with a heterosexual romantic partner during nonwork hours promoted relaxation and positive affect. Further, Park and Fritz (2015) found that heterosexual couples who supported their partners' recovery by making opportunities for them to relax and forget about work experienced relaxation and life satisfaction. There is also emerging research concerning the impact of sex on work; however, it has relied on measuring the frequency of sex. For instance, Leavitt et al. (2019) found that positive affect mediated the positive relationship between the frequency of sex among married heterosexual, gay, and bisexual couples and their levels of job satisfaction and work engagement. Although this work highlights the importance of relationships and sexual

activity outside of work, it omits the individual's appraisal of the pleasure associated with sexual activity.

We posit that pleasurable sex is a direct promoter of recovery from work and well-being because it replenishes psychological and cognitive resources, according to the effort-recovery model (E-R Model; Meijman & Mulder, 1998; Sonnentag & Fritz, 2007) and conservation of resources theory (COR; Hobfoll, 1998). The E-R Model asserts that time away from work demands during post-work hours returns the body and mind to equilibrium after stress systems have been activated. Further, COR theory (Hobfoll, 1998) posits that the restoration of lost or threatened resources is attained by engaging in activities where one can gain resources such as feelings of self-efficacy and positive affect. In the context of sexual activity, both the E-R Model and COR theory suggest that sexual activity within romantic relationships involves devoting energy to seeking pleasurable experiences with one's partner that lead to feeling relaxed and refreshed. Indeed, a person's evaluation of their experience matters to recovery (Demerouti et al., 2009; Sonnentag & Fritz, 2007), particularly a sense of enjoyment (van Hooff et al., 2011). Sexual pleasure represents a unique opportunity to understand the influence of individual evaluation.

Recovery State as a Mediator between Sexual Pleasure and Well-Being

Past research confirms that recovery states (i.e., feeling mentally and physically replenished) promote several well-being outcomes for employees across work and nonwork domains. These recovery states are typically measured by assessing how rested and recovered a person feels after the event occurs, such as after vacations (Westman & Eden, 1997), during free evenings (Sonnentag, 2001), and after other recovery experiences (Sonnentag & Geurts, 2009). We posit that individuals will experience a state of recovery as a result of experiencing pleasure within sexual activity. Further, we expect that feeling recovered is directly linked with positive work and life outcomes (i.e., job satisfaction, work engagement, and life satisfaction; Sonnentag & Geurts, 2009; Tuisku et al., 2016). As such, we predicted the following:

Hypothesis 1: There will be indirect effects of pleasure with romantic partner sex on job satisfaction (H1a), work engagement (H1b), and life satisfaction (H1c) through recovery states, such that those who have high levels of sexual pleasure with romantic sex will have better work outcomes due to their increased recovery states.

In the past, researchers have limited their understanding of sexual activity to be within romantic partnered relationships, particularly in the recovery literature (Leavitt et al., 2019; Ueda et al., 2020). We identify this as an important exclusion of other sexual activity, particularly solo masturbation (i.e., self-stimulation). Although generally considered taboo, masturbation results in several well-being outcomes, including positive emotions and feelings of relaxation (Fahs & Frank, 2014; Levin, 2007). Masturbation is novel and useful for understanding how employees' sexual pleasure influences recovery because many working individuals masturbate. Indeed, 78% of women and 91% of men in America report masturbating, and both single and partnered individuals masturbate (Delatto, 2019). Moreover, masturbation is related to sexual arousal and pleasure (Cervilla & Sierra, 2022; Levin, 2007; Pinkerton et al., 2003) and past findings suggest that masturbatory orgasms, a strong indicator of sexual pleasure, can be greater in intensity physiologically than those achieved during partnered sex (Mah & Binik, 2005; Masters & Johnson, 1966; Patterson et al., 2019). Thus, masturbation likely has an important and similar relationship to recovery states and job outcomes. As such, we predicted the following:

Hypothesis 2: There will be indirect effects of pleasure with masturbation on job satisfaction (H2a), work engagement (H2b), and life satisfaction (H2c) through recovery states, such that those who have high pleasure with masturbation will report better work outcomes due to their increased recovery states.

Potential Gender Differences

There are documented gender differences related to sexual experiences; however, gender differences have generally not been hypothesized when researching recovery experiences. Although Sonnentag (2003) found that men were generally less recovered compared to women, the relationship was found in post hoc analyses and the authors could only speculate on the cause. Research and theory related to sexual behavior, however, suggests that women and men may differ in the impact of sexual pleasure on one's feelings of recovery. Gender theories, such as social role theory (Eagly & Wood, 1999), suggest that gender differences in sexual behavior result from power and gender differences at societal levels. Traditionally, women's sexuality has been represented as fulfilling one of two purposes: reproduction or sexual pleasure for men (Bowman, 2013; Rich, 1980; Vance, 1992). This persistent cultural narrative regarding sex strongly influences heterosexual women's attitudes toward sexual pleasure such that they favor male partner's pleasure at the expense of their own (Reis et al., 2021). Although women's capacity for sexual pleasure is the same as men's (Abramson & Pinkerton, 1995), obstacles to sexual pleasure are greater for women for physical and psychosocial reasons. For instance, women can experience more pain compared to men during penile-vaginal sex (Carter et al., 2019; Klein et al., 2022), more negative affect during sex (Morokoff & Gillilland, 1993), and a higher likelihood of experiencing coercion, violence, and non-consensual sex in sexual encounters compared to men (Klein et al., 2022; World Health Organization, 2013).

Consequently, sexual pleasure may also be more essential for women to overcome challenges associated with having a positive sexual experience. Indeed, sexual pleasure seems to play a more prominent role in fostering outcomes associated with well-being for women compared to men, including happiness (Cheng & Smyth, 2015), physical health (Palmore, 1982), sexual satisfaction (Kontula, 2009; Stephenson et al., 2011; Waterman & Chiauzzi, 1982), and sexual health (Klein

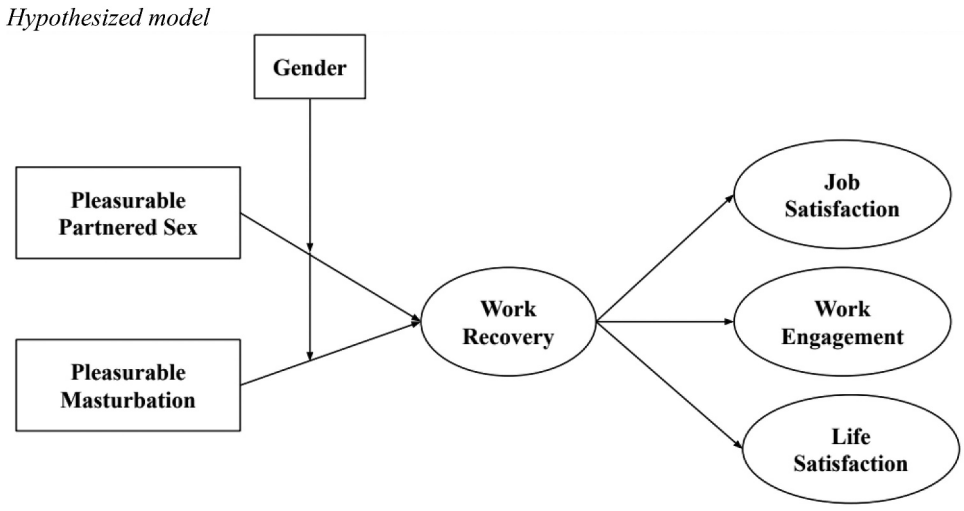

Figure 1. Hypothesized model.

et al., 2022). Additionally, a large-scale study of gay and heterosexual women concluded that orgasms, a strong indicator of sexual pleasure for women (Kontula, 2009), were the single most important predictor of sexual satisfaction (Kontula, 2009). For men, however, valuing sex highly was more related to their satisfaction. Therefore, men may be more sexually satisfied by the act of sex rather than orgasm (Kontula, 2009) and other evidence suggests that frequency of sex is more important for men's well-being than pleasure (Cheng & Smyth, 2015).

In summary, since sexual pleasure promotes relaxation and stress reduction (Brecher, 1977; Komisaruk et al., 2006), and women seem to benefit from sexual pleasure more than men, it is likely that pleasure will be more essential for experiencing recovery compared to men. For men, pleasure during sex may be less meaningful to recovery because of the relative ease and frequency in which sexual gratification and relatedly, a sense of pleasure is achieved (Kontula, 2009; Rye & Meaney, 2007). Therefore, the impact of sexual pleasure is likely to be stronger for women. As such, we predicted the following:

Hypothesis 3: The indirect relationships between pleasure with relationship sex and job satisfaction (H3a), work engagement (H3b), and life satisfaction (H3c) will be stronger for women than for men.

Although women and men report similar frequencies of masturbation (Herbenick et al., 2010), their motivations for engaging in masturbation may be different. Bowman (2013) found that women engaged in masturbation for five main reasons: sexual pleasure, to better understand their bodies, as a release, to substitute for partnered sex, and because of general sexual dissatisfaction, with sexual pleasure being the highest rated. Conversely, Janssen et al. (2008) and Carvalheira et al. (2015) found that men engaged in masturbation for reasons associated with boredom, needing a release, or wanting a "reset" to get out of a funk. Masturbation may provide a context in which a woman's potential for and desire for pleasure, and related well-being outcomes, can be more easily realized than in the context of heterosexual sex (Abramson & Pinkerton, 1995; Rye & Meaney, 2007). Indeed, women are more likely to consistently achieve orgasm, a strong indicator of sexual pleasure for women (Kontula, 2009), when masturbating than they are in the context of partnered sexual activity (Goldey et al., 2016). In fact, women reported greater orgasmic intensity and affective reward after masturbating then men (Cervilla & Sierra, 2022). Thus, it stands to reason that because sexual pleasure is a primary reason why women masturbate, it may be more important for women compared to men to feel recovered and gaining the resultant benefits may be more dependent on pleasure for women compared to men. As such, we predicted the following:

Hypothesis 4: The indirect relationships between pleasure with masturbation and job satisfaction (H4a), work engagement (H4b), and life satisfaction (H4c) will be stronger for women than for men.

In sum, the current study was designed to determine if sexual pleasure, both within relationships and masturbation, promotes recovery states for employees. Moreover, we examine the indirect effect of sexual pleasure on well-being outcomes via positive recovery states: job satisfaction, work engagement, and life satisfaction. We then provide further context for this relationship by examining differences among women and men. See Figure 1 for a visual depiction of our hypotheses.

Method

Participants and Procedure

We recruited 1,280 participants using Amazon's Mechanical Turk (MTurk; see Feitosa et al., 2015; Smith et al., 2016) to complete a questionnaire using Qualtrics, an online survey platform. Participants were compensated $0.25 USD for their time. We removed 601 participants due to careless responding. Criteria for deletion included two or more missed attention checks and participants with enough missing data to preclude hypothesis testing. We also focused our initial investigation on

heterosexual participants.[1] Participants were included in a particular analysis if they participated in that behavior (sex in relationship, n = 679; masturbation, n = 497). We defined "partnered sex" for participants as "physical intimacy that includes any form of genital contact with a partner that is physically present (not virtual)" and we defined "masturbation" as "arousing physical genital contact without a partner involved." We formed these definitions based on common understanding of sexual behavior, specifically as it relates to pleasure (Abramson & Pinkerton, 1995; Philpott et al., 2006; Reis et al., 2021). The sample was 45% male and ages ranged between 18 to 77 years old (M = 36.61, SD = 11.10). Among the participants, 7% were Hispanic/Latinx, 10% were African American, 9% were Asian, 77% were Caucasian, and 3% were from other racial/ethnic groups. All participants reported being employed at least part-time. Additionally, 70% of women and 83% of men reported masturbating in the past month.

After consenting to participate in the study, participants were directed to complete a questionnaire asking them about their sexual activity within relationships and masturbatory contexts in the past month. We can surmise that these activities were not taking place at work because we asked questions such that work was separate from sexual activity. Finally, participants provided demographic information including age, gender identity, and race/ethnicity.

Measures

For all items, except demographics, participants were asked to indicate "the extent to which you agree" on a 7-point Likert-type scale ranging from "Not at all agree" (1) to "Completely agree" (7). Scale anchors were slightly modified to be in the same response format to maintain consistency throughout the survey and to reduce confusion among participants. Participants were instructed to reference their own sexual experiences when answering the items.

Sexual Pleasure

Sexual pleasure in romantic relationships was measured with a single item: "My sexual experience has been pleasurable with my romantic partner(s) in the past month." Sexual pleasure with respect to masturbation was also measured with a single item: "My masturbation has been pleasurable in the past month." Past research has consistently measured sexual pleasure with single-item measures (Kashdan, 2007; Pinkerton et al., 2003; van Hooff et al., 2011), which are generally appropriate for global perceptions of phenomena (Youngblut & Casper, 1993).

Recovery State

Recovery state after sex was measured with a 4-item subjective recovery scale created by Binnewies et al. (2010; a = .91). Participants were prompted to indicate how they felt after engaging in sexual activity. Items included: "I feel physically refreshed," "I feel well-rested," "I feel energetic," and "I feel mentally recovered." Participants were instructed to respond with respect to their experiences related to partnered sex or masturbation, as appropriate.

Job Satisfaction

Job satisfaction was measured with the 3-item Michigan Organizational Assessment Questionnaire-Job Satisfaction (MOAQ-JSS; Bowling & Hammond, 2008; a = .84). Items included: "In general, I am satisfied with my job," "In general, I don't like my job (reverse scored)," and "In general, I like working at my job."

Work Engagement

Work engagement was measured with the 9-item Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006). The scale showed adequate reliability (a = .95). Items included: "When working, I have felt I was bursting with energy," "While working, I have felt strong and vigorous," "When I get up in the morning, I have felt like going to the space where I work," "My job has inspired me," "I have been enthusiastic about my job," "I have felt immersed in my job," "I have felt proud of the work that I do," I have felt happy when I am working intensely," "I have felt immersed in my job," and "I have gotten carried away when I am working."

Life Satisfaction

Life satisfaction was measured with the 5-item Satisfaction with Life Scale (SWLS; Diener et al., 1985; a = .93). Items included: "In most ways my life is close to my ideal," "The conditions of my life are excellent," "I am satisfied with my life," "So far I have gotten the important things I want in life," and "If I could live my life over, I would change almost nothing."

Results

Means, standard deviations, reliabilities, and correlations are presented in Table 1. To examine the proposed relations, we used structural equation modeling (SEM), following a two-step approach in which we first tested the measurement model followed by the structural model (Anderson & Gerbing, 1988). A confirmatory factor analysis indicated better fit to the data when the items were modeled onto their seven respective latent factors, $\chi^2(242) = 1{,}180.71$, $p < .001$, comparative fit index (CFI) = .92, Tucker-Lewis index (TLI) = .91, root-mean-square error of approximation (RMSEA) = .01, Akaike information criterion (AIC) = 44,996.19, compared with an alternative model that specified a single common factor, $\chi^2(252) = 6{,}513.14$, $p < .001$, CFI = .46, TLI = .42, RMSEA = .20, AIC = 50,290.63; $\Delta\chi^2(19) = 5{,}332.43$, $p < .001$, lending support for the seven-factor model (sexual pleasure within relationships, sexual pleasure with masturbation, recovery state for relationship sex, recovery state for masturbation, job satisfaction, work engagement, and life satisfaction).

Hypothesis 1 stated that there would be an indirect effect of pleasure with romantic partner sex on job satisfaction (H1a), work engagement (H1b), and life satisfaction (H1c) through recovery states. Using SEM, we entered partnered sexual

[1]A small portion (n = 60) of our sample reported being in a non-heterosexual relationships. We examined our hypotheses including and excluding these participants and found no difference in the pattern of results. However, the low statistical power inherent in these analyses preclude us from reporting them with confidence, so they have been omitted here.

Table 1. Means, standard deviations, reliabilities and correlations for all study variables.

Variables	*M*	*SD*	1	2	3	4	5	6	7	8
1. Gender	1.46	0.50	-							
2. Recovery State – Relationship Sex	4.78	1.62	.08*	(.91)						
3. Recovery State – Masturbation	4.63	1.50	−.18*	.38**	(.91)					
4. Pleasure with Relationship Sex	4.83	1.86	.01	.49**	.12**	-				
5. Pleasure with Masturbation	5.30	1.43	.25**	.20**	.54**	.22**	-			
6. Job Satisfaction	5.03	1.44	−.03	.20**	.21**	.15**	.20**	(.87)		
7. Work Engagement	4.13	1.40	−.04	.22**	.27**	.13**	.16**	.73**	(.94)	
8. Life Satisfaction	4.13	1.53	−.02	.20**	.29**	.24**	.23**	.44**	.49**	(.93)

M = mean, *SD* = standard deviation. Alpha reliabilities are presented on the diagonal in parentheses.

pleasure as the predictor, recovery states as the mediator, and job satisfaction, work engagement, and life satisfaction as correlated outcomes. This model displayed adequate fit to the data, $\chi^2(183) = 849.58$, $p < .001$, CFI = .94, TLI = .94, RMSEA = .07 and the indirect effects were significant. The path coefficients each support Hypothesis 1 (Table 2).

Hypothesis 2 stated that there would be an indirect effect of pleasurable masturbation on job satisfaction (H1a), work engagement (H1b), and life satisfaction (H1c) through recovery states. Using SEM, we entered masturbation pleasure as the predictor, recovery states as the mediator, and job satisfaction, work engagement, and life satisfaction as the outcomes. This model displayed adequate fit to the data, $\chi^2(183) = 733.44$, $p < .001$, CFI = .94, TLI = .93, RMSEA = .08 and the indirect effects were significant. The path coefficients each support Hypothesis 2 (Table 2)

Hypothesis 3 stated that the indirect effect of pleasure with romantic partner sex on job satisfaction (H1a), work engagement (H1b), and life satisfaction (H1c) through recovery states would be moderated by gender. Specifically, sexual pleasure is more important for recovery among women compared to men. Using SEM, we entered partnered sexual pleasure as the predictor, gender as a moderator on the "a" path, recovery states as the mediator, and job satisfaction, work engagement, and life satisfaction as the outcomes. This model displayed good fit to the data, $\chi^2(220) = 264.11$, $p < .05$, CFI = .99, TLI = .99, RMSEA = .02. The path coefficients each support Hypothesis 3 (Table 3). Simple slopes were computed to better understand the direction of the relationship (Figure 2). These results suggest that the indirect relationships between sexual pleasure and our outcomes were stronger for women than for men, supporting Hypothesis 3.

Hypothesis 4 stated that the indirect effect of pleasure with masturbation on job satisfaction (H1a), work engagement (H1b), and life satisfaction (H1c) through recovery states would be moderated by gender. Using SEM, we entered masturbation pleasure as the predictor, gender as a moderator on the "a" path, recovery states as the mediator, and job satisfaction, work engagement, and life satisfaction as the outcomes. Although model fit was adequate, $\chi^2(218) = 773.55$, $p < .001$, CFI = .94, TLI = .93, RMSEA = .09, the moderated indirect effects were not significant (Table 3). Thus, Hypothesis 4 was not supported, and simple slopes were not computed.

Discussion

Past research concerning work recovery has investigated various types of leisure activities to assess their value in fostering successful recovery (van Hooff, et al., 2011; Mojza et al., 2011; Tuisku et al., 2016). The current study extended this research by examining whether pleasurable sexual activity, when enjoyed during leisure time, is associated with recovery and well-being at work. Consistent with the tenets of the E-R Model and COR theory, our results indicate that sexual pleasure –

Table 2. Bootstrap (1,000 samples) mediation analyses for the effect of pleasurable sex (H1) and pleasurable masturbation (H2) on well-being and job outcomes through recovery state.

				Indirect Effect	
	Est. MX	Est. YM	Indirect Effect	LCL	UCL
Pleasurable Sex					
Job Satisfaction	0.57**	0.23**	0.13**	0.07	0.14
	(.04)	(.05)	(.03)		
Work Engagement	0.57**	0.21**	0.18**	0.11	0.19
	(.04)	(.04)	(.03)		
Life Satisfaction	0.57**	0.31**	0.12**	0.05	0.11
	(.04)	(.05)	(.02)		
Pleasurable Masturbation					
Job Satisfaction	0.57**	0.20**	.11*	0.08	0.18
	(.04)	(.05)	(.03)		
Work Engagement	0.57**	0.18**	0.16**	0.12	0.24
	(.04)	(.05)	(.03)		
Life Satisfaction	0.57**	0.28**	.10**	0.07	0.17
	(.04)	(.05)	(.03)		

Est. MX = estimate of the path from pleasurable sex or pleasurable masturbation to recovery state. Est. YM = estimate of path from recovery state to well-being and job outcomes. LCL = lower confidence limit. UCL = upper confidence limit. Bootstrapped standard errors of the estimates of the path appear in parentheses. One thousand bias corrected bootstrap samples.

*$p < .05$. **$p < .01$.

Table 3. Bootstrapped (1,000 samples) conditional indirect effects analyses for the effect of gender on pleasurable sex (H3) and pleasurable masturbation (H4) on well-being and job outcomes through recovery states.

					Indirect Effect			Index of Moderated Mediation	
	Gender	Est. MX	Est. YM	Indirect Effect	LCL	UCL	Index of Moderated Mediation	LCL	UCL
Pleasurable Sex									
Job Satisfaction	Women	0.56** (.04)	0.21** (.06)	0.12** (.03)	0.05	0.18	−0.05 (.03)	−0.14	−0.01
	Men	0.23** (.04)	0.16* (.06)	0.05* (.02)	0.01	0.09			
Work Engagement	Women	0.56** (.04)	0.19** (.05)	0.21** (.03)	0.14	0.27	−0.05 (.03)	−0.13	−0.01
	Men	0.23** (.04)	0.08 (.06)	0.06** (.02)	0.02	0.11			
Life Satisfaction	Women	0.56** (.04)	0.34** (.06)	0.12** (.03)	0.05	0.16	−0.07 (.03)	−0.16	−0.02
	Men	0.23** (.04)	0.22** (.07)	0.03 (.02)	−0.01	0.06			
Pleasurable Masturbation									
Job Satisfaction	Women	0.61** (0.6)	0.23** (.08)	0.14** (.05)	0.04	0.24	−0.02 (.02)	−0.07	0.01
	Men	0.54** (.05)	0.26**(.06)	0.14** (.04)	0.10	0.21			
Work Engagement	Women	0.61** (0.6)	0.20** (.07)	0.25** (.05)	0.16	0.35	−0.02 (.02)	−0.06	0.01
	Men	0.54** (.05)	0.27** (.06)	0.18** (.04)	0.11	0.25			
Life Satisfaction	Women	0.61** (.06)	0.42** (.08)	0.12** (.04)	0.04	0.20	−0.03 (.02)	−0.08	0.01
	Men	0.54** (.05)	0.33** (.06)	0.15** (.03)	0.10	0.21			

Est. MX = estimate of the path from pleasurable sex or pleasurable masturbation to recovery state. Est. YM = estimate of path from recovery state to well-being and job outcomes. LCL = lower confidence limit. UCL = upper confidence limit. The estimates of Est. MX are the same across outcomes. Bootstrapped standard errors of the estimates of the path appear in parentheses. One thousand bias corrected bootstrap samples.
*$p < .05$. **$p < .01$.

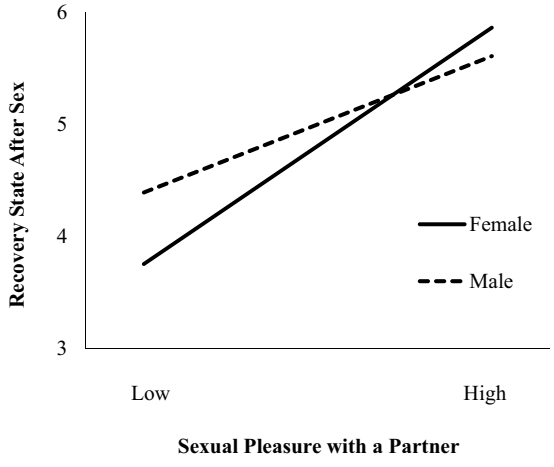

Figure 2. Simple slopes for the relation between sexual pleasure with a partner and recovery state by gender.

when experienced with a romantic partner or alone – is positively related to a psychological state of recovery. Additionally, perceived recovery mediated the relationship between sexual pleasure and positive, recovery related outcomes, including job satisfaction, work engagement, and life satisfaction. Moreover, the effects of sexual pleasure were stronger for women compared to men for romantic partner sex, but not for masturbation. The results of this study offer further insights into work, recovery, and sexuality.

Pleasure associated with romantic partner sex was related to greater feelings of recovery which, in turn, were related to greater job satisfaction, work engagement, and life satisfaction. In accordance with COR theory, pleasure can restore one's inner resources and increase well-being and positive affect (Esch & Stefano, 2004; Fredrickson, 2001; Hobfoll, 1998; van Hooff & de Pater, 2017). Meanwhile, in line with the E-R Model, when couples engage in sexual activity, time spent away from work demands can decrease stress and restore psycho-physiological balance (Hahn et al., 2012; Meijman & Mulder, 1998; Park & Fritz, 2015; Sonnentag & Fritz, 2007). These results also parallel past findings that pleasurable non-work activities promote feelings of recovery and well-being and positive job outcomes (van Hooff & de Pater, 2017; van Hooff et al., 2011). Like the work of van Hooff et al. (2011, 2017) it seems that the pleasure associated with the activity is just as important as the activity itself. Indeed, sexual pleasure is associated with a host of physiological changes in the brain that promote well-being and health (i.e., pleasure and reward systems; Esch & Stefano, 2004). Our findings also reflect past research that has identified the recovery promoting benefits of couples' engagement in shared activities (Hahn et al., 2012) and in spousal recovery behaviors (Park & Fritz, 2015). Indeed, shared activities could be especially important for recovery because they allow couples to engage in shared absorption experiences (i.e., being "in the moment"), which is key for successful recovery (Hahn et al., 2012), and that promotes sexual arousal and satisfaction (Brotto & Smith, 2014; Masters & Johnson, 1966; Prause et al., 2008; Sheen & Koukounas, 2009). Continued research may investigate the mediating role of absorption in the pleasure to recovery pathway. In sum, our research provides additional evidence for the importance of recovery during non-work hours to promote

well-being and positive job outcomes and identifies sex with a partner as a novel recovery experience.

Additionally, we found that pleasure associated with masturbation was related to greater feelings of recovery which, in turn, was related to greater job satisfaction, work engagement, and life satisfaction. These relationships complement our findings that sexual activity is associated with recovery and suggest that both are helpful for reaping the benefits of recovery. This is particularly encouraging as some employees are not in partnered sexual relationships or are in relationships where sex may not be accessible. Additionally, pleasure is important in individual recovery activities as well as partnered recovery activities (van Hooff et al., 2011, p. 2017). Furthermore, these findings legitimize the study of somewhat taboo sexual activities as they relate to work outcomes to understand how employees engage in recovery.

Moreover, the relationship between pleasure associated with romantic partner sex, recovery, well-being, and work outcomes was stronger for women compared to men. This suggests that the restorative, recovery promoting properties of partnered sex are more dependent on pleasure for women than for men. This may be due to men being more likely to experience pleasure from partnered sex than women (i.e., a ceiling effect) or due to men's ability to achieve gratification and orgasm from sex with more ease and frequency than women (Mahar et al., 2020; Murnen & Stockton, 1997). Likewise, the consistency in which men experience sexual pleasure compared to women may lower the variability in their scores, thus explaining the stronger predictive role of sexual pleasure for women. Gender differences may also be due to men gaining psychological recovery promoting benefits from sex outside of pleasure. For instance, men have been found to gain confidence from partnered sex (Brecher, 1977; San Martín et al., 2012) and to seek sex for stress relief (Ein-Dor & Hirschberger, 2012). Further, relationship and sexual satisfaction among heterosexual men (which are linked with life satisfaction) are strongly associated with the sexual pleasure of one's female partner (San Martín et al., 2012) and from feeling desired by her (Murray, 2018; Murray & Brotto, 2021). Finally, whereas gender affected the relationship between pleasure associated with partnered sex, recovery, well-being, and job outcomes, it did not in the context of masturbation. Although past research suggests women and men engage in masturbation for different reasons (Carvalheira et al., 2015; Janssen et al., 2008; Regenerus et al., 2017), pleasure associated with masturbation seems to be equally important for women and men to promote recovery. The extant literature indicates that women achieve orgasm more frequently when masturbating compared to heterosexual partner sex (Mahar et al., 2020), therefore, we speculate the "orgasm gap" may explain the lack of gender differences found in the importance of pleasure for recovery. Pleasure may be prioritized more intuitively in individual activities rather than in partnered activities where gendered scripts are more salient. Both genders pursue pleasure and achieve gratification equally during masturbation, decreasing the orgasm gap. Further, our sample was likely skewed such that women who reported engaging in masturbation are likely more attuned to their sexuality and pleasure as women are often discouraged from engaging in masturbation (Bowman, 2013; Eagly & Wood, 1999; Rich, 1980; Vance, 1992). These findings suggest that masturbation and romantic partnered sex are different activities associated with different psychological processes and outcomes for women and men (Bowman, 2013; Carvalheira et al., 2015; Regenerus et al., 2017; Rich, 1980). Our findings contribute to a small body of literature focused on masturbation, and further research should continue to investigate the various outcomes and motivations for engaging in individual sex behavior as a strategy for reducing stress.

Theoretical and Practical Implications

Our results have implications for both researchers and practitioners. Theoretically, our findings advance our understanding of the E-R Model and COR theory, both central theories underlying recovery processes. We found that sexual activity can be conceptualized through the lenses of both theories: as an activity that restores stress levels and equilibrium by disengagement from work (E-RM), and as an investment of energy that replenishes resources by increasing positive affect and confidence (COR). Moreover, our findings emphasize the importance of pleasure during recovery activities, in line with assumptions of the "pleasure-reward" system (Esch & Stefano, 2004) and broaden-and-build theory (Fredrickson, 2001). Furthermore, our findings advance the field by studying these different theories across disciplines: organizational psychology, social psychology, and human sexuality to create a more holistic understanding of employees' work and nonwork domains

Additionally, our findings improve understanding of social theories related to gender differences in sexual activity. Strict heterosexual social scripts dictate that women sacrifice their own sexual pleasure for their partner. Our results suggest that when these scripts are ignored, women benefit. Similarly, masturbation does not seem to have gender differences, perhaps because it is a solo activity rather than a partnered activity. Prior research and theory provide insight into why pleasure may be particularly important for women. Specifically, discussing women's pleasure during sex is somewhat taboo due to social norms. Indeed, social role theory (Eagly & Wood, 1999) may explain the gender differences in sexual social scripts. For instance, women's sexual pleasure is generally not prioritized in heterosexual relationships; thus, women often value men's pleasure over their own (Carter et al., 2019). The absence of women's pleasure in sexual social scripts contributes to the orgasm gap (Brody, 2010; Mahar et al., 2020; Petersen & Hyde, 2010). For women to achieve orgasm during heterosexual partnered sex, they may need a greater amount of sexual pleasure than men require to achieve orgasm. We suggest continued research concerning the role of specific sexual experiences, especially orgasm, as a function of recovery for both women and men.

This study also has practical implications for employees and the organizations in which they work. First, employees aiming to sustain or increase their engagement and satisfaction at work would benefit from making time to enjoy sex, alone or with a partner. Employees will benefit from several physiological outcomes associated with pleasurable sexual activity increasing positive emotions, well-being, and relaxation

(Debrot et al., 2017; Ein-Dor & Hirschberger, 2012; Leavitt et al., 2019; van Hooff & de Pater, 2017; van Hooff et al., 2011). Notably, the importance of pleasure should be emphasized when engaging in these activities with a specific focus on discovering what the individual finds to be pleasurable. Women can benefit from a focus on pleasure during partnered sex. Research related to sex therapy, mindfulness, and female sexuality have found that women who are encouraged to focus on their own pleasure during sex and communicate their sexual desires are likely to enjoy sex and experience greater benefits (Velten et al., 2018).

Second, our results highlight the importance of employees' abilities to access uninterrupted leisure time. More specifically, it is important that this uninterrupted leisure time is spent engaging in pleasurable activities. We recommend that organizations be mindful of the importance of leisure time for workers and regard a worker's time outside of work as a regenerative tool, yielding valuable outcomes for the organization. Therefore, reducing demands during off-work hours is necessary for successful employee recovery and organizational success. Furthermore, we recommend that organizations also educate their employees concerning the importance of experiencing pleasure during non-work hours. Organizations may sponsor initiatives that allow employees to learn about different activities that promote enjoyment and pleasure.

Limitations and Future Research

The present study was not without limitations. Statisticians often caution against mediation analyses for cross-sectional data (e.g., Maxwell et al., 2011). Although cross-sectional analyses are often appropriate for the investigation of new phenomena, they do not provide strong tests of causality or an understanding of directionality of the relations tested. We proposed one causal direction based on theoretical considerations; however, we cannot say with certainty that sexual pleasure causes work and well-being outcomes. We addressed these issues by designing our study to direct participants in such a way as to avoid potential explanations related to alternative causal relationships. Specifically, we asked participants to rate their recovery experiences "after partnered sex/masturbation." Thus, it is not logical to consider reverse causality in this relationship. Furthermore, recovery experiences have consistently been conceptualized as psychologically preceding work and life outcomes in the literature (Sonnentag, 2007). We are confident in our conceptualization of the relations between these constructs, though we encourage researchers to utilize longitudinal and/or experience sampling methods to examine the causal nature of these relationships more rigorously.

Additionally, we may have been limited by using MTurk to recruit participants. Although using MTurk sampling may result in inattentiveness and artificial responding through using computer scripts, we implemented several methods to ensure our sample was of high quality. For instance, we screened the data for inattentiveness by examining attention check items, invariability in responding, and fast completion times (Meade & Craig, 2012). Additionally, in the current study, we were particularly interested in workplace outcomes; however, future research may expand to examine the impact of recovery and sexual pleasure in other domains. Finally, participants came from a variety of backgrounds and organizations allowing for more generalizability in our results. Continued research should confirm these findings within different samples and methodologies in actual organizational settings.

Finally, we measured sexual pleasure using a single-item measure. Although it is appropriate to use single-item holistic measures for psychological research (Abdel-Khalek, 2006; Hoeppner et al., 2011) and single-item scales may be preferable to multi-item scales in some instances (Youngblut & Casper, 1993), a different scale could allow for better understanding of the nuance of pleasure, specifically during sex, and how it relates to recovery. There are a number of ways pleasure could be measured (Llerena et al., 2013; Pascoal et al., 2016; Russell et al., 1989), and we advise that researchers intentionally choose the option that is most psychometrically appropriate for their research question, research design, and analyses.

Conclusion

Although most employees report engaging in sexual activity, there is limited research dedicated to understanding how sexual activity during nonwork time affects work attitudes and outcomes. The results of the study indicate that pleasurable sex, alone or when shared with a romantic partner, relates to recovery gains, including job satisfaction, work engagement, and life satisfaction. Moreover, for those in relationships, pleasure associated with sexual activity is more important for women's recovery than men's recovery. Consequently, we encourage employees to dedicate uninterrupted leisure time to pleasurable sexual activity to promote stress reduction, well-being, and positive work outcomes.

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