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Abstract

The purpose of the present study was to explore the extent to which men and women in the general population report sexual interest in children and to examine distinct developmental experiences associated with self-reported sexual interest. Participants (262 females and 173 males) were recruited online and completed a questionnaire assessing sexual interest and adverse childhood experiences. Among men, 6% indicated some likelihood of having sex with a child if they were guaranteed they would not be caught or punished, as did 2% of women. Nine percent of males and 3% of females indicated some likelihood of viewing child pornography on the Internet. Overall, nearly 10% of males and 4% of females reported some likelihood of having sex with children or viewing child pornography. Males and females with any sexual interest in children reported higher likelihoods of engaging in other antisocial or criminal behaviors and also reported more dysfunctional childhoods (i.e., histories of sexual abuse, insecure parent–child attachments). Theoretical implications of the findings and suggestions for preventing the sexual victimization of children are provided.

Keywords

child sexual abuse, pedophilia, pornography

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Over the past decade, news coverage of child sexual abuse scandals occurring in youth-serving organizations has brought the issue of pedophilia into the public eye. Public comments about these cases suggest there is considerable confusion about why well-respected adults in positions of authority—priests, teachers, and coaches—would sexually exploit youth under their care. Media reports often (incorrectly) refer to these sexual offenders as “pedophiles” and frequently describe offenders in unambiguously negative terms (e.g., as “monsters”; Gladwell, 2012), leaving the public with even more questions about pedophilia.

One such question is the extent to which men and women in the general population have sexual interests in children. Very few studies have been conducted to answer this question. Most empirical research has been conducted with men (primarily) and women who have acted on their interests and been caught, convicted, and incarcerated for committing sexual offenses against minors. As few sexual offenders are caught and convicted, a forensic sample is probably not representative of the population of adults who have sexual interests in children (Neutze, Seto, Schaefer, Mundt, & Beier, 2011). As reviewed below, a handful of researchers have asked adults (mostly male college students) to self-report their sexual attraction to or sexual interest in children, but few studies have queried women about their pedophilic interests.

Prevalence of Reported Sexual Interest in Children

More than two decades ago, Briere and Runtz (1989) surveyed 193 university males and found that 9% described sexual fantasies involving young children, 5% admitted to having masturbated to such fantasies at least once, and 7% indicated some likelihood of having sex with a child if they were guaranteed they would not be caught or punished. A few more surveys of the student population were conducted in the 1990s. Templeton and Stinnett (1991) surveyed 60 male college students and found that 5% expressed desire to have sex with girls below the age of 12. Bagley, Wood, and Young (1994) cited three studies of male college students where almost 5% of the men reported sexual interest in children younger than age 13 and 3% reported sexual fantasies about young children. In their study of the cognitive distortions of child sexual abusers, Hayashino, Wurtele, and Klebe (1995) found 19% of their sample of men enrolled in General Educational Development classes reported some likelihood of engaging in sex with a child (age not specified) if guaranteed they would not be caught. Byers, Purdon, and Clark (1998) also found that 19% of men from a university sample reported experiencing sexual thoughts about engaging in sexual acts with children or minors. In these last two studies, researchers did not differentiate between children and teenagers, whereas in other studies *children* was operationally defined as individuals 12 years of age or younger, or else the terms *young children* or *little children* were used to indicate prepubescent youth.

Similar findings were obtained from community samples. Santtila and colleagues (2010) conducted a study to determine the extent and predictors of sexual interest in children among a nationally representative sample of men. Finnish males ($N = 1,312$) were asked to report which age group they experienced fantasies, masturbated to, and

engaged in sexual activity with, during the last year. Sexual interest in children below the age of 16 was reported by 3.5% of the sample. In Germany, Ahlers et al. (2011) asked a sample of 367 adult males recruited from the community about their sexual interest in prepubescent children (13 years or younger) and found that more than 9% of the men reported fantasies about children, 6% masturbated to those fantasies, and almost 4% admitted to having sexual contact with a child.

Very few studies have been published asking women about their sexual interest in children, perhaps reflecting professionals' reluctance to perceive women as capable of sexual offenses against children (Denov, 2003), along with the general public's view that sexual abuse by women is less harmful and less serious (Tsopelas, Tsetsou, Ntonas, & Douzenis, 2012). Briere, Henschel, and Smiljanich (1992) found that 4% of their sample of university women reported some hypothetical likelihood of engaging in sexual behavior with a child given that nobody would know and that there would be no punishment. In another study of 180 female university students, 3% of females reported sexual attraction to a child (Smiljanich & Briere, 1996). Among 546 female college students, Fromuth and Conn (1997) found 2% of women reported sexual fantasies involving young girls and 3% reported having sexual fantasies about young boys. In addition, 1% reported masturbating to sexual fantasies involving young children, and 1% reported being sexually aroused by children.

Taken together, the scant research suggests that a minority of nonclinical, nonincarcerated men and women self-report sexual interest in and arousal to young children. With the exception of two studies (Byers et al., 1998; Hayashino et al., 1995), the majority of studies using students and community samples found that 3% to 9% of male respondents endorsed items measuring self-reported sexual interest in children including attraction, fantasy, masturbation, and likelihood of the sexual act. Our review of the limited research on women (female students) found rates varying from 1% to 4%.

Developmental Correlates

What might account for an adult's sexual interest in a child? Most etiological studies of child sexual offending have examined males who have been incarcerated for sexually assaulting children. The past decade has seen an increase in explorations of the developmental experiences of sexually offending male adolescents and adults (e.g., Hunter, Figueredo, & Malamuth, 2010; Jespersen, Lalumière, & Seto, 2009; Lee, Jackson, Pattison, & Ward, 2002; Salter et al., 2003; Seto & Lalumière, 2010; Wanklyn, Ward, Cormier, Day, & Newman, 2012; Whitaker et al., 2008). For example, Simons, Wurtele, and Durham (2008) compared developmental histories of 269 incarcerated male sex offenders—132 child sexual abusers and 137 rapists. Compared with rapists, child sexual abusers reported more frequent experiences of childhood sexual abuse, early exposure to pornography (i.e., before age 10), an earlier onset of masturbation (i.e., prior to age 11), and sexual activities with animals. Both groups of sex offenders described having insecure parental attachment bonds, with two thirds of child sexual abusers reporting insecure (anxious) parent-child attachments. Insecure

(anxious) attachments develop when caregivers respond inconsistently to the needs of their child; insecure (avoidant) attachments develop when caregivers are consistently unresponsive to their child's needs (Ainsworth & Bowlby, 1991). Indeed, numerous studies have found that individuals who sexually abuse children often exhibit insecure attachment bonds, specifically anxious attachment (Bumby & Hansen, 1997; Lyn & Burton, 2004; Miner et al., 2010; Simons et al., 2008; Smallbone & Dadds, 1998; Ward, Hudson, & Marshall, 1996). Researchers suggest that insecure parent-child attachment can enhance the risk for child sexual offending by creating conditions (e.g., loneliness and isolation, lack of empathy, impulsivity, fear of rejection) that lead some individuals to turn to young children to meet their intimacy needs and desires for interpersonal closeness (see Maniglio, 2012; Smallbone & McCabe, 2003; Wood & Riggs, 2008).

In addition to insecure attachment bonds, other studies have found support for the roles of childhood sexual abuse, early atypical sexual interests, and early sexual experiences as developmental precursors for adult deviant sexual fantasies and behaviors (Fagan, Wise, Schmidt, & Berlin, 2002; Lee et al., 2002; Maniglio, 2011, 2012), prostitution (Wilson & Widom, 2010), male and female adolescent sexual offending (Roe-Sepowitz & Krysik, 2008; Seto & Lalumière, 2010), and female sex offending (Christopher, Lutz-Zois, & Reinhardt, 2007; Kaplan & Green, 1995). Further research is needed to explore the relationship of adverse childhood experiences and sexual interest in children among a general population of men and women.

Purpose of the Present Study

In summary, research on sexual interest in children among the general population of adults is limited, with very few studies including female participants, even though females (adults and adolescents) perpetrate child sexual abuse (Johansson-Love & Fremouw, 2009; Kjellgren, Priebe, Svedin, Mossige, & Långström, 2011; Miccio-Fonseca & Rasmussen, 2009; Nathan & Ward, 2002; Vandiver & Kercher, 2004). The purpose of the present study was to determine the extent to which nonincarcerated and nonclinical adults (males and females) report any sexual interest in children, and how those with and without pedophilic interests differ with respect to adverse developmental experiences.

Another purpose of the study was to provide empirical data on adults' interest in viewing Internet child pornography. There is a growing body of knowledge about (male) child pornography users who have been arrested and in the forensic or criminal population (e.g., Niveau, 2010; Quayle & Taylor, 2003; Ray, Kimonis, & Donoghue, 2010; Webb, Craissati, & Keen, 2007; Wortley & Smallbone, 2006). Although studies are beginning to inquire about adult pornography use among emerging adults and adolescents (Carroll et al., 2008; Kjellgren et al., 2011), very few researchers have studied child pornography use in the general population. Seto et al. (2010) reported 4.8% prevalence of viewing pornography depicting adult-child sex in a nationally representative sample of Scandinavian male adolescents. An Internet-based survey of 307 adults found 16% of males and above 5% of females reported using child

pornography (Seigfried, Lovely, & Rogers, 2008). The extent to which males and females in the community express interest in viewing child pornography warrants further investigation.

In the present study, we sought to add to the limited knowledge base by determining the extent to which a nonforensic, nonclinical community sample of men and women report sexual interests in children and in viewing child pornography. We predicted that prevalence of sexual interest in children would be higher among men than women. Consistent with findings obtained from incarcerated male child sexual offenders, we predicted that sexual interest in children would be associated with childhood maltreatment (sexual abuse specifically), insecure parent-child attachments, and early atypical sexual experiences (e.g., early masturbation, exposure to pornography, and sexual activities with animals).

Method

Participants

A total of 435 participants were recruited online; 246 from undergraduate psychology classes and 189 from an Internet marketplace, Amazon's Mechanical Turk (MTurk; <http://www.mturk.com>), where adults are paid for performing HITS (Human Intelligence Tasks), including completing surveys. MTurk is an online program that has become a popular method for recruiting large samples of participants at a low cost (for an introduction to using MTurk, see Mason & Suri, 2012).

Adult males ($n = 173$) and females ($n = 262$) were recruited for the study. There were no significant differences between males and females with respect to demographic variables. The demographic characteristics of the MTurk participants were compared with the national population (United States Census Bureau, 2011). MTurk participants were significantly younger (average age of 32.7 years) compared with the U.S. population (average age of 37.2 years), $t(188) = 5.64, p = .0001$. Participants were more highly educated (completed 14.7 years) compared with the population (completed 12.7 years), $t(188) = 11.71, p = .0001$. Fifty-nine percent of the participants reported income of less than US\$40,000 per year, which is significantly lower than the national average of US\$52,762. However, the ethnic composition of the sample was comparable with the U.S. population: 74% of the sample and 74% of the population reported Caucasian; 9% of the sample and 17% of the population reported Hispanic/Latino/a; 10% of participants and 5% of the population reported Asian/Pacific Islander; 1% of the sample and the population reported Native American. The sample was less likely to report African American ethnicity (3%) in comparison with the national population of 13%.

Procedure

Participants were invited to participate in a study titled, *Sexual Experiences and Attitudes*. Data were collected online to ensure confidentiality and anonymity

(participants' identities and email addresses were not asked for or recorded). The study limited participation to U.S. adults 18 years of age and older; however, demographic characteristics (including age and gender) were not verified to maintain anonymity. All study procedures were approved by the university's Institutional Review Board, including a waiver of documentation of informed consent. Participants were presented with a consent form describing the study, the associated benefits and risks, along with a statement that the study was completely anonymous and that no identifying information would be collected. Participants voluntarily indicated their consent to participate by clicking an *I agree* button that took them to the survey. After completing and exiting the surveys, extra credit was awarded to participants from the university sample and Mturk participants were paid US\$1 by Amazon's Mechanical Turk.

Measures

Demographic information was collected regarding age, education level, gender, occupation, income, marital status, and sexual orientation (respondents were asked to list to whom they are sexually attracted; for example, males, females, children, etc.).

Adverse childhood experiences and attachment. The Childhood Experiences Behavior Questionnaire (CEBQ; Simons et al., 2008) is a 271-item questionnaire that assesses the frequency and severity of developmental experiences. The CEBQ items are behavioral descriptions of adverse experiences without the use of emotionally laden terms (e.g., abuse, assault) along with behavioral depictions of the types of bonding between children and parents as described by Ainsworth and Bowlby (1991). For each behavior, participants indicated the frequency of occurrence using Likert-type scale items that range from 0 (*never*) to 6 (*more than 20 times a year*) or 0 (*never*) to 6 (*always*) for the attachment items. Responses on the CEBQ subscales (described below) are summed to create overall scores for the developmental variables (i.e., emotional abuse, sexual abuse, physical abuse, witnessing domestic violence, early exposure to pornography, early exposure to violent media, bestiality, early masturbation, avoidant, secure, and anxious attachment). The CEBQ has strong internal consistency, with Cronbach's alphas of .82 or greater for the developmental variables (Simons et al., 2008).

Exposure to violence. Items from the Conflict Tactics Scales (CTS; Straus, 1979) were used to assess how often participants witnessed their parents or caregivers engaging in interpersonal violence (e.g., *witnessing domestic violence*) and how often their parents/caregivers used verbal and physical punishment (e.g., *physical and emotional abuse*). *Witnessing domestic violence* was assessed with 19 items ranging from parents yelling at each other to using a knife or gun (Cronbach's $\alpha = .94$). *Emotional abuse* was assessed with 11 items ranging from insults to threats of harm or abandonment (Cronbach's $\alpha = .90$). *Physical abuse* was assessed with 10 items ranging from throwing something to using a knife or gun (Cronbach's $\alpha = .86$). Sample items from these scales include: *Did either of your caregivers slap or hit each other* (domestic violence); *did either of your caregivers hit you with a fist or kick you hard* (physical

abuse); and *did either of your caregivers insult you by calling you names* (emotional abuse). Witnessing domestic violence items, physical abuse items, and emotional abuse items were summed to create three continuous variables (i.e., *witnessing domestic violence*, *physical abuse*, and *emotional abuse*).

Sexual abuse. Sexual abuse as a child was measured in two ways. First, participants were asked to self-report sexual abuse history (i.e., *Were you ever sexually abused as a child [before age 17]?*). Second, sexual abuse items from the CEBQ Sexual Experiences Scale (modified from Briere, 1992) were used to measure the frequency of experiencing seven types of contact sexual abuse (e.g., touching the body sexually, oral sex) by a person 4 or more years older when the participant was age 14 or younger (e.g., *Have you either performed or received oral sex with someone?*). Three additional items measured noncontact sexual abuse experiences (e.g., nude photographs and exposing behaviors). Sexual abuse items were summed to create a continuous variable, *sexual abuse as a child* (Cronbach's $\alpha = .88$).

Early sexual experiences and animal abuse. Childhood and adolescent masturbation was measured on the same frequency scale as the child maltreatment items; however, the time period was changed to *during a typical week* and frequency was assessed across different age groups (e.g., *How many times did you masturbate when you were between the ages of 9 and 11 during a typical week?*). *Early masturbation* was defined as masturbation occurring before the age of 11 (previous studies have found masturbation before age 11 to be associated with sexual abuse of children; for example, Simons et al., 2008). Questions addressed frequency of masturbation, thoughts about own abuse while masturbating, and use of objects or pictures to masturbate. The frequencies of the masturbation items that were endorsed before age 11 were summed to create a continuous variable, *early masturbation* (Cronbach's $\alpha = .78$).

Animal abuse items were included to assess the frequency and severity of the physical abuse (i.e., cruelty; 10 items) and sexual maltreatment (i.e., bestiality; 10 items) of pets and stray animals (e.g., *When you were 17 or younger, how often did you touch the sexual organs of an animal? How often did you hit a domestic animal with an object?*). Definitions of domestic and stray animals were provided. To ensure the responses constituted acts of animal cruelty, additional items assessed the motivations for the behavior. Frequency of animal abuse was summed to create a continuous variable, *animal abuse* (Cronbach's $\alpha = .74$). Bestiality was recoded into a dichotomous variable (0 = *not evident*, 1 = *evident*).

Early exposure to pornography and violent media. *Exposure to pornography* (before age 10) was measured using the Sexually Explicit Media Questionnaire (Wryobeck & Wiederman, 1999) that asks 11 questions about the frequency of utilizing four types of media: magazines like *Playboy* (defined as magazines with nude women), magazines or books with explicit intercourse depictions, videos or video games with sexually stimulating scenes, and media showing actual intercourse (e.g., *Have you watched a home video or viewed pictures of people whom you know having sexual intercourse?*).

Previous research has shown that exposure prior to age 10 was associated with the development of sexually abusive behaviors (Ford & Linney, 1995; Simons et al., 2008; Simons, Wurtele, & Heil, 2002). Utilization of media types was measured on a Likert-type scale of 0 to 6 for number of uses per week, from 0 (*never*) to 6 (*daily*). The frequencies of the exposure to pornography items were summed to create a continuous variable, *early exposure to pornography* (Cronbach's $\alpha = .85$).

Early (age 10 or younger) *exposure to violent media* was assessed with 10 media items ranging in severity from viewing films, books, or playing games depicting physically assaultive behaviors to media depicting graphic violence and assessed using the same 7-point Likert-type scale (e.g., *When you were age 10 or younger, how often did you watch movies or cable that depicted scenes of death, violence, and assault, including blood or body parts?*). Early exposure was the variable of interest due to the research that indicates *exposure to violent media* is exceptionally influential when the viewer is a young child (Huesmann, 1998). The frequencies of the exposure to violent media items that were endorsed before age 10 were summed to create a continuous variable, *early exposure to violent media* (Cronbach's $\alpha = .82$).

Parent-child attachment. The Childhood Attachment Questionnaire (Hazan & Shaver, 1987) measured parental-bonding styles and rated the extent to which different attachment styles characterized the respondent's relationships with caregivers (male and female) during childhood (e.g., *I was worried about being abandoned; I was comfortable depending upon him/her to meet my needs.*). For each item, participants rated the frequency of occurrence from 0 (*never*) to 6 (*always*). For female and male caregivers, three attachment styles were measured: secure (20 items; Cronbach's $\alpha = .94$), avoidant (8 items; Cronbach's $\alpha = .75$), and anxious (12 items; Cronbach's $\alpha = .87$).

Sexual interest in children and antisocial behaviors. Similar to Malamuth's (1989) *Attraction to Sexual Aggression Scale*, participants were asked to rate the likelihood of committing a variety of criminal offenses (e.g., robbing a bank; sexually assaulting an adult) and also noncriminal, nonaggressive behaviors (e.g., texting while driving, driving faster than the posted speed limit) if they could be assured "that no one would know and that you would not get caught or be punished." For each behavior, participants indicated the likelihood (1 = *highly unlikely* to 6 = *highly likely*) of engaging in the behavior on a 6-point Likert-type scale (Cronbach's $\alpha = .78$). Embedded within the list of 14 behaviors were two items measuring sexual interest in children (*View child porn on the Web; Engage in sexual activity with a child*). Following these questions, participants were then asked to rate the extent to which they agree or disagree (1 = *strongly disagree*; 6 = *strongly agree*) with three statements: *I am sexually attracted to little children; I fantasize about having sex with a child; and I masturbate to fantasies about having sex with a child*, as a replication of previous research (Briere & Runtz, 1989; Hayashino et al., 1995; Smiljanich & Briere, 1996). Responses to the likelihood items were recoded. Participants who responded to an item with *highly unlikely* (1) were coded with a 0 (*no likelihood*) and all other responses (2-6) were coded as 1 (*some likelihood*). Likelihood of viewing child pornography on the Web was

combined with the four sexual interest items to create the sexual interest variable. These sexual interest measures were then dichotomized into *strongly disagree* (1 = 0) or all other responses indicating *some agreement* (2-6 = 1) to create the dependent measure of *sexual interest in children*.

Results

Preliminary Analyses

The relationships between childhood histories, sexual interest, and antisocial behaviors were investigated using the Statistical Package for the Social Sciences (SPSS Version 21.0). Preliminary analyses were conducted on the demographic variables to determine preexisting differences in sexual interest among females and males and between the two samples (university and Mturk). No significant differences were found between males who reported a sexual interest in children and those who did not report a sexual interest with respect to demographic characteristics. Females with sexual interest in children reported higher rates of being with a partner versus single (82% and 46%, respectively) and reporting bisexual orientation (50% and 8%, respectively).

There were no significant differences between the two samples (i.e., university and Mturk) with respect to reported sexual interest in children, gender, and ethnicity. However, the online participants were significantly older (average age = 33 years) compared with the student sample (average age = 22 years), $t(269) = 11.75, p = .0001$. The online participants were also more highly educated (average of 15 years completed) in comparison with the students (average of 12 years completed), $t(433) = 7.91, p = .0001$. Similarly, the online sample was more likely to report *married* (44%) as their relationship status compared with the student sample (15%), who were more likely to report being *single* (70%), $\chi^2(7, 435) = 65.52, p = .0001$. However, these demographic differences were not correlated with sexual interest in children; therefore, the sample (university and Mturk) was not controlled for in the primary analyses.

Correlations were conducted to evaluate the relationships between the developmental experiences of male and female participants. Bestiality was not significantly associated with sexual interest in children for males, $r(261) = .14, p = .07$, or females, $r(172) = .06, p = .35$. Similarly, violent media was not associated with sexual interest in children for males, $r(172) = .12, p = .11$, or for females, $r(261) = .05, p = .47$. Early masturbation was also not related to sexual interest in children for males, $r(172) = .06, p = .33$, or for females, $r(261) = -.05, p = .51$. These variables were excluded from further analyses.

Prevalence of Antisocial Behaviors and Sexual Interest Among Males and Females

Percentages for likelihood and sexual interest items are displayed in Table 1 for the total sample and for males and females separately. All behaviors were endorsed by at

Table 1. Endorsement of Antisocial Behaviors and Sexual Interest in Children Items for Males and Females.

Item	Total (N = 435)	Males (n = 173)	Females (n = 262)	χ^2	Φ	p
Antisocial behaviors: Some likelihood						
Drive faster than the posted speed limit	401 (93%)	159 (92%)	242 (93%)	0.01	.01	.91
Use your cell phone while driving	386 (89%)	147 (85%)	239 (91%)	4.07	.10	.04*
Text while driving	317 (73%)	121 (70%)	196 (75%)	1.25	.05	.26
Drive under the influence: Drugs/alcohol	168 (39%)	75 (43%)	93 (36%)	2.71	.08	.10
Rob a bank	136 (31%)	70 (41%)	66 (25%)	11.31	.16	.001*
Commit murder	37 (9%)	22 (13%)	15 (6%)	6.55	.12	.01*
Engage in sexual activity with prostitute	74 (17%)	58 (34%)	16 (6%)	55.49	.36	.000*
View sexually explicit websites	297 (68%)	143 (83%)	154 (59%)	26.95	.25	.000*
Send sex explicit photos/videos: Phone	227 (52%)	92 (54%)	135 (52%)	0.16	.02	.69
Sexually assault an adult	36 (8%)	28 (16%)	8 (3%)	23.67	.23	.000*
Engage in sexual activity with dead person	12 (3%)	10 (6%)	2 (1%)	9.78	.15	.002*
Engage in sexual activity with animal	13 (3%)	9 (5%)	4 (2%)	4.86	.11	.03*
Sexual interest items: Some agreement						
View child porn on the website	25 (6%)	16 (9%)	9 (3%)	6.50	.12	.01*
Engage in sexual activity with a child	15 (3%)	11 (6%)	4 (2%)	7.31	.13	.007*
I fantasize about having sex with child	8 (2%)	6 (4%)	2 (1%)	4.26	.10	.04*
I am sexually attracted to little children	10 (2%)	6 (4%)	4 (2%)	1.75	.06	.19
I masturbate to fantasies: Sex with child	8 (2%)	6 (4%)	2 (1%)	4.26	.10	.04*

Note. Frequencies and percentages are reported. Data were missing for the following items: drive faster than the posted speed limit (2), view sexually explicit websites (1), send sexually explicit photos or videos on your cell phone (1), and fantasize about having sex with a child (1).

*Statistical significance.

least one respondent; males reported a higher likelihood than females of engaging in the more serious antisocial behaviors (i.e., robbing a bank, committing murder, and viewing sexually explicit websites). They were also more likely than females to endorse sexual behaviors including engaging in sexual activity with animals, prostitutes, and dead people. In contrast, females were more likely to endorse less serious transgressions (e.g., using a cell phone while driving).

Twenty-eight total participants (6.4%) endorsed at least one sexual interest in children item. As predicted, more males (9.8%) than females (4.2%) self-reported some sexual interest in children, $\chi^2(1, 435) = 5.48, p = .02, \Phi = .11$. Males were more likely than females to endorse viewing child pornography on the Web and to engage in sexual activity with a child. In addition, males were more likely than females to affirm sexual attraction to little children and to masturbate to fantasies about sexual activity with a child.

Table 2. Endorsement of Antisocial Behaviors for Males and Females by Sexual Interest in Children.

Item	No sexual interest (n = 406)	Any sexual interest (n = 28)	χ^2	Φ	p
Drive faster than the posted speed limit					
Males	142 (92%)	17 (100%)	1.43	.09	.23
Females	231 (92%)	11 (100%)	0.90	.06	.34
Use your cell phone while driving					
Males	130 (84%)	16 (94%)	1.25	.09	.26
Females	228 (91%)	11 (100%)	1.11	.07	.29
Text while driving					
Males	105 (68%)	15 (88%)	3.05	.13	.08
Females	186 (74%)	10 (91%)	1.58	.08	.21
Drive under the influence: Drugs/alcohol					
Males	63 (41%)	11 (65%)	3.62	.15	.06
Females	86 (34%)	7 (64%)	3.97	.12	.05*
Rob a bank					
Males	56 (36%)	14 (82%)	13.56	.28	.000*
Females	59 (24%)	7 (64%)	9.01	.19	.003*
Commit murder					
Males	14 (9%)	8 (47%)	19.86	.34	.000*
Females	12 (5%)	3 (27%)	9.88	.19	.002*
Engage in sexual activity with prostitute					
Males	46 (30%)	11 (65%)	8.48	.22	.004*
Females	8 (3%)	8 (73%)	88.88	.58	.000*
View sexually explicit websites					
Males	125 (81%)	17 (100%)	3.99	.15	.05*
Females	143 (57%)	11 (100%)	7.98	.18	.005*
Send sex explicit photos/videos: Phone					
Males	79 (51%)	13 (77%)	3.90	.15	.05*
Females	125 (50%)	10 (91%)	7.13	.17	.008*
Sexually assault an adult					
Males	21 (14%)	7 (41%)	8.58	.22	.003*
Females	5 (2%)	3 (27%)	22.75	.30	.000*
Engage in sexual activity with dead person					
Males	4 (3%)	6 (35%)	29.94	.42	.000*
Females	1 (.4%)	1 (9%)	10.51	.20	.001*
Engage in sexual activity with animal					
Males	5 (3%)	3 (18%)	7.18	.20	.007*
Females	0 (0%)	4 (36%)	92.69	.60	.000*

Note. Frequencies and percentages are reported. Males with no sexual interest (n = 155); males with some sexual interest (n = 17); females with no sexual interest (n = 251); females with some sexual interest (n = 11). Data were missing for the following: sexual interest variable (1), drive faster than the posted speed limit (2), view sexually explicit websites (1), send sexually explicit photos or videos on your cell phone (1), and fantasize about having sex with a child (1).

*Statistical significance.

Relationship Between Sexual Interest and Antisocial Behaviors

The relationships between sexual interest in children and self-reported antisocial behaviors are presented in Table 2. Males and females who endorsed at least one sexual interest item were more likely to report a willingness to engage in criminal activities (i.e., robbing a bank, committing murder or rape) and high-risk sexual behaviors (i.e., sex with a prostitute, sex with an animal, or dead person) in

comparison with those who reported no sexual interest in children. Males and females who reported any sexual interest in children were also more likely to view sexually explicit websites and to send sexually explicit photos or videos. Females with any sexual interest in children were more likely to report a willingness to drive while under the influence of alcohol or drugs. There were no statistical between-group differences for risky, yet common transgressions; males and females, regardless of self-reported sexual interest in children, were equally as likely to speed and use their cell phone or text while driving.

Adverse Developmental Experiences and Sexual Interest in Children

A 2×2 MANOVA was conducted to examine the differential effects of adverse childhood experiences on gender and reported sexual interest. Eight continuous variables were included in the analysis (experiences of childhood sexual abuse, early exposure to pornography, emotional abuse, anxious and avoidant attachment bonds, physical abuse, domestic violence, and animal abuse). Box's M test for equality of covariance matrices found significant differences (Box's $M = 496.67$, $F = 3.74$, $p < .001$). Pillai's Trace was used to evaluate the multivariate statistics. There was a significant main effect for Gender, Pillai's Trace = .119, $F(8, 422) = 7.12$, $p = .0001$, $\eta^2 = .12$, and for Sexual Interest in Children, Pillai's Trace = .079, $F(8, 422) = 4.51$, $p = .0001$, $\eta^2 = .08$. The interaction of Sexual Interest and Gender was also significant, Pillai's Trace = .063, $F(8, 422) = 3.53$, $p = .001$, $\eta^2 = .06$.

Follow-up tests using MANOVA with contrast coding were then conducted to compare developmental experiences between sexual interest groups for males and females (Table 3). For males, the MANOVA was significant, Pillai's Trace = .106, $F(8, 422) = 6.25$, $p < .001$, $\eta^2 = .11$; univariate follow-up tests indicated statistical significant differences among sexual interest on all eight childhood experiences. The MANOVA was also significant for females, Pillai's Trace = .045, $F(8, 422) = 2.48$, $p = .01$, $\eta^2 = .05$; univariate tests indicated significant differences on three dependent measures (i.e., child sexual abuse, anxious attachment, and avoidant attachment).

Discussion

The present study investigated the prevalence of adult sexual interest in children among a nonincarcerated, nonclinical sample of adults. The percentages of males endorsing specific sexual interest items varied from 3.5% (fantasies, masturbation, sexual attraction), to 6% (likelihood of having sex with a child if they were guaranteed they would not be caught or punished), to a high of 9.2% (likelihood of viewing child pornography online). Overall, 9.8% of males endorsed at least one item associated with sexual interest in children. The percentages of females who reported some likelihood varied from 0.8% (masturbation, sexual attraction), to 1.5% (having sex with a child if they were guaranteed they would not be caught or punished), to a high of 3.4% (viewing child pornography online). Overall, 4.2% of females endorsed at least one sexual interest in children item. Thus, consistent with previous research and in support of our gender prediction, sexual interest in children is more common among men than

Table 3. Adverse Childhood Experiences for Males and Females by Sexual Interest in Children.

Childhood experiences	No sexual interest (n = 406)	Any sexual interest (n = 28)	Statistics	p
Emotional abuse (0-66)				
Males	14.52 (12.61)	25.24 (14.84)	$F = 9.23, \eta_p^2 = .02$	.003*
Females	16.98 (14.57)	18.36 (9.69)	$F = .11, \eta_p^2 = .00$	.75
Physical abuse (0-60)				
Males	17.52 (9.00)	23.59 (14.34)	$F = 7.20, \eta_p^2 = .02$	.008*
Females	17.38 (8.32)	19.00 (7.91)	$F = .35, \eta_p^2 = .001$	.55
Sexual abuse (0-60)				
Males	2.00 (6.26)	7.41 (11.42)	$F = 8.20, \eta_p^2 = .02$	.004*
Females	3.17 (7.39)	8.00 (13.18)	$F = 4.49, \eta_p^2 = .01$	.04*
SA self-report (percentage)				
Males	34 (24%)	11 (65%)	$\chi^2 = 12.70, \Phi = .27$	.000*
Females	106 (42%)	9 (82%)	$\chi^2 = 6.71, \Phi = .16$	.01*
Witness DV (0-114)				
Males	15.69 (19.26)	26.88 (19.34)	$F = 5.01, \eta_p^2 = .01$	.03*
Females	18.11 (19.86)	24.27 (17.82)	$F = 1.04, \eta_p^2 = .002$	.31
Exposure to porn (0-66)				
Males	15.71 (10.19)	22.82 (9.86)	$F = 11.55, \eta_p^2 = .03$	.001*
Females	9.45 (6.59)	11.73 (6.62)	$F = .82, \eta_p^2 = .002$	.37
Animal abuse (0-84)				
Males	.99 (2.36)	5.06 (9.13)	$F = 38.28, \eta_p^2 = .08$	.000*
Females	.70 (1.61)	0.36 (.67)	$F = .18, \eta_p^2 = .00$	.68
Anxious attachment (0-72)				
Males	18.70 (12.51)	27.94 (8.45)	$F = 7.84, \eta_p^2 = .02$	.005*
Females	19.82 (13.45)	32.27 (11.62)	$F = 9.79, \eta_p^2 = .02$	.002*
Avoidant attachment (0-48)				
Males	12.39 (9.11)	18.12 (8.14)	$F = 6.01, \eta_p^2 = .01$	.015*
Females	13.23 (9.33)	19.82 (6.51)	$F = 5.46, \eta_p^2 = .01$	.02*

Note. Minimum/maximum, means and (standard deviations) are presented unless otherwise indicated. Males with no sexual interest (n = 155); males with some sexual interest (n = 17); females with no sexual interest (n = 251); females with some sexual interest (n = 11). SA = experience sexual abuse as a child; DV = domestic violence.

*Statistical significance.

women. The finding that almost 10% of the sample of males and more than 4% of the females admitted to some sexual interest in children supports previous findings that even among a general population, a minority of adults—men as well as women—report some sexual interest in children.

As our questions did not explore the persistence or intensity of sexual fantasies, urges, or behaviors, we cannot say whether any of these adults would meet diagnostic criteria for pedophilia according to *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000). Nonetheless, our findings add to the paucity of studies reviewed earlier by showing that some sexual interest in young children is evident among males and females, and raise the normative question about “what turns people on” (Ahlers et al., 2011; Wakefield, 2011, p. 208). Very few paraphilia-related studies have been conducted with nonclinical, general populations of adults, and even fewer studies have been

conducted with female participants. Studies examining the prevalence of voyeuristic, exhibitionistic, and transvestic fetishism tendencies in the general population (e.g., Långström & Seto, 2006; Rye & Meaney, 2007) suggest that these paraphilic behaviors do not always stem from pathology. Our findings also support recent assertions that pedophilic interests might be considered a type of sexual orientation. Recently, Seto (2012) suggested that sexual orientation, defined as the direction(s) of a person's sexual thoughts, fantasies, urges, and behaviors, be expanded from sexual *gender* orientation (i.e., one's attraction to same vs. opposite sex) to one's sexual *age* orientation (i.e., one's sexual attraction to children vs. adults). Although his comments are focused on men because most known pedophiles are male, our finding that a minority of men and women report some erotic interests in a young age group supports his conceptualization of sexual orientation as existing along an age continuum, or what has historically been referred to as an "erotic-age preference" (Freund, 1967).

Along with measuring sexual interest, fantasies, likelihood of engaging in sexual activity, and masturbating to sexual fantasies of children, we included an additional sexual interest item: likelihood of viewing child pornography online. In the current study, above 9% of the men and 3% of the women in the total sample endorsed some likelihood of viewing child pornography on the Internet. A similar 3:1 ratio of men to women was found in Seigfried et al. (2008), where 16% of men and more than 5% of women reported viewing pornographic materials featuring individuals below the age of 18 years. Their higher rates of endorsement could have been due to participants interpreting this question as being asked about viewing images of adolescents, whereas we asked specifically about viewing *child* pornography.

Others have found a relationship between child pornography use and contact sexual offending and sexual arousal to children (McCarthy, 2010; Seto, Cantor, & Blanchard, 2006; Seto, Hanson, & Babchishin, 2011), leading some experts to call child pornography use a clear indicator of sexual interest in children (Seto, 2009). The link between sexual interest in children and intentions to view Internet child pornography was quite obvious in the current study, as none of the males or females in the *no sexual interest* group expressed any likelihood of viewing child pornography online. In addition to its relevance as a clear indicator of pedophilic interests, viewing child pornography is problematic in and of itself because it contributes to the sexual exploitation of children by creating demand, sexually objectifying children, victimizing the children in the photographs or videos (Quayle & Taylor, 2003), and is of concern to law enforcement and the general public (Lam, Mitchell, & Seto, 2010).

Along with confirming that almost 10% of men and more than 4% of women admit to having any sexual interest in children, analyses conducted separately by gender identified a number of similarities regarding the risk factors for those males and females who endorsed items indicative of sexual interest in children. As predicted, males and females with any sexual interest in children experienced insecure (anxious) parent-child attachment and childhood sexual abuse. Surprisingly, avoidant attachment bonds were also evident among males and females who reported a sexual interest in children. Males with sexual interest in children reported a number of other adverse childhood experiences, including childhood exposure to pornography, emotional and

physical abuse, witnessing domestic violence, and perpetrating animal abuse. Others have likewise found high rates of reported childhood sexual abuse, sexualized childhoods, family history of domestic abuse, and insecure attachment styles among incarcerated male samples of child sexual abusers (Jespersen et al., 2009; Lee et al., 2002; Sawle & Kear-Colwell, 2001; Simons et al., 2008; Smallbone & McCabe, 2003). These adverse developmental experiences, including maltreatment and sexual abuse, have also been found among female adolescent and adult sexual offenders (e.g., Christopher et al., 2007; Freeman & Sandler, 2008; Heil, Simons, & Burton, 2010; Hickey, McCrory, Farmer, & Vizard, 2008; Hunter, Lexier, Goodwin, Browne, & Dennis, 1993; Roe-Sepowitz & Krysik, 2008; Vandiver & Teske, 2006; Wijkman, Bijleveld, & Hendriks, 2010). The present study extends these findings by showing that histories of maltreatment and heightened sexuality are also found among a general population of males and females reporting some sexual interest in children. Early sexual experiences and sexual abuse may be risk factors for the development of sexual interest in children for males and females.

Surprisingly, no relationship was found between bestiality and sexual interest in children. Bestiality has been associated with sexually abusing children in numerous studies, using different methodologies and populations (Heil et al., 2010). The lack of relationship may be due to the reluctance of individuals to report this behavior, or bestiality may be related to child sexual abuse, but not to a sexual interest in children. In addition, the CEBQ measure of bestiality, although a useful measure with incarcerated sex offenders (Simons et al., 2008), may have limitations when used with non-clinical, nonforensic individuals. It may prove useful to include more specific questions about developmentally atypical and concerning sexual behaviors with animals (e.g., manually stimulating animals or inserting objects into vagina/rectum of animals; Ascione & Arkow, 1999; Wurtele & Kenny, 2011).

Limitations

The present study had several methodological limitations and the results should be interpreted accordingly. First, participants constituted a convenience sample and were recruited online. Reviews of Internet-based research (IBR) have concluded that IBR offers numerous advantages (Gosling, Vazire, Srivastava, & John, 2004; Ray et al., 2010), including the fact that online questionnaires allow visual anonymity, which is important for participants' comfort when reporting on highly sensitive topics (Shapiro, Chandler, & Mueller, 2013). Considering how negatively the public views pedophiles (Jenkins, 1998) and child pornographer users (Lam et al., 2010), the anonymity may have facilitated self-disclosure of these stigmatizing behaviors. It must be acknowledged that some of the disadvantages of IBR may have affected the current study, including the fact that participants could have provided false information about their identities or could have minimized or exaggerated their responses. Second, although the total sample size was adequate, frequency rates of endorsing sexual interest items were low, especially for females. Even with the small cell sizes, there were numerous statistically significant differences between groups. Third, it is possible that the title of

the study attracted individuals with preexisting high levels of sexual interest and preoccupation. Fourth, our choice of dependent variables was based on previous research that has primarily relied on correctional samples of men. Factors associated with sexual interest in children among nonincarcerated men and women may differ from those identified in research with detected offenders. For example, the present study included questions about adult sexual orientation, showing high rates of bisexuality and same-sex attraction for males and females reporting any sexual interest in children. Numerous epidemiological studies have found a positive association between adverse childhood experiences (e.g., physical and sexual abuse, neglect, witnessing domestic violence) and same-sex sexual orientation in adulthood, with lesbians, gays, and bisexual participants reporting higher prevalence of childhood sexual abuse than heterosexuals (e.g., Andersen & Blossnich, 2013; Balsam, Rothblum, & Beauchaine, 2005; Roberts, Glymour, & Koenen, 2013). For women, questions measuring sexual development (e.g., age of menarche) and sexual health (e.g., pregnancies, abortions, sexually transmitted diseases [STDs]) would also be important to include, given the findings that traumatic sexualization has been associated with earlier menstruation, teenage pregnancies, higher numbers of sexual partners, along with higher rates of sexual revictimization and sexual health problems as adults (Koenig, Doll, O'Leary, & Pequegnat, 2004; Lalor & McElvaney, 2010; Merrill, Guimond, Thomsen, & Milner, 2003; Noll, Trickett, & Putnam, 2003; Testa, VanZile-Tamsen, & Livingston, 2005).

Even with the above limitations, the present study contributes to the limited literature on pedophilic interests among a general population of adults. Our findings also hold potential for informing research on pathways for the development of sexual interests, in addition to contributing to the debate regarding the generalist and specialist theories of sexual offending behavior. Sexual offenders may be characterized as *specialists* who commit sexual crimes exclusively and persistently, or as *generalists* who do not restrict themselves to one type of crime; they commit many different types of crimes and exhibit extensive criminal histories, substance abuse issues, and antisocial cognitions and behaviors (Harris, Mazerolle, & Knight, 2009; Lussier, Leclerc, Cale, & Proulx, 2007). One of the assumptions of the specialist model is that sexual abuse of children has a distinct etiology; a history of childhood sexual abuse. Evidence that juvenile and adult sex offenders are more likely than nonsex offenders to be victims of childhood sexual abuse has been quite robust (Jespersen et al., 2009; Seto & Lalumière, 2010; Simons et al., 2008). Our results support the specialist model by demonstrating the association between childhood sexual experiences (including abuse) and sexual interest in children. However, our results also support the generalist model, which contends that sexual offenders participate in a broad array of antisocial activities that are manifestations of low self-control and impulsivity such as alcohol use, unprotected sex, and reckless driving (Gottfredson & Hirschi, 1990; Lussier & Cortoni, 2009). Male and female participants in the current study who reported any sexual interest in children also reported higher likelihoods of sexually assaulting an adult and engaging in other paraphilic behaviors (e.g., having sex with animals and dead people), along with other types of nonsexual criminal behaviors (e.g., committing murder, robbing a bank). These findings suggest that individuals with sexual interest in children may be

the same individuals who are more likely to engage in antisocial or criminal behavior of any kind, leading some researchers to assert that “nonsexual and sexual offending are intrinsically linked” (Lussier & Healey, 2010, p. 4).

Future Directions

Future research should investigate additional characteristics found to differ between specialist and versatile child sexual abusers (e.g., emotional congruence with children, sexual preoccupation; Harris et al., 2009) and examine relationships between these risk factors and pedophilic interests in community samples. Understanding the unique childhood risk factors for pedophilic interests may assist in early identification of at-risk youth and guide the development of prevention and intervention efforts. Findings also call for interventions to prevent all forms of child maltreatment (especially childhood sexual victimization; see Kenny & Wurtele, 2012; Wurtele, 2009, 2012), domestic violence exposure, and negative parenting in the general population as a means to prevent the sexual victimization of children.

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