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Examining the Impact of Technology on Exhibitionistic Behavior

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ABSTRACT

Contemporary sexual behavior cannot be fully understood without considering the effects of smartphones and social networking websites, both of which have provided additional avenues for consensual sexual activity. However, technology has also created new ways to engage in deviant behavior that may be similar to exhibitionism (exposing one's genitals to unsuspecting individuals). Participants completed a survey about traditional exhibitionistic behaviors (flashing) and technological sexual behaviors such as sending sexually explicit pictures. A small percentage of participants reported engaging in both technological and traditional exhibitionistic behavior, which may be indicative of an electronic manifestation of deviant sexual behavior.

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In May 2011, Washington, D.C. was rocked with scandal when then Congressman, Anthony Weiner, was accused of sending nude and semi-nude pictures of his penis to women he had never met via his smartphone (Canning and Hopper 2011). This scandal introduced the world to “sexting,” a term that is now commonplace in the English language and refers to sending and receiving sexually provocative images via smartphones and other electronic devices. Former Congressman Weiner's behavior raises the question—was this behavior merely a new way of flirting or was it in fact a technological manifestation of exhibitionistic behavior?

Exhibitionism has been recognized by the American Psychiatric Association (APA) as a sexual paraphilia that involves sexual arousal derived from repeatedly exposing one's genitals to unsuspecting, non-consenting individuals (2013). However, in the latest version of the *Diagnostic and Statistical Manual* (DSM-5) the DSM working group sought to refine the paraphilia diagnosis by making a distinction between exhibitionistic disorder and exhibitionist behavior. Thus they wanted to differentiate between what would be considered atypical human behavior (exhibitionistic behavior) and behavior that causes mental distress to a person or makes the person a serious threat to the psychological and physical well-being of other individuals (exhibitionistic disorder; APA 2013). Given that it is difficult to accurately assess the criteria for exhibitionistic disorder without a clinical interview and collateral information, the focus of this article shall be on exhibitionistic behavior.

The exact prevalence of exhibitionistic disorder is unknown; however, it is estimated to range from 2–4% among males, with much lower rates among females (APA, 2013; Murphy and Page 2008). It is estimated that the prevalence of exhibitionistic behavior is significantly higher than the prevalence of exhibitionistic disorder, but data prevalence rates are also lacking. Historically males who engaged in exhibitionism (pre-DSM 5 definition) reported becoming aware of the urge to expose their genitals to unsuspecting individuals during adolescence (Murphy and Page 2008). However, the DSM-5 does not require a minimum age for a diagnosis of exhibitionistic disorder, which creates confusion when differentiating between appropriate sexual interest

during adolescence/young adulthood and exhibitionistic behavior (APA 2013; Murphy and Page 2008).

Sexual behavior and technology

According to the Pew Research Center, cell phone ownership is at an all-time high, with 97% of young adults between the ages of 18–24 reporting cell phone ownership (Rainie 2013). Text messaging is currently the most popular form of electronic communication among adolescents and young adults in the United States (Judge 2012). The average teenager sends between 2,539 (for males) and 4,050 (for females) text messages per month, while young adults (18–24 years) send approximately 1,630 text messages per month (Parr 2010). In addition to text messaging, a national survey found that 62% of teens and young adults also use their cell phones to send picture messages (Parr 2010).

With widespread access to technology at their fingertips, methods by which teenagers and young adults engage in sexual behaviors with one another has changed dramatically over the last several decades (Hua 2012). While many of these behaviors may be electronic extensions of normal adolescent/young adult courtship behaviors, it appears that in some cases these behaviors may be electronic manifestations of paraphilic behaviors. For example, in the past decade the phenomenon of sexting has developed. Sexting is defined as “creating, sharing, and forwarding sexually suggestive, nude, or nearly-nude images” through cell phones, the Internet, and other electronic devices (Sadhu 2012:76). The Pew Research Center cited three situations in which sexting typically occurs: (1) the exchange of photographs between two people in a romantic relationship; (2) the exchange of photographs between two people in a romantic relationship in which the image is then forwarded to an outside party; or (3) the exchange of photographs between two people not currently in a relationship, but potentially interested in beginning a sexual relationship (Sadhu 2012). However, none of these definitions includes sending sexual images to unsuspecting or non-consenting individuals. Furthermore, it is unclear at what point sexting with an unsuspecting or non-consenting individual changes from an unsolicited attempt at flirting/courtship to a paraphilic behavior. In order to ascertain this distinction, a further investigation of the motivation behind the sexting behavior is needed.

Currently, research suggests that among adolescents, the motivations for sending sexual images can include: the desire to begin a sexual relationship, flirting within the context of an ongoing sexual relationship, and the ability to safely explore their sexuality without physical sexual contact. Additional motivations for sexting can include peer pressure, boredom, sending photographs as a joke/prank, or sending photos in order to show off one’s body (Sadhu 2012).

It has been postulated that individuals who engage in exhibitionistic behaviors do so because of narcissism (excessive or erotic interest in oneself and one’s physical appearance) and that individuals who engage in exhibitionistic behaviors do so as a result of the erotic satisfaction and sexual pleasure derived from exposing oneself to an audience, rather than from sexual contact (Lang et al. 1987). Adolescents and young adults may be particularly apt to utilize technology to express their sexual behavior, as this is a crucial period of identity development marked by increased sexuality (Sadhu 2012). This time period is also distinguished by impulsivity and narcissism, in addition to a preoccupation with sexual exploration (Korenis and Billick 2013; Sadhu 2012) and thus cell phones can provide adolescents and young adults with an avenue to engage in sexual behaviors with unlimited access to a large number of people.

Study overview

As the scope and reach of technology advances, so too does its role in the expression of sexual behavior. However, it is unclear if people engaging in these types of technology driven sexual behaviors are engaging in changing sexual practices or exhibitionistic behaviors. Further, little is known about the

motivations behind using technology as it relates to exhibitionistic behavior. This article seeks to address this gap in the literature by examining the frequency and motivations behind sending nude or semi-nude images in a large sample of young adults. Thus there are two goals of this exploratory study. First, we sought to provide a detailed description of the prevalence of online sexual behaviors by measuring the frequency of the exchange of sexually explicit images. Next, we sought to understand the purpose and underlying motivations behind these technological sexual behaviors. These goals will allow for a better understanding of these behaviors and an evaluation of them as they related to exhibitionistic behavior as this new phenomenon does not fit within any current theoretical framework.

Method

Participants

The sample consisted of 959 respondents, with 73.7% ($n = 707$) females and 26.3% ($n = 252$) males. In an effort to increase generalizability, participants were sampled from two sources: (1) undergraduate research experience program at an urban northeastern college and (2) social networking websites on the Internet such as Facebook, Twitter, and Reddit. Participants ranged in age from 18 to 30 years, with an average age of 20.82 years ($SD = 2.39$). The sample was racially and ethnically diverse and was comprised mostly of Hispanic (34.9%; $n = 332$), white (30.4%; $n = 289$), and African American (14.6%; $n = 139$) participants. The majority of participants identified themselves as heterosexual (84.4%; $n = 807$). Participants were also asked to describe their general cell phone and Internet behaviors. Of the respondents, almost all (97.6%; $n = 935$) owned a cell phone or smartphone with a built-in camera. Almost half (44.0%; $n = 442$) of the participants reported that they used their cell phone for more than six hours per day for activities such as text messaging, checking social media, and taking photos and videos.

Procedure

All study procedures were approved by the university Institutional Review Board. Participants were recruited from two sources: (1) undergraduate research experience program and (2) social networking websites. Undergraduate students who were interested in participating in research for course credit were able to access the survey from the research experience website. To increase generalizability, the survey link was also posted on social networking websites such as Facebook, Twitter, and Reddit, and were also used to recruit additional participants via snowball sampling. All participants who accessed the survey provided informed consent prior to beginning the survey. Participants were screened for being 18 years or older prior to taking part in the survey. After obtaining informed consent, participants were asked to complete the self-report questionnaire developed for the purposes of the present study. Average completion time for the survey was approximately 30 minutes and data was collected for the study over a six month period. Upon completion of the survey, participants were provided with a debriefing form, contact information for the principal investigator, and counseling resources should the individual have felt distressed after completing the survey.

Measures

The survey examined demographic characteristics and various items related to technologically enabled sexual behaviors. For the ease of understanding, the definition of exhibitionistic behavior was adapted from the DSM-5 (APA 2013) and condensed into a one-sentence description. Exhibitionistic behavior was defined as, “flashing your nude or partially nude body parts (exposing your genitals: breasts, penis, or vagina) in a public place.”

As there are currently no standardized assessments of exhibitionistic behaviors, a self-report questionnaire consisting of both open-ended and forced-choice questions was designed for the

purposes of this study. Items identified in previous studies as relevant to exhibitionistic behavior were included in the measure. The content validity of the measure was assessed by two experts in the field prior to use. The details of each question are provided in the following sections and are separated by the type of content.

Participant demographics

Five items assessed participant demographic information including age, gender, ethnicity, sexual orientation, and level of education; these were collected via forced-choice questions.

Cell phone and internet general usage

Six items assessed whether the participant owned a cell phone with a built-in camera and explored participants' cell phone and Internet general usage. Additionally, various activities and amount of time spent using cell phones and Internet for leisure or entertainment were measured.

General sexual behaviors

Eight items queried participants' current and past romantic and sexual relationships by using a forced-choice question format. Additionally, participants were asked to disclose if they had been a victim of sexual assault.

Exchange of sexually explicit photographs

Frequency of sending sexually explicit photographs was coded as having ever sent a sexually provocative or nude image. If participants indicated they had sent a sexually provocative image, nude image or both, they were prompted to provide information on the situation surrounding each type of photograph sent. Forced-choice questions were used to determine the medium for transmission (text message, Snapchat, Facebook, etc.) and open-ended questions documented content of the image and why the participant chose that medium. Further, 17 forced-choice items explored who the photos were sent to, the self-reported frequency, and motivations behind these behaviors. Participants were asked on a scaled response if they had tried to hide their identity when taking sexually explicit photographs, such as excluding their face from the picture or covering recognizable tattoos or birthmarks. Additionally, participants were asked if they had ever sent a sexually explicit photograph to a stranger or a person known for less than 24 hours. Participants were asked to indicate whether sending sexually explicit photographs had ever caused trouble in their personal lives or with the criminal justice system. Additionally, two open-ended questions measured participants' attitudes on sending images to people they know and strangers, and if this behavior would be considered similar to exhibitionistic behavior.

Exhibitionistic behavior

Four items were used to assess exhibitionistic behavior. Two forced-choice questions assessed whether participants engaged in exhibitionistic behavior (exposing one's genitals to others in a public place) and the frequency of such behaviors. Two open-ended questions were used to understand the situational context of the exhibitionistic behaviors and how engaging in this behavior made the participants feel.

Results

The results are presented in two parts to address the main goals of the study. First, we ran descriptive analyses to provide a detailed description of the prevalence of online sexual behaviors through the frequency of the exchange of sexually explicit images. Descriptive statistics were also gathered on

whether participants endorsed engaging in traditional (non-technology enabled) exhibitionistic behavior. Second, we gathered quantitative and qualitative data to understand the purpose and underlying motivations behind these traditional and technological sexual behaviors. There were no significant demographic differences between the undergraduate population and the sample taken from social media websites, therefore all data were analyzed in aggregate.

Descriptive analyses

Sending sexually provocative images

Of participants, 35.3% (*n* = 336; 31.1% male, 36.8% female) engaged in sending a sexually provocative photo of themselves with their genitals covered but in a sexually provocative pose to someone using technology. The most common mode of transmission for sending sexually provocative images was a picture message 87.1% (*n* = 293), followed by using the smartphone application Snapchat 19.5% (*n* = 66), then Facebook 8.6% (*n* = 29). The smartphone application Snapchat was a popular choice among participants for sending images because the photograph disappears after a few seconds of viewing, which was reported as “safer” (38.2%; *n* = 26) compared to other mediums. The content of the sexually provocative images was most commonly reported as participants posing in undergarments or swimwear.

Sexually provocative images were sent most frequently to a boyfriend or girlfriend, with 51.1% (*n* = 138) of females and 53.1% (*n* = 42) of males sending the photograph to their respective significant others (see Table 1). Females (41.5%; *n* = 105) were significantly more likely to “always” take precautions to hide their identity when sending images, such as not including their faces in images and not photographing any recognizable tattoos, scars, or birthmarks compared to males (26.8%; *n* = 19), $\chi^2 = 8.7, p < .05, \phi = 0.16$. Additionally, males (18.3%; *n* = 13) were significantly more likely than females to send a sexually provocative image to a stranger or someone they had known for less than 24 hours compared to females (6.4%; *n* = 16), $\chi^2 = 9.54, p < .01, \phi = 0.17$.

Sending nude images

Of participants, 24.2% (*n* = 221; 23.0% male, 24.6% female) engaged in sending a nude photograph of themselves exposing their genitals (breasts, penis, or vagina) to someone via technology. Participants

Table 1. Who are sexually provocative and nude photos sent to?

	Sexually provocative					Nude				
	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ
Close friends	48 (4.8)	11 (19.3)	37 (16.9)	0.18	0.03	29 (2.9)	7 (14.6)	22 (14.3)	0.00	0.00
Significant other	180 (18.6)	42 (51.3)	138 (51.1)	0.39	0.04	180 (18.7)	43 (78.6)	137 (78.7)	0.79	0.06
Crush	65 (6.5)	19 (31.1)	46 (20.1)	3.39	0.11	39 (17.0)	15 (38.4)	22 (59.4)	7.33**	0.19
Someone just met	20 (2.0)	13 (21.3)	7 (3.1)	25.00**	0.29	14 (1.4)	9 (19.1)	5 (7.0)	14.05**	0.26
Someone to get to know	20 (2.0)	13 (21.3)	7 (3.0)	25.14**	0.29	22 (2.2)	13 (27.7)	9 (5.8)	17.91**	0.30
Someone only known online	31 (3.1)	16 (26.7)	15 (6.6)	20.09**	0.26	18 (1.8)	10 (20.8)	8 (5.2)	11.14**	0.23
A date or hookup	147 (14.6)	42 (61.8)	105 (44.3)	6.45*	0.15	82 (35.7)	29 (35.4)	51 (62.2)	11.00**	0.23
Family	6 (0.6)	1 (1.7)	5 (2.2)	0.06	0.01	2 (0.2)	0	2 (1.3)	0.61	0.06
Anyone	7 (0.7)	2 (*3.3)	5 (2.2)	0.27	0.03	5 (0.5)	3 (6.5)	2 (1.3)	3.81	0.14

p* < .05, *p* < .01.

could choose from multiple mediums for sending images, the most common mode of transmission for sending nude images was a picture message (88.3%; $n = 195$), followed by using the smartphone application Snapchat (18.7%; $n = 41$), then Facebook (7.4%; $n = 16$). The content of these images differed from the sexually provocative photos in that participants were either partially or completely nude.

Participants were given a list of possible recipients and were able to choose more than one person that they have sent images to in the past. Nude images were sent most frequently to a boyfriend or girlfriend, with 78.7% of females ($n = 137$) and 76.8% of males ($n = 43$) sending the photograph to their respective significant others (see Table 1). Additionally nude images were also sent to someone who the participant had previously dated or “hooked up” (35.7%; $n = 82$) and someone the participant had a crush on (17.0%; $n = 39$). Over one third of females (36.8%; $n = 64$) reported “always” hiding their identity when sending nude images. Additionally, males (23.1%; $n = 12$) were significantly more likely than females to send a nude image to a stranger or someone they had known for less than 24 hours compared to female participants (3.6%; $n = 6$), $\chi^2 = 19.80$, $p < .01$, $\phi = 0.30$.

Exhibitionistic behavior

When asked if participants had ever flashed their nude or partially nude body parts by exposing their genitals (breasts, penis, or vagina) in a public place (public urination not included) 5.6% ($n = 56$) of participants endorsed engaging in this behavior. Additionally, of the 56 participants that reported engaging in behaviors similar to the traditional definition of exhibitionism, 19 (33.9%) respondents also reported sending nude photographs.

Understanding purpose and motivation

Participants were asked about the motivation (see Table 2) and purpose (see Table 3) for engaging in both technological and non-technological sexual behaviors. In addition, they were queried regarding their feelings about sending sexually provocative or nude photos (see Table 4).

Sexually provocative images

Participant reasons for sending proactive images are presented in Table 2. They most frequently reported that their primary motivation for sending provocative images was that they acted impulsively (19.8%; $n = 199$), and sent a photograph in order to feel sexy (17.1%; $n = 172$). Males (59.1%; $n = 39$) were significantly more likely than females (43.3%; $n = 100$), $\chi^2 = 11.39$, $p < .01$, $\phi = 0.20$ to send a nude image in response to being prompted, or asked, by another person. Males were also significantly more likely to send a nude image while intoxicated (26.2%; $n = 17$) compared to females (10.0%; $n = 23$), $\chi^2 = 4.44$, $p < .05$, $\phi = 0.15$.

Participant feelings about sending sexually provocative photos are presented in Table 4. Males (50.7%; $n = 34$) felt significantly more encouraged to send more photographs after sending a sexually

Table 2. Prompting motivations for sending sexually provocative and nude photos.

	Sexually provocative					Nude				
	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ
Planned	131 (13.0)	26 (40.6)	105 (43.8)	0.20	0.03	95 (9.5)	23 (47.9)	72 (45.6)	0.08	0.02
Impulsive	199 (19.8)	45 (64.3)	154 (65.3)	0.02	0.01	133 (13.2)	33 (64.7)	100 (62.9)	0.06	0.02
Intoxicated	40 (4.0)	17 (26.2)	23 (10.0)	4.44*	0.15	25 (2.5)	10 (21.7)	15 (9.9)	4.44*	0.15
Prompted	139 (13.8)	39 (59.1)	100 (43.3)	5.15*	0.13	90 (9.0)	32 (66.7)	58 (38.2)	11.98**	0.25

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

Table 3. Reasons for sending sexually provocative and nude photos.

	<i>Sexually provocative</i>					<i>Nude</i>				
	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ
Attention seek	122 (12.1)	31 (47.7)	91 (38.6)	1.76	0.08	86 (8.6)	23 (47.9)	63 (41.2)	0.68	0.06
Pressure from BF/GF	96 (9.6)	21 (32.3)	75 (31.4)	0.02	0.01	79 (7.9)	21 (44.7)	58 (37.7)	0.74	0.06
Pressure from friends	10 (1.0)	3 (4.7)	7 (3.0)	0.43	0.04	8 (0.8)	2 (4.3)	6 (4.0)	0.01	0.01
Positive feedback	125 (12.4)	36 (52.2)	89 (37.6)	4.73*	0.12	78 (7.8)	25 (51.0)	53 (35.3)	3.81	0.14
To be noticed	45 (4.5)	14 (22.2)	31 (13.2)	3.16	0.10	37 (3.7)	13 (28.9)	24 (15.9)	3.82	0.14
In response	158 (15.7)	50 (72.5)	108 (45.8)	15.25**	0.22	139 (14.5)	39 (59.1)	100 (43.3)	11.39**	0.20
To feel sexy	172 (17.1)	34 (50.7)	138 (58)	1.11	0.06	104 (10.3)	20 (41.7)	84 (54.2)	2.30	0.11
Joke	77 (7.7)	28 (42.4)	49 (21.0)	12.31**	0.20	30 (3.0)	9 (19.1)	21 (13.7)	0.83	0.06
Enjoyment	155 (15.4)	48 (67.6)	107 (43.7)	12.62**	0.20	85 (8.5)	23 (46.0)	62 (38.3)	0.95	0.07

* $p < 0.05$, ** $p < 0.01$.**Table 4.** Feelings after sending sexually provocative and nude photos.

	<i>Sexually provocative</i>					<i>Nude</i>				
	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ	Overall freq. (%)	Male freq. (%)	Female freq. (%)	χ^2	ϕ
Confident	236 (23.5)	59 (84.3)	177 (73.1)	3.66	0.11	145 (14.4)	43 (82.7)	102 (63.0)	7.01**	0.18
Desperate	22 (2.2)	5 (7.7)	17 (7.3)	0.01	0.01	16 (1.6)	4 (8.5)	12 (7.9)	0.02	0.01
Insecure	43 (4.3)	7 (10.9)	36 (15.3)	0.76	0.01	41 (4.1)	5 (10.6)	36 (23.5)	3.67	0.14
Excited	180 (17.9)	42 (62.7)	138 (58.2)	0.43	0.04	116 (11.5)	33 (67.3)	83 (52.9)	3.18	0.12
Aroused	191 (19.0)	47 (68.1)	144 (60.3)	1.41	0.07	135 (13.4)	38 (74.5)	97 (60.6)	3.24	0.12
Encouraged to send more photographs	110 (10.9)	34 (50.7)	76 (32.3)	7.63**	0.16	56 (5.6)	18 (38.3)	38 (24.7)	3.33	0.13
Violated	12 (1.2)	1 (1.5)	11 (4.7)	1.34	0.07	11 (1.1)	2 (4.3)	9 (6.0)	0.20	0.03
Angry	7 (0.7)	1 (1.5)	6 (2.6)	0.24	0.03	5 (0.5)	2 (4.3)	3 (2.0)	0.74	0.06
Immature	50 (5.0)	8 (12.1)	42 (18.1)	1.32	0.07	23 (2.3)	7 (14.9)	16 (10.4)	0.72	0.06
Guilty	71 (7.1)	5 (9.2)	65 (27.8)	9.66**	0.18	46 (4.6)	6 (12.5)	40 (26.1)	3.85*	0.14
Bold	153 (15.2)	35 (53.8)	118 (49.6)	0.37	0.04	85 (8.5)	23 (47.9)	62 (39.7)	1.01	0.07
Uncomfortable	47 (4.7)	4 (6.2)	29 (12.3)	3.90	0.11	38 (3.8)	4 (8.5)	34 (22.2)	4.39*	0.15
Embarrassed	44 (4.4)	4 (6.3)	40 (17.2)	4.74*	0.13	29 (2.9)	3 (6.8)	26 (17.2)	2.91	0.12

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

provocative photo than did females (32.3%; $n = 76$), $\chi^2 = 7.63$, $p < .01$, $\phi = 0.16$. Conversely, females (27.8%; $n = 65$) felt significantly more guilty (9.2%; $n = 5$), $\chi^2 = 9.66$, $p < .01$, $\phi = 0.18$, and embarrassed (17.2%; $n = 40$) compared to males (6.3%; $n = 4$), $\chi^2 = 4.74$, $p < .05$, $\phi = 0.13$.

Participant reasons for sending sexually provocative photos are presented in Table 3. Males (42.4%; $n = 28$) were significantly more likely to send a sexually provocative image as a joke (21.0%; $n = 49$), $\chi^2 = 12.31$, $p < .01$, $\phi = 0.20$, or in response to a request from someone else (72.5%; $n = 50$), than were females (45.8%; $n = 108$), $\chi^2 = 15.25$, $p < .01$, $\phi = 0.22$. Furthermore, males (67.6%; $n = 48$) were significantly more likely to send a sexually provocative photo for enjoyment (43.7%; $n = 107$), $\chi^2 = 12.62$, $p < .01$, $\phi = 0.20$, and to gain positive feedback (52.5%; $n = 36$) than were females (37.6%; $n = 89$), $\chi^2 = 4.73$, $p < .05$, $\phi = 0.04$.

Sending nude images

Motivations for sending nude photos are presented in Table 2. Participants most often reported that they acted impulsively (13.2%; $n = 133$) and sent a photograph in order to feel confident (14.4%; $n = 145$). Males (66.7%; $n = 32$) were significantly more likely to send a nude image in response to a prompt when compared to females (40.2%; $n = 53$), $\chi^2 = 11.98$, $p < .01$, $\phi = 0.25$. Males were also significantly more likely to send a nude image while intoxicated (21.7%; $n = 10$) than were females (9.9%; $n = 15$), $\chi^2 = 4.44$, $p < .05$, $\phi = 0.15$.

Participant feelings about sending nude photos are presented in Table 4. When sending a nude image, male participants (82.7%; $n = 43$) felt significantly more confident compared to females (63.0%; $n = 102$), $\chi^2 = 7.01$, $p < .01$, $\phi = 0.18$. Conversely, females were significantly more likely to feel guilty (26.1%; $n = 40$) and uncomfortable (22.2%; $n = 34$) when sending a nude image to others as compared to their male counterparts (guilt: 12.5%; $n = 6$), $\chi^2 = 3.85$, $p < .05$, $\phi = 0.14$ (uncomfortable: 8.5%; $n = 4$), $\chi^2 = 4.39$, $p < .05$, $\phi = 0.15$.

Exhibitionistic behaviors

Participants were given an array of motivations to choose from to describe how they felt when engaging in exhibitionistic behaviors. The major themes participants reported when asked how they felt about flashing their nude or partially nude body parts in a public place were exhilaration (4.8%), arousal (9.7%), and excitement (8.1%).

Discussion

This exploratory study examined the role of technology in the expression of sexual behavior and is the first to examine these technological sexual behaviors as they relate to exhibitionistic behaviors. Overall, three key findings emerged. First, approximately one third of participants engaged in sending sexually provocative images and approximately one quarter reported sending nude images, with the majority of these photos being sent to the participant's significant other. Second, the most frequently reported motivations for engaging in both technological and traditional sexual behaviors were arousal, confidence, and excitement. Finally, a small portion of male respondents endorsed engaging in both sending nude images and behaviors similar to traditional exhibitionism.

The vast majority of participants who endorsed sending both sexually provocative and nude images reported sending these photographs to their significant other. In accordance with existing literature, sending sexually explicit images appears to have become part of the flirting repertoire of young adults who are in sexually active relationships (Levine 2013). Approximately one quarter of our participants engaged in sending and receiving sexually explicit images in addition to having sexual intercourse. This exchange of sexually explicit photographs seems to be one of the many ways that teens and young adults are connecting with one another sexually, with the help of modern technology.

One possible explanation for the sexting phenomenon is that this behavior is a digitalized version of the development of adolescent sexual exploration and curiosity (Sadhu 2012). The exchange of sexually explicit images between romantic partners seems to be an evolving way of flirting (The

National Campaign to Prevent Teen and Unplanned Pregnancy 2008). Sending sexually explicit images may allow the sender to safely experiment with their sexuality in a digital form (Judge 2012). In our sample, 15.8% of participants reported that exchanging sexually explicit images was a safe way to express their sexuality.

Participants from this study were also motivated to send sexually explicit photographs to significant others who were physically absent. Participants reported that sending sexually explicit images to those with whom they are in a “serious long term relationship” is considered harmless, providing increased support for the theory that sending these nude or semi-nude pictures are electronic manifestations of courtship behaviors. Previous studies have found, within committed relationships, partners may send sexually explicit images in an effort to sustain intimacy with those who are physically absent, for example long distance relationships or military deployment (Drouin et al. 2013).

A significant proportion of participants who endorsed engaging in both technological and traditional exhibitionist-like behaviors reported being motivated to engage in these activities due to feelings of arousal, confidence, and excitement. Although traditional exhibitionists may report similar motivations for engaging in sexual paraphilias, these motivations seem to be most connected to normal sexual exploration experienced during adolescence and young adulthood. According to Sadhu, teens and young adults experience increased levels of sexual interest during this period of identity formation (2012). Additionally, intoxication was a significant motivator for males to send nude images. A common short term effect of alcohol is impaired judgment and decision making (Council on Drug Abuse 2011). Drinking alcohol to the point of intoxication and then sending nude images of oneself can have substantial short- and long-term consequences. Given that decisions made while intoxicated are often not well thought out, this could have potential legal and social ramifications as the sender loses control of the image once it is sent.

As adolescents and young adults are exploring their sexuality, there is a normal level of narcissism; therefore, the person may experience higher levels of confidence and thus be more inclined to expose their body either physically or via technology, in order to gain attention from others (Korenis and Billick 2013; Sadhu 2012) or show off their bodies (Sadhu 2012). Conversely, participants may also report confidence when engaging in technologically driven sexual behaviors due to the protective layer created by the electronic device. By exposing oneself through technology, the sender may feel this is a safer option with less of a chance of rejection rather than exposing oneself in person.

Consistent with the low rates of reported rates of exhibitionistic disorder found in the DSM-5 (APA 2013), our study found that only a small percentage of participants reported engaging in behaviors similar to traditional exhibitionism (5.6%; $n = 56$). Previous researchers have noted there is a fine line between the urge to expose oneself as appropriate sexual interest during adolescence/young adulthood versus traditional exhibitionistic behavior (Murphy and Page 2008). Males who have been diagnosed with exhibitionistic disorder retrospectively report that the desire to expose their genitals to others began during adolescence (Murphy and Page 2008). Although some exhibitionistic behaviors among adolescents may be considered harmless, we found that out of the 56 participants who endorsed engaging in exhibitionistic behaviors, 19 of those participants also reported sending nude images via technology. This suggests that these individual's sexual behavior may go above and beyond adolescent shenanigans and could possibly be indicative of a nascent paraphilic behavior.

Limitations

There were some limitations to the current study that should be noted. First, as there has been very little empirical research directed at understanding the incidence and prevalence of exhibitionism and technological sexual behavior, we were unable to use a validated measure. Future research would benefit from development of a standardized and validated measure to enable results to be compared

and understood across samples. Second, it is possible that the participants both under- or over-reported the rates of sexual behaviors and exhibitionistic behaviors. This is the inherent result of the use of uncorroborated self-report measures. However, given that most people who are victims of exhibitionists, or who engage in the behavior themselves, do not come into contact with either the mental health system or the criminal justice system, it is often difficult to get verification of behaviors outside of self-report. In addition, the sample used in this study was largely a convenience sample, and was relatively young (average age 21 years), thus the results of this study may not be indicative of the behaviors of other samples or age groups. On the other hand, most sexual paraphilias develop in early adulthood, thus this population would be a representative sample as young adults are most apt to use technology, and therefore are more likely to engage in both technological and traditional exhibitionistic behavior. Finally, the number of male participants was smaller than that of the female participants and thus future research with a larger sample of male respondents would be beneficial to draw more robust conclusions, especially since it appears that it is the males (as opposed to the females) that may be engaging in technological exhibitionistic behaviors.

Recommendations and future directions

Not only does this study have implications for understanding the general prevalence, motivations, and emotions related to technological courtship behaviors, it has revealed the possibility of using technology for sexual purposes beyond evolving dating/flirting behaviors. A portion of the participants endorsed engaging in both the traditional and technological forms of sexual behavior, which may suggest the presence of a sexual paraphilic behavior. Future studies need to further investigate the individuals who are engaging in both behaviors similar to traditional exhibitionism as well as sending nude images. Since this study is the first of its kind, scientists are still researching the motivations driving these sexual behaviors. In the future, it would be beneficial to complete in-depth clinical interviews with participants, who are engaged in both traditional and technological sexual paraphilic-like behaviors, to gain additional details into the motivations behind these actions.

Anthony Weiner, a state congressman, risked his career by participating in sending nude images to unsuspecting women. His behavior suggested that the urge to send sexually explicit images took precedence over his judgment, ultimately costing him his career and reputation. As technology continues to consume our lives in the twenty-first century, sexual paraphilic-like behavior expressed through technology may become more prevalent, especially with evolving smartphone applications such as SnapChat.

In conclusion, our results showed that most participants engaging in technological and traditional sexual behaviors are engaging in normal young adult dating behaviors. There were subsets of participants who engaged in both behaviors similar to exhibitionism and sending nude images. While many of these actions may be electronic extensions of normal young adult courtship behaviors, it appears that in some cases the combination of engaging in technological sexual behaviors, as well as behaviors similar to traditional exhibitionism, may be indicative of an electronic manifestation of a paraphilic disorder. Given the limited research on exhibitionistic behavior and the near total lack of research on exhibitionistic behaviors in a technological realm, this exploratory study adds to the understanding of the frequency and motivations behind engaging in exhibitionistic behaviors in a technological and traditional sense.

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