

## The Prevalence of Paraphilic Interests and Behaviors in the General Population: A Provincial Survey

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*Paraphilic sexual interests are defined as unusual or anomalous, but their actual occurrence in nonclinical samples is still unknown. This study looked at desire for and experience of paraphilic behaviors in a sample of adult men and women in the general population. A secondary goal was to compare the results of two survey modes—traditional landline telephone versus online. A total of 1,040 persons classified according to age, gender, education, ethnic background, religious beliefs, area of residency, and corresponding to the norm for the province of Quebec were interviewed. Nearly half of this sample expressed interest in at least one paraphilic category, and approximately one-third had had experience with such a practice at least once. Voyeurism, fetishism, frotteurism, and masochism interested both male and female respondents at levels above what is usually considered to be statistically unusual (15.9%). Interestingly, levels of interest in fetishism and masochism were not significantly different for men and women. Masochism was significantly linked with higher satisfaction with one's own sexual life. As expected, the online mode generated more acknowledgment of paraphilic interest than the telephone mode. These results call into question the current definition of normal (normophilic) versus anomalous (paraphilic) sexual behaviors.*

In the 2013 *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (*DSM-5*, American Psychiatric Association [APA], 2013), sexual interests are categorized as either normophilic (normal) or paraphilic (anomalous). A normophilic sexual interest is an “interest in genital stimulation or preparatory fondling with phenotypically normal, physically mature, consenting human partners” (APA, 2013, p. 685). Any other sexual interest is considered to be paraphilic (nonnormophilic). Eight examples of paraphilic interests are given: voyeurism, exhibitionism, frotteurism, masochism, sadism, pedophilia, fetishism, and transvestism. Paraphilic interest can take three forms: (a) mental disorder, in which the paraphilic interest is recurrent, intense, and causes suffering or impairment or the behavior is illegal and acted out (i.e., voyeurism, exhibitionism, frotteurism, nonconsenting sadism, and pedophilia); (b) paraphilia, in which the paraphilic interest is recurrent and equally or more intense than normophilic sexual interests but does not induce suffering or impairment; or (c) “anomalous,” in which the paraphilic interest is less persistent and intense than normophilic interests. Surprisingly, the basis for considering sexual interests to be nonnormophilic is unclear, especially for those interests that involve consenting

partners. Experts in the field sometimes refer to paraphilia as a sexual drive “outside the normal” that involves “sexual behavior that deviates significantly from the norm” (Bradford & Ahmed, 2014, pp. xi–xii), but what these norms actually are is still unknown.

In *DSM-5*, sexual interests are defined as fantasies, urges, or behaviors. However, sexual fantasies considered to be paraphilic are common not only among college students (Arndt, Foehl, & Good, 1985; Leitenberg & Henning, 1995) but also in the general population, especially fantasies related to sadomasochism or, more precisely, BDSM (bondage, domination, submission, sadism, and masochism) (Joyal, Cossette, & Lapierre, 2015). More than 60% of male college students report fantasizing about sadism and bondage (Williams, Cooper, Howell, Yuille, & Paulhus, 2009). Male college students may even fantasize about bondage and mildly coercive themes more frequently than sex offenders do (Daleiden, Kaufman, Hilliker, & O’Neil, 1998; O’Donohue, Letourneau, & Dowling, 1997). More than 50% of female college students report having had sexual fantasies in which they submitted to force (Strassberg & Lockerd, 1998) or intrusive thoughts about being sexually victimized (Byers, Purdon, & Clark, 1998). The fact that certain sexual fantasies considered to be paraphilic by *DSM-5* are common among the general population suggests that labeling them “anomalous” is incorrect.

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Of course, to fulfill *DSM-5* criteria of a paraphilia, a sexual fantasy should also be preferential or as intense as a “normophilic” interest (APA, 2013). To ascertain that criteria, *DSM-5* suggests asking examinees whether their paraphilic sexual fantasies are weaker than, approximately equal to, or stronger than their normophilic sexual fantasies (p. 686). Interestingly, multiple correspondence analyses showed that four subgroups of a nonclinical sample, representing 57% of the participants, met that criterion for sexual fantasies (Joyal, 2015).

Sexual fantasies should not, however, be confused with sexual interests, especially among women. Qualitative analysis of self-reported sexual fantasies has demonstrated that the mere presence of a paraphilic sexual fantasy is not necessarily indicative of a paraphilic interest (or desire), at least in nonclinical samples (Joyal et al., 2015). Indeed, many respondents who reported submissive or rape fantasies specified that they would never want to have such experiences (see also Masters, Johnson, & Kolodny, 1988, pp. 271–272). As sexual fantasies are thus not a good indicator of genuine interest in behaviors, it is more appropriate to deal directly with past behaviors or with the expressed wish to realize a desire or fantasy in determining rates of paraphilia in the general population.

The main goal of the present study was to determine levels of paraphilic interests in a nonclinical, nearly representative sample of adult participants. Another objective was to provide a thorough review of existing surveys about paraphilic interests in the general population. Finally, this study compares rates of acknowledgment of paraphilic interests as reported in telephone or online survey modes.

### Rates of Paraphilic Interests (Desire or Behaviors) In Nonclinical Samples

Very little information about paraphilic desire or behaviors has been obtained from nonclinical samples. In a sample drawn from male young adults and college students, approximately half (52%) acknowledged interest in voyeurism and one-quarter (28%) expressed interest in fetishism (Dawson, Bannerman, & Lalumière, 2016). Two-thirds of another sample of college students (men and women) admitted they would engage in voyeurism if they were certain there would be no consequences (Rye & Meaney, 2007). We were able to identify only a handful of large-scale studies on paraphilic desire or behaviors in the general population. Two of these studies—the Swedish National Survey of Sexuality and Health (Långström & Hanson, 2006; Långström & Seto, 2006; Långström & Zucker, 2005), and the Australian Study of Health and Relationships (Richters, De Visser, Rissel, Grulich, & Smith, 2008; Richters, Grulich, Visser, Smith, & Rissel, 2003)—were based on representative samples of a given population. These two surveys suggest that paraphilic behaviors are unusual (based on the normal curve criteria for rarity, they affect less than 2.3% of the population

or are two standard deviations below the median or the mean) or atypical (they affect less than 15.9% of the population or are one standard deviation below the median or the mean). In Sweden, for instance, lifetime prevalence rates for experience with sadomasochism, transvestism, exhibitionism, and voyeurism were 2.5%, 2.8%, 4.1%, and 11.5%, respectively, among men. It should be noted, however, that these data were obtained as part of a larger study that did not focus on paraphilia and excluded other, perhaps common, paraphilic behaviors (e.g., frotteurism, fetishism). More importantly, the descriptions of paraphilia used in the study did not necessarily correspond to those used in psychiatric manuals. Sadomasochism, for instance, was defined as “deliberately using physical pain” (Långström & Seto, 2006). Given that pain is not necessarily involved in sexual sadism or masochism (e.g., bondage, humiliation), these numbers might underestimate the true prevalence of interest. It would also be interesting to consider sadism and masochism separately. Finally, these data were collected in 1996, before Internet access was widespread. It is plausible that increased use of the Internet and mainstream publication of such novels as *Fifty Shades of Gray* are associated with increased diversity in sexual interests, including sadomasochism (Peter & Valkenburg, 2006).

In the Australian Study of Health and Relationships, only 2.2% of sexually active men and 1.3% of sexually active women reported involvement in bondage and discipline or sadomasochistic activities, which were considered to be rare events (Richters et al., 2008). However, these rates concerned behavior only in the year before the survey, and no data were collected for other paraphilic behaviors. It seems clear, therefore, that they underestimate the real prevalence of paraphilic behavior.

All other studies of the prevalence of paraphilia in nonclinical samples were based on samples of volunteers and reported higher rates. The first large-scale investigations to include measures of paraphilic behaviors were the classic Kinsey studies (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953), which found that 24% of men ( $N = 5,300$ ) and 12% of women ( $N = 5,940$ ) had at least some erotic response to sadomasochistic stories. However, these early studies were severely criticized for methodological flaws (e.g., using a convenient sample of volunteers, virtually all of whom were middle-class Caucasians; Cochran, Mosteller, & Tukey, 1953; Maslow & Sakoda, 1952). Another classic study, sponsored by the Playboy Foundation, was published by Hunt (1974). Among 2,026 adults recruited in 24 cities across the United States, only 3.5% acknowledged ever obtaining pleasure by inflicting pain (4.8% for men, 2.1% for women) and 3.6% acknowledged ever obtaining pleasure in receiving pain (2.5% for men, 4.6% for women); but, again, the questions were limited to painful stimulation. Janus and Janus (1993) surveyed 2,765 American adults about several paraphilic behaviors and reported a higher

lifetime prevalence than previously reported for some activities, including sadomasochism (14% in men, 11% in women), domination or submission (11% in men, 11% in women), fetishism (11% in men, 6% in women), and urophilia (6% in men, 4% in women). Voyeurism was not surveyed. That study was also highly criticized, however, for several methodological flaws, including the recruiting process (à la Kinsey) and the lack of statistical analyses (e.g., Davis, 1993; Laumann, Gagnon, Michael, & Michaels, 1994). In addition, questions concerned respondents' attitudes toward paraphilic behaviors, not experiences with them.

More recently, Makanjuola, Adegunloye, and Adelekan (2008) found a prevalence rate of 22% for experience with paraphilic behaviors among 408 male and female high school teachers in Nigeria. Voyeurism, again, was the most popular at 10% (see also Abdullahi, Jafojo, & Udofia, 2015's study with Nigerian university students). However, some criteria for inclusion in these studies were clinical (i.e., feeling guilt, discomfort, or anxiety related to sexual interest), meaning that paraphilic enthusiasts with no guilt or discomfort about their sex lives were eliminated. Moreover, data concerning fetishism, sadism, and masochism were not collected by Makanjuola et al. (2008). In Brazil, Oliveira and Abdo (2010) conducted an ambitious investigation based on individual face-to-face interviews with 7,022 persons. They found that 52% of men had had at least one lifetime "unconventional" sexual behavior (including non-paraphilic behaviors such as swinging, ménage à trois, and group sex). The two most frequently reported unconventional behaviors were paraphilic: voyeurism (13%) and fetishism (13%). These rates are still in the statistically unusual range (less than 15.9%), although specific behaviors were not segregated by gender so were almost certainly higher for men. In Germany, Ahlers et al. (2011) reported that 44% of a community sample of men acknowledged at least one lifetime paraphilic behavior as defined using phenomenological descriptions derived from the eight examples of the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*). The highest rates were associated with fetishism (24.5%) and voyeurism (18%). However, that sample was of a very specific subgroup of participants (male Berliners aged 40 to 79 who agreed to visit the study site; 19% response rate), so those numbers, as acknowledged by the authors, might represent overestimations.

Overall, the prevalence of paraphilic behaviors among nonclinical populations varies substantially in the few studies that exist, which were conducted in different eras, with different definitions, and using diverse data collection methods. Still, it is worth noting that voyeurism and fetishism are consistently found to be the two most popular paraphilias among men. (Similar results were found more recently with written descriptions of

self-reported male sexual fantasies; see Joyal et al., 2015.) In addition, overall rates of paraphilic experience increased steadily from one era to another.

### Surveying Sexual Interests: On the Importance of the Mode of Contact

An important issue with surveys concerning sensitive subjects is the mode of contact. Existing surveys dealing with paraphilic interest and experience have tended to use different modes of contact. The Swedish survey was conducted mainly in person at respondents' homes (Långström & Hanson, 2006; Långström & Seto, 2006; Långström & Zucker, 2005); the German and Playboy studies required that participants visit a study site (Ahlers et al., 2011; Hunt, 1974); the Brazilian study was conducted through fortuitous encounters in streets and public places (Oliveira & Abdo, 2010); the Nigerian and Janus investigations used conventional mail (Janus & Janus, 1993; Makanjuola and colleagues, 2008); and the Australian survey was conducted over the telephone (Richters et al., 2008). Which approach is best when asking delicate questions is still unclear, however. The person-to-person approach at home is generally considered the state-of-the-art approach, although it may lead to underestimation of sensitive (e.g., sexual) matters, even when the respondent is isolated in a separate room, because the respondent still has to return the completed form to the interviewer (Långström & Zucker, 2005). The telephone approach has generated the highest response rate to date in paraphilia studies (73%, Richters et al., 2008), although the survey had to be conducted for over a year to reach that rate (a period generally possible only for government-sponsored surveys). Research suggests that the Internet is effective for this type of survey, and comparative data have shown that online surveys increase acknowledgment and accuracy about sensitive information (Kreuter, Presser, & Tourangeau, 2008; Link & Mokdad, 2005). However, the advantages of telephone and Internet surveys are still being debated (Stephenson & Crête, 2011; Yeager et al., 2011). Classic landline telephone surveys used to be considered a more valid approach than online administration because they allow probabilistic recruitment (and representative samples, which is not possible with the Internet). On the other hand, recent comparisons of these survey modes showed that Internet surveys generate better results because many young people are using smartphones rather than traditional landlines, making them more difficult to reach by telephone. This change has led specialists to predict the end of telephone surveys, at least in Canada (Grenier, 2013).

In view of this uncertainty, and given that the goal of the study was to estimate (not determine) the prevalence of paraphilic interest in a community-based sample, both survey modes (telephone and Internet) were used. This hybrid approach allowed us to estimate the rate of

paraphilic interest in a sample approaching representativeness and to compare rates of reports of paraphilic interest obtained via the telephone and the Internet. It was hypothesized that the Internet survey mode, given the relative anonymity it allows, would generate higher rates of acknowledgment of paraphilic interest than the telephone mode.

Most contemporary surveys on paraphilic sexual interests or fantasies have been conducted online (Dawson et al., 2016; Dombert et al., 2016; Joyal et al., 2015; Wurtele, Simons, & Moreno, 2014). Online surveys, however, generally obtain their information through commercial self-serve Web sites (although Dombert et al., 2016, used market research panels). While popular and inexpensive, self-serve Web sites prevent verification of basic information such as sociodemographic characteristics of participants (e.g., age, gender) and determination of response rates, making stratifications based on these characteristics impossible. Using a professional firm of interviewers makes it possible to address these problems (Stephenson & Crête, 2011). In addition, sociodemographic factors can be used to assess and address comparability between subgroups of participants (e.g., by weighting cases). It has been suggested, for instance, that respondents to online surveys on sexual behaviors are younger and better educated than respondents to surveys conducted through other modes (e.g., Ross, Månsson, Daneback, Cooper, & Tikkanen, 2005).

The first goal of the present study was to estimate the prevalence of interest (both desire to experience and actual experience) in the eight examples of paraphilia provided by the *DSM-5* (Criteria A for voyeurism, exhibitionism, frotteurism, pedophilia, fetishism, masochism, sadism, and transvestism). Another objective was to assess the link, if any, among these different paraphilic interests, childhood sexual abuse, and general satisfaction with sexual life. Contrary to what many assume, paraphilic behaviors, especially those related to BDSM, seem to be associated with better-than-average psychological adjustment, education, and socioeconomic levels, and not with childhood abuse (Richters et al., 2003, 2008; Wismeijer & Assen, 2013). Having sexual fantasies related to BDSM activities is also a good predictor of a higher diversity and intensity of sexual fantasies in general (Joyal et al., 2015). Finally, this study compared rates of acknowledgment of paraphilic interests between survey modes and between genders.

We tested four principal hypotheses. First, we expected that the overall rate of paraphilic interest in this community-based sample would be higher than what has been held to be statistically atypical or unusual (i.e., more than 15.9%). Second, we predicted that prevalence of lifetime interest (behavior or desire) in three specific paraphilias (fetishism, voyeurism, and masochism) would be higher than for other paraphilic behaviors in both men and women. Third, we hypothesized that persons practicing sadistic or masochistic behaviors would

be no more likely than others to have suffered childhood abuse. On the contrary, these persons were expected to be more sexually satisfied than persons who do not practice BDSM. Finally, we expected that online rates of acknowledgment of paraphilic behaviors would be significantly higher than those obtained via the telephone.

## Method

### Participants and Procedures

Respondents were selected and interviewed by three female professional interviewers from an independent private firm, the Bureau of Professional Interviewers (<http://www.bip-sondage.com>), between August 9 and September 8, 2014. Data were obtained from 1,040 adults ages 18 to 64 years old who matched as closely as possible the corresponding population of the province of Quebec (at least 1,000 respondents are required to obtain an adequate representation of the adult population of the province; Institut de la Statistique du Québec, 2015; Stephenson & Crête, 2011; in 2013 the population of 18- to 64-year-olds was 5,079,841). The questionnaire was available in French or English, the two official languages of the province. The telephone survey was administered to a probabilistic sample of 500 respondents, and the same questionnaire was completed by 543 Internet respondents. The Internet sample was drawn from a panel of volunteers who were representative of the Quebec population. Both samples (telephone and Internet) were stratified by region (proportionally), and individuals were selected randomly within each stratum. The Internet sample is a probabilistic sample of the Internet panel. However, this sample cannot be considered representative of the Quebec population because it is not possible to reach a truly probabilistic sample through the Internet. Still, this approach makes it possible to approach representativeness (Stephenson & Crête, 2011).

Sample strata for age (18–24: 6.5%; 25–34: 17.9%; 35–44: 23.5%; 45–54: 28%; and 55–64: 24.1%), ethnic background (Caucasian: 88.3%, other: 19.7%), academic achievement (none: 0.9%; primary school: 2.4%; high school: 19.8%; technical or preparatory school: 33.9%; college: 22.7%; higher education: 13.1%), administrative region (17 regions, including Montreal, 20.4%, and Quebec city, 12.8%), and religious beliefs (Catholicism: 73.0%; none: 16.4%, other: 10.6%) all corresponded to proportions in the population of the province of Quebec (Institut de la Statistique du Québec, 2015). To achieve this representativeness, however, and to provide comparable intergroup comparisons between each survey mode, phone data collection with respondents aged between 45 and 64 years was stopped after two weeks because of overrepresentation. In contrast, 40 additional Web surveys had to be conducted with persons living in rural regions to achieve representativeness. These data confirm that

persons reached by landline phones tend to be older than those reached via the Internet and that persons reached via Internet are more likely to live in urban centers than those reached by landline phones. (The use of cellular phone numbers for survey purposes was banned in Canada at the time of the study.) As usual with surveys concerning sexual behaviors, women were slightly overrepresented (54.3%). Given that data for this study are considered separately by gender, no statistical correction was undertaken to address this difference. The response rate (30.2%) corresponded to that for general private surveys conducted in Canada (especially those conducted over a four-week period; Public Works and Government Services of Canada, 2013), although the rate was somewhat higher via telephone (32.4%) than Internet (28.0%).

### Instrument

Following sociodemographic inquiries (mentioned previously), questions relative to participants' general sex lives were asked: approximate number of lifetime partners, approximate frequency of current sexual relations with partners, current frequency of pornography consumption, overall satisfaction with current sex lives (*Exciting/Satisfying/Neutral/Unsatisfying/Depressing/Prefer not answering*), and childhood (12 years old or less) sexual experience with older persons (adults or adolescents three years older or more). The phrasing "childhood sexual experience with an older person" was preferred to the term "childhood sexual abuse" because some participants, especially men, might not consider such an experience as abuse. Questions derived from the Questionnaire on Sexual Experiences and Behaviour (Ahlers, 2010; Ahlers et al., 2011) were then asked about the phenomenology of paraphilic behaviors provided in the *DSM-5*, including the presence of sexual arousal:

1. Fetishism: "Have you ever been sexually aroused by an inanimate non-sexual object? Please note that a vibrator does not enter into this category?";
2. Transvestism: "Have you ever been sexually aroused by wearing clothing from the opposite sex?";
3. Voyeurism: "Have you ever been sexually aroused while watching a stranger, who was unaware of your presence, while they were nude, were undressing, or were having sexual relations?";
4. Exhibitionism: "Have you ever been sexually aroused by showing your genitals to a stranger who was not expecting this?";
5. Frotteurism: "Have you ever been sexually aroused by touching or by rubbing yourself against a stranger?";
6. Pedophilia: "Have you ever engaged in sexual activities with a child aged 13 years old or less after you were an adult?";

7. Masochism: "Have you ever been sexually aroused while suffering, being dominated, or being humiliated?";
8. Sadism: "Have you ever been sexually aroused by making someone suffer, or by dominating or psychologically or physically humiliating another person?"; and
9. Other behavior: "Have you ever been sexually aroused by an animal, fecal matter, enema, urine, cadavers, or other unusual things? If yes, please specify."

Note that the pedophilia item did not include sexual arousal criteria because in that case behavior only was sufficient. An additional item—"extended exhibitionism (couple)," which refers to having sex with a partner in front of other people or where you are at risk of being seen ("Have you ever been aroused by engaging in sexual acts with a consenting partner knowing that someone was watching you or could be watching you?")—was also included. For each item (except "other behaviors"), respondents were asked whether and how often they had actually engaged in the activity (0 = *I have never done it*; 1 = *I did it once*; 2 = *I did it sometimes, 2–10 lifetime*; 3 = *I did it often, more than 10 times lifetime*). Following each item, a secondary question, based on the same behavioral definition, was asked concerning the desire to experience it (e.g., "Would you like to show your genitals to a stranger who is not expecting it?"; "Would you like to engage in sexual acts knowing that someone is watching you or could be watching you?"). Desire was assessed on an intensity-graded scale (0 = *Not at all*; 1 = *I have thought about it*; 2 = *Maybe*; 3 = *Absolutely*). It took approximately 10 minutes to complete the survey.

### Paraphilia versus Paraphilic Interests

To estimate rates of paraphilia (Criterion A of the *DSM-5*), intensity and persistence of desires and experiences, respectively, were computed. For each paraphilic theme, the prevalence of responses was divided in three categories, both for desires (*Not at all* or *I thought about it*; *Maybe* or *absolutely*, and *Absolutely*) and experience (*No* or *once*; *Sometimes* or *often*; and *Often*). The *Absolutely* and *Often* categories were considered as evidence for intense and persistent interests, respectively.

### Statistical Analyses

Paraphilic experience was dichotomized between *Never* (rate of 0) and *At least once in lifetime* (rates of 1 to 3). Desire for paraphilic activities was dichotomized between *Not at all* (rate of 0) and *At least some interest* (rates of 1 to 3). Frequencies were obtained for the whole sample, then separately for both genders, and separately for both survey modes. Difference between genders and survey modes was assessed with chi-squares (Bonferroni corrected) and odds

ratios. The strength of the links between different paraphilia (both for experience and desire) was assessed with Kendall Tau-B correlations for ordinal categorized variables. Given that virtually all correlations would be significant with an alpha set at 0.05 for a sample of more than 1,000 participants (e.g., Dawson et al., 2016), only correlations with a medium effect size ( $r = .30$  or more) were considered significant. The link between each paraphilic behavior and childhood sexual abuse, on one hand, and between each paraphilic behavior and sexual life satisfaction, on the other hand, was assessed with binary logistic regressions.

**Ethical Considerations**

This study was approved by the ethical committee of the University of Trois Rivieres. Respondents could end their participation, contact the main investigator, and/or receive professional counseling at any time. Data were collected anonymously. Once the interview started, all personal information was automatically erased from the system, making it impossible to call the same person again or to complete an interview at another time. Similarly, no personal number, Internet identification protocol, or cookies could be used.

**Results**

Merging both survey modes and genders revealed that nearly half the sample (45.6%) acknowledged a desire for (wish to realize) at least one paraphilic behavior and approximately one-third (33.9%) had engaged in a paraphilic behavior at least once during their lifetimes. Voyeurism was the most common theme (46.3% desire and 34.5% experience, respectively), followed by fetishism (44.5% and 26.3%, respectively), extended exhibitionism—couple (30.6% and 30.1%, respectively), frotteurism (26.7% and 26.1%, respectively), and masochism (23.8% and 19.2%, respectively). These categories showed rates of occurrence higher than those considered rare (2.3%) or unusual (15.9%) according to the statistical normal curve (Tables 1a and 1b).

Significantly higher rates of desire and experience were reported by men than by women for voyeurism (60.0% versus 34.7% and 50.3% versus 21.2%, respectively), and frotteurism (34.2% versus 20.7% and 32.4% versus 20.5%, respectively), whereas significantly higher rates of masochistic desires and experience were reported by women than by men (27.8% versus 19.2% and 23.7% versus 13.9%, respectively) (Tables 1a and 1b).

As for survey modes, the Internet generated significantly higher rates of acknowledgment of experience with voyeurism, fetishism, extended exhibitionism—couple, frotteurism, and masochism than the telephone (Table 2). The telephone mode failed to generate a higher rate of acknowledgment for any paraphilia when compared with the Internet mode (Table 2). As shown in Table 2, the magnitude of differences between survey modes was not especially strong (ranging from .08 to .15 for significant paraphilia), although  $p$  levels were highly significant. Importantly, no difference emerged between subgroups of participants (Internet versus telephone) for any sociodemographic variable except educational level. Persons surveyed via telephone were significantly more likely to have a high school diploma as their highest educational level than persons surveyed online (25.8% versus 14.3%, respectively), while online respondents were significantly more likely to have a baccalaureate degree (18.8% versus 26.3%;  $p < 0.001$ ; members of both groups were equally likely to have a college<sup>1</sup> degree; 25.2% versus 26.9%). Given that higher education per se has been closely and persistently associated with a higher diversity of sexual practices (e.g., Bajos & Bozon, 2008; Billy, Tanfer, Grady, & Klepinger, 1993; Hunt, 1974; Kinsey et al., 1948; Laumann et al., 1994), controlling for the effect of educational level is important. In this study, the survey mode generated a difference of approximately 10% between high school (telephone) and university (online) achievement, so cases were weighted accordingly (i.e., a value of 1.2, or an additional 20%, was given to the telephone respondents versus 1.0 to the Internet

**Table 1a.** Prevalence (%) and Odds Ratios (Men versus Women) for Desire (Wish to Experience) Paraphilic Behaviors Among 1,040 Adults (475 Men and 565 Women) Surveyed in the General Population (Presented in Descending Order of Prevalence)

	Overall	Men	Women	X <sup>2</sup>	p	ES	OR	CI (95%)
Voyeurism	<b>46.3</b>	60.0*	34.7	66.5	.000	.25	2.8	2.2–3.6
Fetishism	<b>44.5</b>	40.4	47.9	5.95	.015	.08	1.4 <sup>+</sup>	1.1–1.7
Exhibitionism (extended)	<b>30.6</b>	35.0	26.9	7.87	.005	.09	1.5	1.1–1.9
Frotteurism	<b>26.7</b>	34.2*	20.7	24.3	.000	.15	2.0	1.5–2.6
Masochism	<b>23.8</b>	19.2	27.8*	10.6	.001	.10	1.7 <sup>+</sup>	1.3–2.0
Sadism	7.1	9.5	5.1	7.4	.007	.08	1.9	1.2–3.1
Transvestism	6.3	7.2	5.5	1.23	.27	.03	1.3	0.8–2.2
Exhibitionism (strict)	4.5	5.9	3.4	3.8	.05	.06	1.8	1.0–3.3
Sex with child	0.6	1.1	0.2	NA	NA	NA	6.0	0.7–51.5

Note. See Method section for definitions of paraphilia terms. ES = effect size; OR = odds ratio (men/women); CI = confidence intervals; NA = not applicable (includes cell frequencies with less than five persons). **Bold** = rates higher than statistical criteria (normal curve) for unusual (15.9%) occurrence.

\*Significantly different from opposite gender after Bonferroni correction (.05/9 = .006).

<sup>+</sup> 1/OR (women more likely than men).

**Table 1b.** Prevalence (%) and Odds Ratios (Men versus Women) for Experience (at Least One Lifetime Act) With Paraphilic Behaviors Among 1,040 Adults (475 Men and 565 Women) Surveyed in the General Population (Presented in Descending Order)

	Overall	Men	Women	X <sup>2</sup>	p	V	O.R.	CI (95%)
Voyeurism	<b>34.5</b>	50.3*	21.2	96.5	.000	.31	3.8	2.9–4.9
Fetishism	<b>26.3</b>	30.1	23.2	6.4	.012	.08	1.4	1.1–1.9
Exhibitionism (extended)	<b>30.9</b>	32.6	29.4	1.3	.258	.03	1.2	0.9–1.5
Frotteurism	<b>26.1</b>	32.4*	20.5	18.4	.000	.13	1.8	1.4–2.4
Masochism	<b>19.2</b>	13.9	23.7*	16.0	.000	.12	2.0 <sup>+</sup>	1.4–2.5
Sadism	5.5	7.4	3.9	6.0	.014	.08	2.0	1.1–3.4
Transvestism	4.9	6.5	3.5	4.9	.026	.07	1.9	1.1–3.4
Exhibitionism (strict)	5.0	7.8*	2.7	14.3	.000	.12	3.1	1.7–5.7
Others	3.6	4.8	2.5	4.2	.04	.06	2.0	1.0–3.8
Sex with child	0.4	0.6	0.2	NA	NA	NA	3.6	0.4–34.6

Note. See Method section for definitions of paraphilia terms. ES = effect size; OR = odds ratio (men/women); CI = confidence intervals; NA = not applicable (includes cell frequencies with less than five persons). **Bold** = rates higher than statistical criteria (normal curve) for unusual (15.9%) occurrence.

\*Significantly different compared to opposite gender after Bonferroni corrections (.05/10 = .005).

<sup>+</sup> 1/OR (women more likely than men).

**Table 2.** Prevalence (%) of Experience (at Least Once in Lifetime) With Paraphilic Behaviors Among 1,040 adults (n = 475 Men and 565 Women) Surveyed in the General Population According to Survey Mode

	Overall	Internet	Telephone	X <sup>2</sup>	p	ES	OR	CI (95%)
Voyeurism	<b>34.5</b>	38.3*	30.4	7.2	.007	.08	1.4	1.1–1.8
Fetishism	<b>26.3</b>	31.5*	20.8	15.3	.000	.12	1.8	1.3–2.3
Exhibitionism (extended)	<b>30.9</b>	37.0*	24.2	20.1	.000	.14	1.8	1.4–2.4
Frotteurism	<b>26.1</b>	32.2*	19.2	22.2	.000	.15	2.0	1.5–2.6
Masochism	<b>19.2</b>	23.9*	14.2	15.7	.000	.12	1.9	1.4–2.6
Sadism	5.5	6.3	4.6	1.4	.230	.04	1.4	0.8–2.4
Transvestism	4.9	5.7	4.0	1.7	.194	.04	1.5	0.8–2.6
Exhibitionism (strict)	5.0	5.2	4.7	0.8	.776	.01	1.1	0.6–1.9
Others	3.6	5.9*	1.0	18.4	.000	.13	6.2	2.4–16.1
Sex with child	0.4	0.7	0	NA	NA	NA	0.9	0.9–1.0

Note. See Method section for definitions of paraphilia terms. ES = effect size (phi); OR = odds ratio (Internet/telephone); CI = confidence intervals; NA = not applicable (includes cell frequencies with less than five persons). **Bold** = rates higher than statistical criteria (normal curve) for unusual (15.9%) or rare occurrence (2.3%).

\*Significantly different compared to telephone mode after Bonferroni correction.

correspondents). Following these corrections, the level of significant differences between subgroups diminished slightly but remained high (e.g., *p* value < 0.007 was elevated to < 0.009 for voyeurism).

**Correlations**

According to our strict criteria of significance (*r* > .30), no paraphilic experience was significantly associated with another, although the link between sadism and masochism was close (*r* = .291; Table 3). However, desiring to practice masochism was significantly associated not only with the desire to practice sadism but also with fetishism and having sex in front of other people (extended exhibitionism—couple). Desire for voyeurism was also significantly associated with desire for extended exhibitionism—couple and frotteurism (Table 3).

A total of 82 participants (7.9%) reported having had a sexual experience with an adult or an adolescent when they

were 12 years old or younger (no difference between gender or survey mode). This figure corresponds approximately to what has been found for the male population of the province of Quebec (9.7%; Hébert, Tourigny, Cyr, McDuff, & Joly, 2009) and is lower than the rate for females (22.1%; Hébert et al., 2009), although those rates are based on events that occurred before the age of 18, in contrast with the present results, which concern events occurring before the age of 12. The present results reflect the fact that prepubescent victims of sexual contact are generally boys, while adolescent victims are more likely to be girls. According to binary logistic regression, only frotteurism had a significant value in detecting past childhood sexual abuse: Participants who had engaged in at least one act of frotteurism were 2.7 times more likely than other persons to report a sexual experience with an older person when they were a child (*p* < .0001; confidence intervals: 1.6 to 4.4). A total of 120 participants (11.5 %) rated their current sexual lives as exciting (versus 50.6% as satisfying, 28.6% as neutral, 4.8% as unsatisfying,

**Table 3.** Correlation (Kandall Tau-B) Matrix for Paraphilic Experience (Top), Paraphilic Desire for Experience (Bottom), and Sexual Experience as a Child (CSE)

	Fetishism	Transvestism	Voyeurism	Exhib. (E)	Exhib. (S)	Frotteurism	Child	Masochism	Sadism	Others	CSE
Fetishism	—	.183	.194	.228	.086	.194	.083	.278	.186	.118	.091
Transvestism	.230	—	.185	.069	.092	.084	.135	.091	.106	.103	.036
Voyeurism	.225	.165	—	.264	.169	.257	.106	.089	.131	.125	.117
Exhib. (E)	.268	.189	<b>.420</b>	—	.145	.184	.115	.284	.199	.095	.119
Exhib. (S)	.093	.161	.201	.234	—	.174	.134	.073	.180	.171	.081
Frotteurism	.189	.167	<b>.376</b>	.280	.288	—	.086	.145	.079	.199	.180
Child	.053	.145	.125	.095	.235	.115	—	.062	.128	.244	.159
Masochism	<b>.341</b>	.132	.247	<b>.363</b>	.185	.135	.030	—	.291	.116	.082
Sadism	.213	.147	.243	.265	.180	.102	.178	<b>.375</b>	—	.162	.061
CSE	.062	.088	.070	.075	.093	.090	.168	.048	.038	.083	—

Note. CSE: Sexual experience as a child (12 years old or younger) with an adult or an adolescent (three or more years older); exhib. (E) = exhibitionism extended (couple) definition; exhib. (S) = exhibitionism strict definition; **Bold** = significant correlations (medium effect size of .30 or more).

3.5% as depressing, and 1.1% refused to answer). Another binary logistic regression revealed that two sexual behaviors were associated with significantly higher odds of reporting an exciting sexual life: practicing fetishism (OR: 2.1,  $p = .001$ ; confidence intervals: 1.3 to 3.2) and practicing extended exhibitionism—couple (OR: 2.0,  $p = .001$ ; confidence intervals: 1.3 to 3.1). The chi-square for masochism was also significant (16% of the masochistic group reported exciting sexual lives versus 11.5% for the whole sample;  $\chi^2(1) = 5.3$ ,  $p = .022$ ), although the three behaviors were intercorrelated

(fetishism, extended exhibitionism, and masochism) and the link with masochism lost its significance in the regression.

**Paraphilia versus Paraphilic Interests**

As can be seen in Tables 4a and 4b, prevalence of paraphilia (intense and persistent desires or experiences) were low among the general population, with less than 10% for all paraphilic themes.

**Table 4a.** Prevalence (%) and Intensity of Desire (Wish to Experience) for Paraphilic Behaviors Among 1,040 Adults Surveyed in the General Population (Presented in Descending Order of Prevalence)

Paraphilic Behavior	Not at All or I Thought About It	Maybe or Absolutely	Absolutely
Voyeurism	70.9	29.1	9.6
Fetishism	70.3	29.7	8.3
Exhibitionism (extended)	80.7	19.3	4.8
Masochism	85.4	14.6	4.9
Frotteurism	85.0	15.0	3.8
Transvestism	95.8	4.2	0.6
Sadism	96.2	3.8	1.2
Exhibitionism (strict)	97.7	2.3	0.3
Others	98.0	2.0	0.2
Pedophilia	99.6	0.4	0

**Table 4b.** Prevalence (%) and Persistence of Experience With Paraphilic Behaviors Among 1,040 Adults Surveyed in the General Population (Presented in Descending Order of Prevalence)

Paraphilic Behavior	No or Once	Sometimes or Often	Often
Fetishism	77.2	22.8	3.4
Voyeurism	76.4	23.6	2.1
Masochism	86.3	13.7	1.4
Exhibitionism (extended)	82.5	17.5	0.8
Frotteurism	82.9	17.1	0.7
Transvestism	96.7	3.3	0.5
Sadism	96.8	3.2	0.3
Exhibitionism (strict)	98.0	2.0	0.1
Pedophilia	99.7	0.3	0



## Discussion

The main goal of this study was to evaluate the level of interest (desire and experience) in paraphilic behaviors among persons recruited from the general population. A secondary goal was to compare the rates of acknowledgment of such interest obtained by two different survey modes: Internet and landline telephone. Although obtaining a representative sample of participants (randomly and probabilistically selected) was not possible for the Internet, the sample was sufficiently large to represent major population strata of the province of Quebec. Results confirmed our first hypothesis: Of the eight examples of paraphilic behavior listed in *DSM-5*, four (voyeurism, fetishism, frotteurism, and masochism) were neither rare (less than 2.3%) nor unusual (less than 15.9%) in a nonclinical sample of adults, in terms of both experience and wish to experience in both men and women. This was also the case for an investigated behavior not listed in *DSM-5*: having sex with a partner in front of other people or in a situation where you are at risk of being seen (extended exhibitionism—couple). Overall, 45.6% of this sample would like to experience at least one paraphilic behavior, and 33.9% had engaged in paraphilic behavior at least once in the past. As expected, these numbers are lower than those found by Ahlers and colleagues (2011) for older Berliner males (44% experience). Still, they suggest that paraphilic interest is more common than usually expected, not only in terms of fantasies (Joyal et al., 2015) but also with regard to desire to experience and interest. These results also agree with findings that voyeurism and fetishism are consistently the two most popular responses among men (Ahlers et al., 2011; Dawson et al., 2016; Joyal et al., 2015; Makanjuola et al., 2008; Oliveira & Abdo, 2010).

These rates of desire for and experience of paraphilic behaviors are higher than those reported by studies conducted in the 1990s (e.g., Janus and Janus, 1993; Långström & Hanson, 2006; Långström & Seto, 2006; Långström & Zucker, 2005). It is possible that the increase is due in part to nonrepresentative samples (19% response rate in Ahlers et al., 2011; 32% for the present study). Although reaching approximately one-third of potential respondents is the norm in short-term Canadian surveys, it is well known that persons who agree to participate in sex studies are more open and more experienced sexually than nonrespondents (Bogaert, 1996; Strassberg & Lowe, 1995; Wiederman, 1999). Our respondents might therefore show a higher rate of interest in paraphilia. But this factor alone seems insufficient to account for such a large gap between studies conducted in the 1990s and more recent investigations. Our sample closely resembles the total population in terms of sociodemographic characteristics, suggesting that other factors, such as a decrease in embarrassment, shyness, or reticence about acknowledging alternative sexual practices, as well as the widespread availability of pornography on the Internet, might explain the higher acknowledgment of sexual diversity. If this is the case, our results might

simply reflect social and cultural influences on sexual behaviors (Laumann et al., 1994). It is interesting to note, for instance, that the most popular “normophilic” sexual fantasy nowadays for both genders is experiencing oral sex (Joyal et al., 2015), although cunnilingus was listed as disgusting evidence of pathological masochism by Krafft-Ebing (1886). In the same vein, it seems erroneous to qualify interest in noncriminal sexual behaviors, such as fetishism and BDSM as paraphilia, as they are neither atypical nor unusual, let alone anomalous.

The distinction between a paraphilic interest, a paraphilia, and a paraphilic disorder should be clear, however. In the present study, no paraphilic desire or paraphilic experience was reported as being frequent by more than 10% of the sample. Therefore, these data should not be interpreted as evidence of a high prevalence of paraphilic disorders or paraphilias among the general population. The main study goal was to investigate the appropriateness of labeling all paraphilic interests as anomalous. Clearly, beyond sexual fantasies, interests for voyeurism, fetishism, frotteurism, and masochism are not anomalous.

Another interesting result from this study is the link between interest in masochism and interest in other sexual activities. We have previously shown that the fantasy of being sexually dominated is a significant predictor for higher diversity and intensity of sexual fantasies in general (Joyal et al., 2015). The present study suggests that desire to practice masochism is significantly associated with more diverse sexual interests than any other “paraphilic” desire. This result supports the clinical impressions of Khar (2008) and Brenot (2012) that individuals (especially women) with masochistic (or, more precisely, submissive) sexual proclivities are the most satisfied, driven, and active sexually.

This study also provides further support (e.g., Richters et al., 2008) for rejecting the popular view that paraphilic interests, especially sadomasochism, are associated with childhood sexual abuse or trauma. In our study, only frotteurism was associated with childhood sex abuse. Our results also suggest that the online mode is a good choice for surveys dealing with sensitive questions such as sexual behavior and paraphilia. After controlling for educational levels, rates of acknowledgment of paraphilic interest were still higher than those obtained via the telephone, which was expected.

A major limitation of this study, as for most studies on sexual behavior, is the relatively low response rate. This problem is ethically inevitable, although response rates are significantly higher for more general (and national) surveys that include questions about sex (e.g., Långström & Zucker, 2005; Richters et al., 2003), compared to surveys such as ours, conducted over a short period and limited to questions about sexual behaviors. Another limitation of this study is the possible nonrepresentativeness of the sample due to use of the online survey mode. While these two aspects of the study might have inflated rates of acknowledgment of paraphilic interests, even conservative estimates of the present data argue against the notion that paraphilic interests are anomalous (*DSM-5*) or even unusual (*ICD-10*; WHO, 1993) for at

least half the examples (voyeurism, fetishism, masochism, and frotteurism) generally listed by psychiatric manuals. Two of these behaviors are illegal (voyeurism and frotteurism), so they are deviant from a legal perspective. The two other behaviors (fetishism and masochism) could be problematic (e.g., becoming necessary for satisfaction), although this is true for any sexual interest. It should be noted also that desire for fetishism and masochism was as high (if not higher) among women as among men. Therefore, the ubiquitous (and unreferenced) ratio of 20:1 for men versus women in terms of interest in paraphilic behavior (e.g., APA, 2000) is not true for all paraphilia (see also Abdullahi et al., 2015). It is true that men, in general, are more interested than women in paraphilic (or any) sexual behavior. However, the fact that 20% of women in this study expressed an interest in frotteurism argues against the idea that women's sexual interests are necessarily centered on "normophilic" behaviors.

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### Note

1. In Quebec, a university degree is preceded by a college degree.

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