



Published in final edited form as:

J Sex Med. 2020 January ; 17(1): 163–167. doi:10.1016/j.jsxm.2019.09.018.

Posting Sexually Explicit Images or Videos of Oneself Online Is Associated With Impulsivity and Hypersexuality but Not Measures of Psychopathology in a Sample of US Veterans

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Category 1

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Category 2

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Category 3

- a. Final Approval of the Completed Article
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Conflict of Interest: None with respect to the content of this article. M.N.P. has consulted for and advised Ironwood, Lundbeck, INSYS, Shire, RiverMend Health, Opiant/Lakelight Therapeutics, and Jazz Pharmaceuticals; has received research support from Mohegan Sun Casino, the National Center for Responsible Gaming, and Pfizer; has participated in surveys, mailings, or telephone consultations related to drug addiction, impulse-control disorders, and other health topics; has consulted for gambling and legal entities on issues related to impulse-control and addictive disorders; provides clinical care in the Connecticut Department of Mental Health and Addiction Services Problem Gambling Services Program; has performed grant reviews for the National Institutes of Health and other agencies; has edited journals or journal sections; has given academic lectures at grand rounds, continuing medical education events, and other clinical or scientific venues; and has generated books or book chapters for publishers of mental health texts.

SUPPLEMENTARY DATA

Supplementary data related to this article can be found online at <https://doi.org/10.1016/j.jsxm.2019.09.018>

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Abstract

Introduction: Sending sexually explicit text messages (“sexting”) is prevalent among US adults; however, the mental health correlates of this behavior among adults have not been studied adequately. Furthermore, there are few studies examining the related but distinct behavior of posting sexually explicit photos or videos of oneself online (posting sexual images [PSI]) and the mental health correlates of this behavior.

Aim: To examine associations between sexting, PSI, impulsivity, hypersexuality, and measures of psychopathology.

Methods: Using a national convenience sample of 283 US post-deployment, post-9/11 military veterans, we evaluated the prevalence of 2 behaviors: sexting and PSI and the associations of these behaviors with psychopathology, suicidal ideation, sexual behaviors, hypersexuality, sexually transmitted infections, trauma history, and measures of impulsivity.

Main Outcome Measure: Measures of psychopathology including depression, anxiety, post-traumatic stress disorder, insomnia, substance dependence, hypersexuality, and suicidal ideation, as well as measures of impulsivity, sexual behavior, and trauma.

Results: Sexting was found to be common among post-9/11 veterans (68.9%). A smaller number of veterans engaged in PSI (16.3%). PSI veterans were more likely to be younger, male, less educated, and unemployed. After adjusting for covariates, no associations were detected between PSI or sexting and the examined measures of psychopathology. However, PSI was associated with higher levels of impulsivity and hypersexuality, whereas sexting was not associated with these measures.

Clinical Implications: Results from this study suggest that not all digital sexual behaviors are associated with psychopathology. However, PSI was associated with hypersexuality and impulsivity. Those who engage with PSI may benefit from guidance on how to manage their impulsivity to prevent ego-dystonic sexual behaviors.

Strengths & Limitations: The strengths of this study include differentiating PSI from sexting broadly, highlighting that digital sexual behaviors are heterogeneous. Limitations include the study’s cross-sectional design, which limits causal interpretations. More research is also needed in civilian populations.

Conclusion: PSI was less prevalent than sexting in our sample. This behavior was associated with impulsivity and hypersexuality but not with elevated levels of psychopathology. Sexting was not associated with any of these measures.

Keywords

Sexting; Veterans; Psychiatric Disorders; Sexual Partners; Risky Sexual Behavior

INTRODUCTION

The evolution of digital technologies and their usage has changed the way people interact romantically and sexually. One important example involves sexting, a behavior that may be defined as sending sexually explicit texts to another individual via a digital outlet. The prevalence of engaging in any sexting behavior among adults has been estimated at 53.3%.¹ Though findings have been mixed, studies among adolescents have shown sexting to be associated with depression, anxiety, and other mental health concerns.¹ Among adults, however, sexting has not been found to be associated with psychopathology such as anxiety, depression, or low self-esteem.²

Currently, more research is needed to examine the mental health correlates of a related but distinct behavior: posting sexual images (PSI) online, which we define as uploading sexually explicit photos or videos of oneself on the Internet. To maximize sensitivity rather than specificity, this study examined PSI broadly and did not differentiate between public posting and areas of the internet that may be more private. Prior research has shown that US veterans who utilize digital social media for sexual partner seeking are more likely to suffer from a range of psychopathology, including post-traumatic stress disorder (PTSD), depression, and hypersexuality.³ The current study expands on this study to examine PSI among this vulnerable population.

We evaluated a national convenience sample of US military veterans to determine the frequencies of sexting and PSI. Specifically, we examined the associations between these behaviors and measures of psychopathology, impulsivity, hypersexuality, trauma history, and sexual health and behaviors. We expected PSI to be a riskier behavior and that PSI but not sexting would be associated with these measures.

METHODS

Procedure and Participants

Data were collected from the Survey of the Experiences of Returning Veterans study project and received approval from the institutional review board of the Department of Veterans Affairs. The overall procedures and recruitment methods used in the study have been described elsewhere for this sample.³ In brief, sociodemographic variables and measures of psychopathology were collected via a telephone interview, and measures of sexual health were collected via a follow-up online survey. Veterans were compensated \$50 for the telephone survey and an additional \$15 for the online survey. A total of 283 veterans participated in the study.

Measures

Measures of psychopathology were included in the Survey of the Experiences of Returning Veterans as part of a larger initiative to evaluate the mental health of post-9/11 veterans. Sexting and sexual behavior questions were added to the study with the goal of better understanding hypersexuality among this population.⁴ The Primary Care Evaluation of Mental Disorders was used to assess for depression and has been shown to be psychometrically sound when screening for clinical depression ($\alpha = 0.88$).⁵ The Alcohol

Use Disorder and Associated Disabilities Interview Schedule-IV was used for anxiety disorders (eg, generalized anxiety, panic disorder, agoraphobia) and substance use disorders.⁶ The reliability of the Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV diagnoses are generally good for the diagnosis of anxiety disorders ($k = 0.40$ – 0.52).⁷ We used the Insomnia Severity Index for insomnia ($\alpha = 0.75$)⁸ and the PTSD symptom checklist (PCL-Civilian) for PTSD ($\alpha = 0.96$).⁹ Both childhood physical trauma and sexual trauma were measured using single items taken from the Deployment Risk and Resilience Inventory, which has demonstrated reliability across its subscales ($\alpha > 0.82$).¹⁰

Sexual history was assessed by asking 3 questions: (i) “How many sexual partners have you had in the past year?” (ii) “How many sexual partners have you had in your lifetime?” and (iii) “Have you had a sexually transmitted infection?” The Hypersexual Behavior Inventory (HBI)¹¹ measures characteristics of ego-dystonic hypersexuality (repeated unsuccessful attempts to control sexual thoughts, urges, and behaviors). The HBI demonstrated high internal reliability ($\alpha = 0.96$). Scores on the HBI range from 19 to 95, with a proposed clinical cutoff of 53 or higher for clinical hypersexuality.

Sexting was assessed by asking, “In your lifetime, how many times have you sent sexually explicit text messages to others on your cell phone?” Posting sexually explicit images of oneself was assessed by asking, “In your lifetime, how many times have you posted sexually explicit pictures of yourself on the Internet?” Posting sexually explicit videos of oneself was assessed by asking, “In your lifetime, how many times have you posted sexually explicit videos of yourself on the Internet?” Response options included never, once, 2–4 times, 5–9 times, and 10+ times. Given the current sample size, we opted to combine responses into yes/no categories. We additionally combined posting sexually explicit images and videos into one category: PSI. Impulsivity was measured using the Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency, Impulsive Behavior (UPPS-P) Scale.¹² The scale contains 5 subscales and has demonstrated high reliability ($\alpha = 0.78$ – 0.90). In addition to examining the UPPS-P and its subscales as continuous variables, we used clinical cutoffs as previously described.¹³

Statistical Analyses

SAS 9.3 (SAS Institute Inc; Cary, NC) was used for descriptive statistics and multinomial logistic regressions. Two-sided tests and overall alpha level of 0.05 for all primary hypotheses were employed.

RESULTS

Approximately half (52.7%) of the participants had sexted. Approximately one-sixth (16.3%) had engaged in PSI. Approximately one-third (31.1%) had never engaged in either behavior. We found that sexting and PSI were associated with male gender, lower level of employment, lower educational attainment, and younger age. After adjusting for the statistically significant covariates, we conducted multinomial logistic regressions to examine relationships between PSI and sexting status and measures of psychiatric morbidity, impulsivity, sexual health/behavior, and trauma (Table 1). We found that sexting and PSI were not associated with any measures of psychopathology. PSI but not sexting was

associated with impulsivity and hypersexuality. When examining the UPPS-P scores using clinical cutoffs, we found PSI to be associated with positive urgency, sensation seeking, and lack of perseverance (Supplementary Table S1).

DISCUSSION

Sexting was found to be common among our sample of post-deployment, post-9/11 veterans, with 52.7% of participants engaging in the behavior within their lifetime. PSI was relatively less common, with 16.3% of participants reporting lifetime engagement. Similar to previous studies of sexting among adults,³ neither sexting nor PSI was associated with measures of psychopathology. These results suggest that PSI and sexting may represent normative behaviors. In the past, we have theorized that veterans post-deployment may return with new psychopathologies (PTSD, anxiety, depression) and that digital sex-seeking online may be associated with these conditions, perhaps being used as a means to alleviate symptomatology.³ PSI, in contrast to this notion, does not appear to be associated with these psychopathologies. One potential explanation for this with regard to sexting is that this may frequently occur within the context of being in the early phases of a new relationship, which could be associated with feelings of wellbeing rather than psychopathology.

PSI, however, was found to be associated with higher levels of both impulsivity and hypersexuality, as measured by the HBI-19. Notably, this measure of hypersexuality captures elements of ego-dystonic compulsive sexual behavior. Individuals with high levels of impulsivity may engage in PSI and then later regret their behaviors, resulting in these higher HBI-19 scores. Further qualitative research is needed to understand the motivations for individuals to engage in PSI. PSI may represent a symptom of hypersexual disorder that has not been adequately examined among military veterans.

Returning US veterans face a range of mental health concerns as they transition back into society, including substance use disorders, trauma-related disorders, and hypersexuality.⁴ Our findings suggest that, in addition to asking veterans about mental health challenges, clinicians should consider screening for PSI behaviors to better understand potential problems related to ego-dystonic hypersexuality and impulsivity. Limitations of the current study include the correlative nature of the findings and lack of generalizability to the general population.

CONCLUSION

Future studies should examine the prevalence of PSI in the civilian population, as well as the qualitative reasons that individuals engage in sexting and PSI. PSI may also represent a diverse set of behaviors with varying degrees of nudity or sexual explicitness and varying levels of privacy (eg, open websites vs members-only websites). Future research is needed to better delineate these heterogeneous behaviors. Sexting behavior may be similarly heterogeneous. Taken together, this study represents an foray into understanding new and possibly detrimental behaviors facilitated by recent changes in digital technologies and their usages. Our unique findings for PSI and sexting highlight the importance of examining these behaviors as distinct phenomena in future research.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Funding: None.

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Table 1.

Mental health, impulsivity, and sexual behavior among veterans who have posted sexually explicit videos or images of themselves online or sent sexual texts compared to those who have never engaged in either behavior, adjusted for age, gender, employment status, and education level using multinomial logistic regression

Measures	Sexted vs never		PSI vs never	
	OR (95% CI)	P value*	OR (95% CI)	P value*
Mental health measures				
Depressive symptomatology (PRIME-MD)	0.99 (0.51–1.90)	.975	1.99 (0.86–4.57)	.106
Alcohol dependence, lifetime (AUDADIS-IV)	1.15 (0.64–2.08)	.641	1.73 (0.79–3.82)	.172
Insomnia (ISI)	0.80 (0.45–1.44)	.458	1.51 (0.68–3.34)	.310
Drug dependence, lifetime (AUDADIS-IV)	3.11 (0.71–13.69)	.133	4.18 (0.71–24.53)	.113
PTSD symptomatology (PCL-Civilian 36)	0.81 (0.44–1.51)	.512	1.24 (0.50–3.09)	.646
Suicidal ideation (Lifetime, passive or active)	0.82 (0.38–1.79)	.626	0.93 (0.33–2.61)	.894
Anxiety disorder (AUDADIS-IV)	0.75 (0.41–1.37)	.353	0.77 (0.34–1.74)	.530
Impulsivity measures				
Impulsivity, UPPS mean	2.37 (0.94–5.96)	.068	17.84 (4.50–70.75)	<.001
Lack of perseverance, mean	1.01 (0.56–1.83)	.982	2.10 (0.94–4.72)	.072
Negative urgency, mean	1.64 (0.94–2.85)	.080	4.49 (2.02–10.02)	<.001
Positive urgency, mean	1.54 (0.82–2.88)	.176	4.30 (1.86–9.95)	.001
Sensation seeking, mean	1.90 (0.92–3.91)	.083	4.50 (1.58–12.83)	.005
Lack of premeditation, mean	1.73 (0.85–3.52)	.133	2.36 (0.92–6.07)	.074
Sexual history and severity measures				
Lifetime sexual partners				
10	0.43 (0.24–0.78)	.005	0.24 (0.11–0.56)	.001
11–30	2.92 (1.40–6.09)	.004	0.76 (0.24–2.41)	.635
31+	1.11 (0.59–2.10)	.745	4.81 (2.06–11.27)	.000
Past-year sexual partners				
0 in last year	0.54 (0.29–1.01)	.054	0.34 (0.13–0.88)	.026
1 or 2 in last year	1.86 (1.03–3.35)	.039	1.59 (0.72–3.52)	.255
3+ in last year	0.85 (0.36–1.99)	.712	1.67 (0.62–4.50)	.310
Sexually transmitted infection (lifetime)	1.73 (0.89–3.34)	.105	1.64 (0.65–4.17)	.299

Measures	Sexted vs never		PSI vs never	
	OR (95% CI)	P value*	OR (95% CI)	P value*
Hypersexuality (HBI > 53)	1.13 (0.34–3.82)	.843	5.08 (1.45–17.80)	.011
Trauma measures				
Lifetime history of sexual trauma	1.15 (0.54–2.45)	.72	1.71 (0.56–5.27)	.35
Lifetime history of physical trauma	1.00 (0.54–1.85)	.99	0.87 (0.36–2.07)	.75

AUDADIS-IV = Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV; HBI = Hypersexual Behavior Inventory; ISI = Insomnia Severity Index; PCL-Civilian = PTSD Checklist for Civilians; PRIME-MD = Primary Care Evaluation of Mental Disorders; PTSD = post-traumatic stress disorder; UPPS = Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency, Impulsive Behavior Scale.

* Bolded P values indicate significance at $P < .05$.