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The Prevalence of Sexual Interest in Children and Sexually Harmful Behavior Self-Reported by Men Recruited Through an Online Crowdsourcing Platform

Sexual Abuse

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Abstract

This study examined the feasibility of using crowdsourcing to recruit men who self-report sexual interest in children or sexually problematic behavior involving children. Crowdsourcing refers to the use of the internet to reach a large number of people to complete a specific task. A nonrepresentative sample of men ($N = 997$) participated in a brief self-report survey examining age of attraction, sexual interest in children, proclivity toward sexual offenses involving children, and history of sexual offending. Almost a quarter of the sample (23.1%) indicated some degree of sexual interest in children, propensity to sexually offend against children, and/or actual offending behavior. We present our data broken down by type of interest or behavior and examine the frequency of these outcomes. Findings are likely to be of value to those considering the viability of crowdsourcing to overcome the limitations or challenges of face-to-face research on stigmatizing interests and behaviors. Findings also contribute to estimating prevalence of self-reported sexual interest in children, and sexual offending behavior toward children, across different countries.

Keywords

crowdsourcing, self-report, sexual interest in children, sexual offense proclivity, sexual offending against children

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Stigmatizing, illegal, or taboo behaviors represent a challenge for social scientists. On one hand, they are important phenomena for scientific research. For example, understanding the true prevalence, risk factors, and outcomes associated with behaviors such as child abuse has huge public health implications (e.g., Choudhry et al., 2018). On the other hand, stigmatizing phenomena such as atypical sexual interests or offending behavior are difficult to measure. Social scientists typically cannot observe these phenomena directly in experimental studies. Where a behavior of interest is criminal, scientists may be able to conduct research with convicted individuals. However, the number of people apprehended for a particular offense is likely to reflect only a small proportion of those who committed the offense—Seto et al. (2015), for example, describe people detected for the use of child sexual exploitation material as only the “tip of the iceberg” (p. 67). In addition, given the resourcing demands of accessing apprehended (particularly incarcerated) individuals, it is a challenge for researchers to carry out exploratory studies or research designs requiring large sample sizes in prisons and other secure settings. Therefore, there is a need to examine the feasibility of alternative approaches to research stigmatizing phenomena and behaviors.

Research on *attitudes toward* stigmatizing, illegal, or taboo topics can be carried out effectively with measures that somewhat obfuscate their aims, either by carefully constructed questionnaires (e.g., Eyssel & Bohner, 2008) or by indirect methods of measurement such as the Implicit Association Test (e.g., Hermann & Nunes, 2018). However, the measurement of actual *behavior* is challenging as it is difficult to ask indirectly whether someone has engaged in a given behavior. Some researchers have dealt with this issue through the measurement of proclivity to engage in behaviors such as rape (Bohner et al., 1998; Malamuth, 1981), child molestation (Gannon & O’Connor, 2011), and sexual harassment (Page & Pina, 2018; Pryor, 1987). Although useful, proclivity measures assume that individuals have insight into their likelihood of engaging in these behaviors and can differentiate something that they might fantasize about doing from something they would actually do. In addition, responses on child molestation proclivity measures are predictably skewed toward emphatic rejection of the behavior (Gannon & O’Connor, 2011). Therefore, it can be difficult to arrange participants into groups of those who are offense-prone and those who are not.

Another approach to the challenge of examining stigmatizing or offending behavior in community samples is to use analogues of these behaviors. For example, in aggression research, participants may be offered the opportunity to determine how long a confederate’s hand should be submerged in cold water (Ballard & Lineberger, 1999) or how much hot sauce they should have to consume (Lieberman et al., 1999). Laboratory analogues have been developed for sexually aggressive behaviors, including examining participants’ willingness to expose a confederate to unwanted sexual material in the lab (Hall & Hirschman, 1994) or online (Bosson et al., 2015). As with proclivity measures and measures of attitudes, analogue measures are useful tools with which to examine mechanisms that underpin various problematic behaviors. However, the responses elicited by these paradigms reflect the least extreme incarnations of these behaviors. In addition, there are stigmatizing or problematic behaviors that do not fit well into laboratory or online analogues due to ethical concerns. For example,

other than virtual reality behavioral monitoring techniques with individuals who have sexually offended (Fromberger et al., 2018), we know of no analogue for behaviors such as child molestation or the use of pornographic material containing children.

The limitations of proclivity and analogue measures are reflected in the enduring need for research using populations convicted of offending. An alternative approach is to treat proximal risk factors for offending as the dependent variables of interest rather than the offending behaviors themselves. However, it can remain a challenge to reach participants where these risk factors are also highly stigmatizing. Two such stigmatizing possible risk factors (Hanson & Morton-Bourgon, 2005) are pedophilia—a sexual interest in prepubescent children, characterized as a disorder in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013)—and hebephilia—a sexual interest toward children in early pubescence, not included in the *DSM-5* (Stephens & Seto, 2016).

Populations of pedophilic and hebephilic individuals are increasingly reachable through online forums that are explicitly anti-offending (e.g., VirPed.org) or more ambiguous in their message (e.g., GirlChat, BoyChat.org). Using forums, researchers have been able to recruit large samples of individuals with a sexual interest to take part in quantitative research (e.g., Bailey et al., 2016) or in smaller numbers for qualitative or mixed designs (e.g., Mitchell & Galupo, 2018). However, there are a number of research questions and designs that are less suitable to participant recruitment through these forums. Perhaps most obvious is research that is focused on offending behavior rather than sexual interest in children; while sexual interest in children and sexual offending are related phenomena and they are not synonymous (Seto, 2008). There may be research that is more welcome on these forums (e.g., research that focuses on reducing stigma or increasing well-being for this population) relative to others (e.g., research that looks at sexual interest as a risk factor in offending), meaning that recruitment may be difficult for some topics or may prompt discussion on the forums. The latter may be a particular problem if the research design requires some deception or obfuscation of hypotheses. Finally, although these forums have many thousands of members, surveys may end up consistently recruiting overlapping subsets of the most active members, potentially affecting the generalizability of research findings.

Given the huge increase in the use of crowdsourcing platforms (e.g., Prolific, CrowdFlower, MTurk) as mediums for participant recruitment (Chandler & Shapiro, 2016), including use for attitude research relating to sexual interest in children (e.g., Jahnke, 2018), it is logical that researchers would also try to use crowdsourcing to recruit samples of people admitting sexual interest in children or sexually harmful behavior with children. Recruitment using crowdsourcing offers researchers more control than recruitment through specific forums or via social media. Participants can be recruited rapidly and be paid for participation. Participant fees and associated costs can be considerably cheaper than using traditional market research companies. A number of eligibility criteria can be stipulated to screen potential participants (age, gender, language fluency, country of residence, etc.). These eligibility criteria can be tested before starting the study—or before securing funding—to ensure that the pool of participants contains sufficient numbers for sample size requirements. There are myriad

reasons why researchers would consider crowdsourcing participants, including the 2020 COVID-19 pandemic and the resulting difficulties in conducting lab-based research and research in secure establishments. There is therefore a need to establish the rates at which participants recruited through crowdsourcing will self-report stigmatizing interests and behaviors to ensure that costs and effort spent on them are justified.

Several studies have examined the prevalence of sexual interests and behaviors relating to children using samples drawn from the general population. Wurtele et al. (2014), for example, recruited a portion of their sample of 435 U.S. men and women using crowdsourcing methods (MTurk) to explore the prevalence of child molestation proclivity and proclivity to use pornographic material containing children among a nonclinical sample. They reported that 9.8% of their subsample of men reported some sexual interest in children or proclivity toward pornography or contact offending. Joyal and Carpentier (2017) compared telephone and online methods to examine prevalence of self-reported paraphilic behavior and interest, including reporting sex with children, among a sample of men and women ($n = 1,040$) representative, or approaching representativeness, of the Quebec population. Participants were recruited with the assistance of a market research company. They found that online administration appeared to prompt greater disclosure, and across both modalities, 0.6% of men reported experience of sex with children, whereas 1.1% expressed an interest in sex with children.

Seto and colleagues (2015) reported data on proclivity toward sexual contact with children of various ages and self-reported viewing of pornographic material containing children. Their findings were based on male data from a larger regional survey of adolescent sexuality with a Swedish population-representative sample (using a separate Norwegian sample for cross-validation of a scale). Among these individuals aged 17 to 20, 4.2% (5.6% in Norwegian sample) reported having viewed pornographic material containing children, and approximately half the sample did not empathically reject the likelihood of having sex with a child if they would not be punished or found out (this figure was just over 20% in the Norwegian sample but with a more limited measure of proclivity). Alanko et al. (2013) reported 1-year incidence of sexual interest in, and sexual activity directed toward, children among a cohort of Finnish male twins and siblings aged 21 to 43 ($n = 3,967$). They found that 3% of the sample self-reported sexual interest in children below 16 years and 0.3% reported sexual behavior.

In the most robust study to date examining the prevalence of sexual interest in children based on community self-report samples, Dombert et al. (2016) recruited a large sample ($n = 8,718$) of German community men using a market research company. It was possible to weight these data to approximate the age and education distribution of the German male population. As part of a battery of measures, 5.5% of participants self-reported some indication of sexual interest in children younger than 12, and 3.2% reported contact or pornography offenses involving prepubescent children. The focus of questions in the study by Dombert et al. (2016) was on interest in or offending involving prepubescent children. Therefore, additional research is

needed that incorporates interest and behavior involving older children, and that extends existing findings to additional jurisdictions.

Current Study

Little published research has examined the feasibility of using crowdsourcing to reach individuals with a sexual interest in children, a proclivity to offend against children, or self-reported offending history. A key advantage of crowdsourcing is its relative low cost compared with studies facilitated by market research companies (e.g., Dombert et al., 2016; Joyal & Carpentier, 2017) or that involve setting up panels of specific populations (e.g., Alanko et al., 2013; Seto et al., 2015). In the current study, we combined strengths of previous research, including examining multiple outcome variables that may be of interest to different researchers, inclusion of incidence since the age of 18 and in the past 12 months, and the recruitment of a large sample. We examined the feasibility of Prolific as a simple and affordable platform through which to recruit, and reported the prevalence of these interests and behaviors in the largest sample to date of male participants outside of Germany and Northern Europe.

Some readers may be more familiar with MTurk as a crowdsourcing option for recruitment of study participants. Prolific has similar functionality to MTurk but has been developed specifically as a platform for research studies (Palan & Schitter, 2018). It can be used to host surveys and experiments requiring behavioral or reaction time responses. Researchers may have concerns about the vulnerability of crowdsourcing platforms for manipulation in the form of repeat completion of surveys to obtain multiple payments. The Prolific team have outlined a number of ways in which they attempt to minimize this risk, including steps to verify accounts, limit the use of single IP addresses, and prevent multiple users using a single payment account (Lettmann & Lumsden, 2018). In comparative studies, Prolific appears to produce comparable data quality with that of MTurk, but has evidence of more honest responding and greater participant diversity (Peer et al., 2017). At the time of writing, more than 130,000 participants had been active on the Prolific platform in the previous 90 days.

We designed a short survey to administer to approximately 1,000 male participants on the Prolific platform. We asked a series of simple questions, primarily with dichotomous (yes/no) answers, to examine self-reported interest in, proclivity toward, and engagement in sexual behavior involving children. We asked follow-up questions of people acknowledging these interests or behaviors, including whether their answers referred to pubescent or prepubescent children, and whether they had experienced these interests or behaviors in the previous 12 months. We also asked people about the lowest and highest ages they typically find attractive. The primary aims of the study were to examine the feasibility of crowdsourcing via Prolific as (a) a method of recruitment for cross-sectional studies with stigmatizing outcome variables, and/or (b) a method of identifying subsamples of individuals with these interests or behaviors to form samples in more targeted future studies. A secondary aim was to contribute to the literature on prevalence in the male population of sexual interest in children, proclivity to sexually offend against children, and incidence of sexually harmful behaviors

involving children—although we acknowledge that, while large, our sample was not representative. Our key reported results are descriptive. However, we also included some inferential statistics in our write-up. These were exploratory and were determined post hoc.

Method

Participants

To be eligible, participants had to be 18 years or above, identify as male, be fluent in English, and be residing in one of six majority Anglophone countries (Australia, Canada, Ireland, New Zealand, United Kingdom, and the United States). Data collection included multiple countries to increase the generalizability of findings. These specific countries were chosen as we had identified appropriate support services in each to be shared as part of the debrief, and we had identified the age of consent in each country/state (information that was needed for one of the questions in the survey). We also ensured that these countries were represented in the Prolific participant pool. Participants needed to have a Prolific approval rate over 90%, representing the percentage of past studies for which the participant has had payment approved. Researchers can withhold payments where there is evidence that participants have not engaged fully or conscientiously with the study (e.g., problematically fast completion, skipping key questions, failing attention checks). Using approval rates in this way is likely to increase the honesty of responding as lower approval rates have been linked with greater dishonesty on Prolific and MTurk (Schild et al., 2021).

Prescreening was applied using the Prolific platform to identify potential participants who met the above criteria. At the time of data collection, there were just over 8,500 eligible participants on the Prolific platform. In total, 1,059 individuals began the survey. We removed data of individuals who dropped out before key questions, whose demographic responses suggested that they were ineligible for the study (gender identity other than male), or who withdrew consent following completion. We also removed duplicate entries from a number of people who appeared to complete the survey more than once. The final sample was 997.¹ The average age in the sample was 34.9 ($SD = 12.3$; range = 18–76) years. The majority of the sample were currently residing in the United Kingdom or the United States (44.9% and 44.7%, respectively). The most commonly reported ethnicity was Caucasian (82.2%; see Table 1 for full breakdown of demographics).

Materials and Procedure

This study was approved by the University of Kent School of Psychology Ethics Committee (reference: 201815345096335049). Data were collected between August 25 and 26, 2018, using a survey hosted on the Qualtrics platform and distributed via the Prolific crowdsourcing platform. Participants typically completed the survey in less than 4 min and the cost of data collection was less than £700 (less than US\$ 900). Once a

Table 1. Sample Demographics.

Characteristics	<i>M</i> (range)
Age (years)	34.9 (18–76)
	<i>n</i> (%)
Current country of residence	
Australia	30 (3.0)
Canada	59 (5.9)
India ^a	1 (0.1)
Ireland	7 (0.7)
New Zealand	5 (0.5)
United Kingdom	448 (44.9)
United States	446 (44.7)
Ethnicity	
African	31 (3.1)
Caucasian	820 (82.2)
Caribbean	10 (1)
East Asian	35 (3.5)
Latino/Hispanic	18 (1.8)
Middle Eastern	2 (0.2)
Mixed	41 (4.1)
South Asian	29 (2.9)
Other	8 (0.8)
Prefer not to say	3 (0.3)

^aDespite selecting the six other countries of residence as part of Prolific prescreening, one individual currently resident in India, completed the survey.

study is launched on Prolific, eligible individuals can view the study when they log into the platform. A random subset of eligible participants is also notified by email. If needed, additional eligible participants are emailed randomly until the target sample size is reached. Participants interested in taking part in our study were presented with information about the study before deciding whether to begin and consent. Our information sheet explained that the study was investigating participants' sexual interests and past sexual behavior, and that questions would ask about sexual interests and behaviors relating to younger people, and children. Participants were told that materials were not graphic, but that questions were of a personal and potentially stigmatizing nature. Participants were informed that some questions related to illegal behaviors in broad terms but that their responses were anonymous. They were informed of procedures for ending the study or withdrawing data, and told that support service details would be available at the end of the study. The broad inclusion criteria were described in this information sheet (e.g., men 18 or above). However, the Prolific system also ensured that only eligible participants were able to see the study. Once they signed up for the study, they were presented again with the same information sheet and a consent form.

The ordering of questions was fixed, starting with demographics, before progressing broadly from less stigmatizing to more stigmatizing questions. We have made the survey materials available in various formats along with the study data on the Open Science Framework (<https://osf.io/kz2hn/>). Participants on the Prolific platform interact with the platform and with surveys using an allocated unique alphanumeric ID number to ensure anonymity. Participants were able to use these IDs to contact the researchers through the platform's messaging system with any queries or to request deletion of data.

Age of attraction (AoA). We assessed participants' AoA by asking them to "think about the people you typically find most sexually attractive" and then to indicate "what is the lowest age you typically find attractive" and "what is the highest age you typically find attractive." Answers could be any numerical value.

Sexual attraction to children. Before being asked directly about sexual attraction to children, participants were reminded of the challenging nature of some of the topics, the anonymity of their answers, and the need for honesty. Their understanding of this reminder was checked before they could continue. We then asked, "Since the age of 18, have you ever initially found someone sexually attractive but quickly realized that they were probably too young?" There were four response options available, ranging from *definitely yes* to *definitely no*. We deliberately did not define "too young" to ease participants into the survey rather than provide particularly definitive data.

Participants were next asked, "Since the age of 18, have you ever found yourself sexually attracted to someone who was under the age of 15?" Answer options were dichotomous (yes/no). Below 15 was chosen for this question as we operationalized a sexual interest in children aged 11 to 14 years as hebephilic interest and an interest in children below 11 years as pedophilic interest (for a similar approach, see Cantor & McPhail, 2015). Using branching logic, participants who answered "yes" were asked (a) "What age group did this person or people belong to?" (response options: "under 11 years of age" or "11–14 years of age"); (b) "Since the age of 18, when you have been sexually attracted to someone, how often has this been someone under the age of 15?" (responses on a 6-point scale from *always* to *once*); and (c) "Have you been sexually attracted to someone under the age of 15 in the last 12 months?" (response options: yes/no).

Sexual fantasies involving children. Participants were next asked, "Since the age of 18, have you fantasized about having sex or sexual contact with someone who was under the age of 15?" If they answered "yes," they were asked the same branched questions as for the sexual attraction item.

Proclivity to sexually offend. The questions above on sexual attraction to children were framed around age ranges mapping onto definitions of pedophilia and hebephilia. Our questions relating to proclivity toward offending behavior or actual offending behavior were framed around the age of consent where the participant was living. To ensure that

participants were aware of the age of consent where they live, we asked them to locate the country and region/state where they live on a table included in the survey and indicate the corresponding age of consent. Following this, they were asked two proclivity items with yes/no answers: “If you could be sure that no one would know and that you would not be punished, would you have sex or sexual contact with someone below the age of consent?” and “If you could be sure that no one would know and that you would not be punished, would you watch pornographic material containing someone below the age of consent?” These proclivity questions were based on likelihood of sexual offending items by Malamuth (1981) and Briere and Runtz (1989). Unlike some other studies that measure proclivity (e.g., Gannon & O’Connor, 2011; Seto et al., 2015), response options were dichotomous (yes/no), rather than in a Likert-type format.

*Sexual offending*². Sexual offending behavior was assessed with two dichotomous (yes/no) questions: “Since the age of 18, have you ever had sex or sexual contact with someone below the age of consent?” and “Since the age of 18, have you ever knowingly and deliberately viewed pornographic material containing someone below the age of consent?”³ As with the sexual interest in children and sexual fantasy involving children questions, participants who answered “yes” to either question were presented with follow-up questions assessing age of child/children,⁴ frequency of the behavior, and whether they had behaved in this way during the previous 12 months.

Honesty and debriefing. Before being debriefed, we provided participants with the opportunity to let us know how honest they had been in their responding, making it clear that payment would not depend on their answer (response options were on a 5-point scale ranging from *completely honest* to *not at all honest*). We also gave them the opportunity to explain their answer if they indicated that they had been anything other than completely honest. They could choose between the response options, “I did not feel comfortable disclosing some of my thoughts and behaviors” and “I was not really focusing on the task and therefore some of my responding was random,” or provide another explanation. Following the honesty question, participants received a short debrief message alongside details of websites and helplines for support services in the six countries sampled.

In addition to the survey question, Prolific also provides participant-level data of responses to various prescreen questions including but not limited to the prescreen items used for participant selection. We therefore had information on employment status, number of studies completed on Prolific, and several other variables. Other than the country of current residence, we did not include these in any analyses. The option to record IP addresses in Qualtrics had been turned off to increase anonymity of the data.

Results

Primary analyses were conducted using IBM SPSS 26 with some additional analysis and plotting conducted using R version 4.0.0 and an online Venn/Euler diagram generator (www.venndiagrams.net). Just over 90% of participants reported that they had

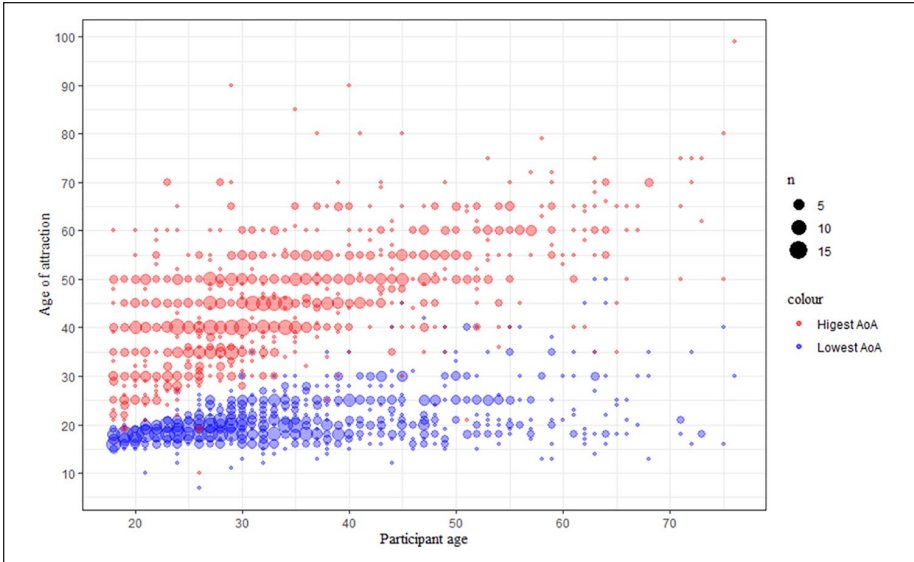


Figure 1. Distribution of highest and lowest ages of attraction by age of participant.

been completely honest in the survey, and a further 9% reported the second highest honesty rating on a 5-point scale. We did not make any adjustments based on honesty of responding as a result.⁵

AoA

Participants were asked about the lowest age they typically find attractive along with the highest age. Mean lowest AoA was 20.94 ($SD = 4.93$; range = 7–50) years. The modal age was 18. Mean highest AoA was 45.60 ($SD = 11.75$; range = 10–99) years. The modal age was 40. Figure 1 shows the progression of lowest and highest AoA as participant age increases. The relationship ($r = .43$, $p < .001$, bias-corrected and accelerated [BCa] 95% confidence interval [CI] = [.37, .49]) between participant age and lowest age is significantly weaker than the relationship ($r = .62$, $p < .001$, BCa 95% CI = [.58, .67]) between participant age and highest age ($z = -6.45$, $p < .001$; Eid et al., 2010), indicating that as participant age increases, the lower bound of male sexual interest remains more constant than the upper bound.

Inspection of the age ranges for both the lowest and highest ages typically found attractive suggested that some participants were disclosing a sexual attraction to children. These can be seen as the single points across the bottom of Figure 1. Two individuals (0.2%) expressed a lower limit of attraction for individuals younger than the age of 11. Of these, one individual indicated a lower limit of 7 and an upper limit of 10, suggesting that this individual has exclusively pedophilic sexual interest. The other individual appeared nonexclusively pedophilic, with a lower limit of 10 and an upper

limit of 25. A further 14 (1.4%) individuals expressed a lower limit for individuals between the ages of 11 and 14 (inclusive), suggesting hebephilic interest. None of these individuals were exclusively hebephilic in terms of their reported range of interest. In total, 57 individuals (5.7%) of the sample indicated a lower bound to their AoA that was below the age of consent where they live.

Participants were asked whether they had (since the age of 18) initially found someone sexually attractive but quickly realized they were probably too young. This question was designed to address potentially stigmatizing thoughts about children or young people, but ones that many participants would likely have experienced. The majority of participants (68.8%) responded to this question by answering “definitely yes” (31.9%) or “probably yes” (36.9%), whereas approximately a third answered “probably not” (16.8%) or “definitely not” (14.4%).

Sexual Attraction to Children

When asked, “Since the age of 18, have you ever found yourself sexually attracted to someone who was under the age of 15?” 153 participants (15.3%) indicated that they had. When broken down by age, 142 individuals (14.2%) reported having being attracted to children aged 11 to 14, one individual (0.1%) reported being attracted to children below 11, and a further 7 (0.7%) individuals reported being attracted to both age groups. In terms of the frequency of experiencing attraction to children below 15, just under 30% of people who had experienced this reported experiencing it “occasionally” or more frequently ($n = 45$, or 4.5% of the full sample). A little over a fifth of the subsample who indicated experiencing attraction to someone below 15 also reported experiencing attraction in the preceding 12 months ($n = 34$, 3.4% of the full sample).

Sexual Fantasies Involving Children

Seventy-nine individuals (7.9%) reported having fantasized (since the age of 18) about sex or sexual contact with someone who was below the age of 15. Seventy-four individuals (7.4%) fantasized about children aged 11 to 14, and an additional four individuals (0.4%) fantasized about sexual contact both with children below 11 and children aged from 11 to 14. A little over a quarter of the subsample ($n = 22$, 2.2% of full sample) admitting fantasies involving children indicated that their sexual fantasies included children “occasionally” or more often. One third of the subsample ($n = 26$, 2.6% of full sample) reported experiencing fantasies involving children below 15 in the previous 12 months.

Proclivity to Offend

When asked, “If you could be sure that no one would know and that you would not be punished, would you have sex or sexual contact with someone below the age of consent?” 83 participants (8.3%) reported that they would. When asked the corresponding

question about watching pornographic material containing someone below the age of consent, 68 (6.8%) responded that they would.

Perpetration of Contact Offending

Twenty-nine individuals (2.9%) reported having had sexual contact with someone younger than the age of consent since the age of 18. Twenty-seven (2.7%) individuals reported having sexual contact with someone who was older than 14 but younger than the age of consent. One individual (0.1%) reported having sexual contact with someone aged between 11 and 14. One additional individual reported having sexual contact with children in three age groups (below 11, 11–14, and above 14). Among individuals reporting sexual contact with someone below the age of consent, the modal number of occasions on which this had happened was once. However, a small number ($n = 4$; 0.4% of entire sample) reported more than 15 occasions, with one individual reporting 200. Three individuals (0.3%) disclosed sexual contact with someone below the age of consent in the previous 12 months.

Perpetration of Offenses Involving Pornographic Material Containing Children

Thirty-three participants (3.3%) indicated that they had knowingly and deliberately watched pornographic material containing someone below the age of consent since the age of 18. Eighteen individuals (1.8%) reported watching material containing individuals below the age of consent but above 14. Six individuals reported watching material containing individuals between 11 and 14 (0.6%). A further six (0.6%) individuals had watched material with children aged 11 to 14 and above 14. Finally, an additional four individuals (0.4%) had watched material containing children below 11 years of age, aged 11 to 14, and above 14. Four (0.4%) participants reported watching pornographic material containing children occasionally or more often, and 11 individuals (1.1%) reported viewing this material in the past 12 months.

Broad Findings and Country-Level Differences

We created three composite dichotomous scores: any reported attraction or fantasy involving children below age of 15, any reported proclivity toward online or contact offending, and any reported contact or online offending. A total of 231 participants (23.1%) reported at least one of these interests or behaviors. Table 2 shows the prevalence of each composite score in the sample and is broken down by child age where data were available. Figure 2 shows the overlap between the three composite scores. We examined whether there were differences in self-reported rates of interests and behaviors across the two countries most represented in our sample—the United Kingdom and United States. Mean age differed significantly across these two subsets, $t(892) = 6.191$, $p < .001$, BCa 95% CI = [3.42, 6.74]. Instead of controlling for age, we instead used stratification data from Prolific for the United States and United Kingdom to weight our

Table 2. Prevalence of Interest and Behaviors Since the Age of 18 Based on Composites of Interest, Proclivity, and Offending Questions.

Stigmatizing interest or behavior	n (%)
Attraction or fantasy involving children below age of 15	167 (16.8)
Below 11	10 (1.0)
11–14	163 (16.3)
Proclivity toward online or contact offending against persons below the age of consent	109 (10.9)
Contact or online offending	56 (5.6)
Below 11	4 (0.4)
11–14	16 (1.6)
Above 14 but below the age of consent	51 (5.1)

Note. Percentages are of the entire sample (N = 997) and may reflect overlapping groups of participants. Some participants did not answer questions about specific age ranges.

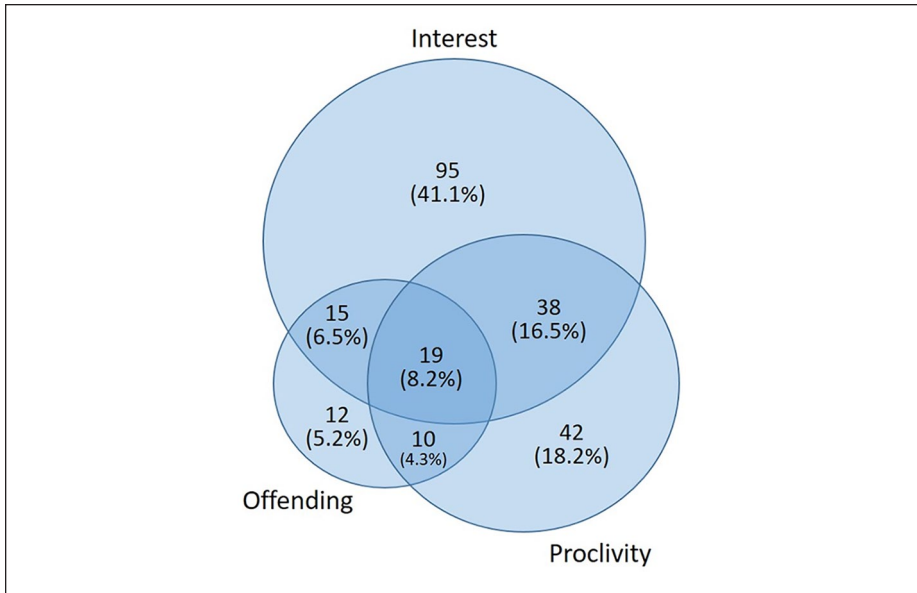


Figure 2. Overlap between participants reporting sexual interest in or fantasy involving children, proclivity to sexually offend, and offending behavior.

Note. Figures in parentheses represent percentages of the total number of participants in this subsample (n = 231).

samples (Prolific Team, 2020), to better approximate samples that are representative in terms of age from both countries. Chi-square results suggest a higher prevalence among U.S. participants of self-reported sexual interest, attraction, or fantasy to children below

15, $\chi^2(1) = 6.21, p = .013, d = 0.17$; proclivity toward contact offending or use of pornographic material containing children, $\chi^2(1) = 8.54, p = .003, d = 0.2$; and actual contact offending or use of pornographic material containing children, $\chi^2(1) = 9.40, p = .002, d = 0.21$.⁶

Discussion

Our findings demonstrated that it is possible—using crowdsourcing platforms—to reach a sample of individuals self-reporting stigmatizing sexual interests and behaviors. Almost a quarter of the sample reported some degree of sexual interest in children, a proclivity to offend, or offending behavior. Therefore, Prolific is a viable method of recruitment for cross-sectional studies with stigmatizing outcome variables. Our data suggest that it is plausible to use crowdsourced data to reach individuals in sufficient numbers to be able to carry out quantitative research on stigmatizing sexual interests and fantasy toward children older than 11, in particular. This is especially the case where funding allows for over-recruitment or where large effect sizes are hypothesized.

Alongside the potential value of Prolific, our results also show that the platform may not be a suitable recruitment method for all outcomes or all budgets. The frequency of self-reported pedophilic attraction or offending behavior may be too low to be valuable in many cross-sectional research designs without very large samples and/or very simple planned analyses. With the current data, for example, a study examining predictors of use of pornographic material containing children (below the age of consent) would have only had sufficient power to examine the influence of three predictors in a logistic regression, based on conventional rules of thumb of 10 positive cases per predictor variable (Peduzzi et al., 1996). The 12-month incidence of sexual interest, fantasy, or behavior involving children provides an indication that longitudinal research on stigmatizing behavior using crowdsourcing is unlikely to produce sufficient positive cases for meaningful analyses, at least with the questions asked in our study.

Despite the fact that people did not self-report problematic behavior at a high enough rate for some designs, our findings show that very short measures such as ours could be used as an initial screening study to identify a subset of individuals for more detailed follow-up using designs that require fewer participants. For example, using the data collected in the current study, we would be able to follow up with individuals disclosing offending behavior for a qualitative study. Similarly, it would be possible to use data in the current study to identify participants suitable for an experience sampling study (see Larson & Csikszentmihalyi, 2014) on the daily experiences of people whose lower bound age of sexual attraction is at or below the age of consent where they live. These types of designs would require researchers to be able to follow up on participants. This can be achieved in Prolific while maintaining participant anonymity by limiting the visibility of follow-up studies to only those Prolific IDs that are eligible.

The primary aim of this research was to examine the prevalence with which people self-report stigmatizing interests and behaviors when recruited through Prolific, rather than establishing the population prevalence per se. A representative sample would

have helped establish the latter. To be representative of either the U.K. or U.S. populations, our study would have needed a larger proportion of participants above 40 years of age and a smaller proportion of Caucasian participants. Nonetheless, it is useful to examine our results against what is known about these interests and behaviors in community samples. One percent of our sample expressed current or past, exclusive or nonexclusive pedophilic interest, attraction, or fantasy. This figure is the same as the rate of pedophilia in men estimated by Seto (2017). While it is possible to argue that this is an underestimation of pedophilia in our sample due to presentation bias in self-report, it is also possible that individuals were reporting fleeting sexual interest rather than recurring pedophilic interest. The rates of apparent (at least incidental) hebephilic interest in the sample was considerably higher (16.3%). To our knowledge, this is the largest study to date that has examined the prevalence of self-reported hebephilic interest during adulthood.

Comparing results of this study with similar examinations of sexual interests and behaviors toward children (e.g., Alanko et al., 2013; Dombert et al., 2016; Seto et al., 2015) is challenging, given that different studies used different questions, different response options, different timeframes, different sample ages, and different operationalization of sexual interest in or activity involving children. The study by Seto and colleagues (2015), for example, reported a slightly higher rate of viewing pornographic material containing children than in our findings (4.2% vs. 3.3%). However, the two statistics may not be directly comparable given that the sample tested by Seto and colleagues was younger than in the current study (meaning that lifetime prevalence of any behavior *should* have been lower than in our study), data were collected over a decade earlier (meaning that patterns of internet use may have changed), and the wording of the item in our study reflected knowing and deliberate use of pornographic material containing children more precisely. The study by Dombert et al. (2016) is the most directly comparable with our data, at least regarding interest in and behavior involving prepubescent children. Across most estimates, Dombert and colleagues reported greater disclosure of interest in and offending involving prepubescent children than in our sample. These differences may be due to in part to the comprehensiveness of the study by Dombert and colleagues (theirs was a longer procedure than the current study). In addition, they used 12 or younger as their cutoff for prepubescence, whereas we operationalized pedophilic interest/behavior as involving children aged 10 or younger (similarly to Cantor & McPhail, 2015). Therefore, some of the interest and behavior captured by the Dombert et al. (2016) study might be captured in our data relating to hebephilic interest or behavior. Even taking this into account, it appears that the German sample were self-reporting interest in young children and offending behavior toward them at a higher rate than our sample, which was predominantly drawn from the United Kingdom and United States.

To examine whether there was evidence of country-level differences in self-reported sexual interest in children or offending behavior toward children, we examined whether the U.K. and U.S. samples in our data differed in their rates of disclosing interests and behaviors collapsed into three composite scores. Across attraction or fantasy involving children below the age of 15, proclivity toward online or contact offending, and reported contact or online offending, U.S. respondents disclosed more stigmatizing interests and

behaviors, although effect sizes for these differences were small. This comparison was carried out post hoc based on the observation that disclosure rates in the current data appeared considerably lower than those found by Dombert et al. (2016) with a German sample. Therefore, further research is needed to replicate this finding and, if replicated, to explain why disclosure rates may differ by country. These findings may reflect differences in the base rate of pedophilia, hebephilia, and sexual offending against children across different countries (see Pereda et al., 2009). Alternatively, there may be cross-national differences in how stigmatizing these interests and behaviors are perceived, which may lead to greater social desirability in responding. Jahnke et al. (2015), for example, found that a U.S. sample demonstrated more stigmatized attitudes toward pedophilia than a German sample—although the authors of that study caution against over-interpretation of this finding. However, if replicated, this could partially explain why, despite the difference between the groups, U.S. and U.K. participants disclosed stigmatizing interests and behaviors at a lower rate than was reported by Dombert et al. (2016). The differences between the U.S. and U.K. samples observed in our data may reflect similar cross-national differences specific to the domains of pedohebephilia and sexual offending, or may reflect more general differences in impression management (see Tully & Bailey, 2017) or other factors that may influence survey responding.

Figure 2 demonstrates that there was a considerable overlap between individuals disclosing sexual interest in children, a proclivity to offend against children, and actual offending. However, there was also a lack of overlap that, in places, appears counter-intuitive. Given that pedohebephilic interest and offending against children are not synonymous, it is unsurprising that these circles did not fully overlap. However, it appears contradictory that there was a subset of individuals ($n = 41$; 4.1%) who indicated a proclivity to offend without reporting a sexual interest in children or a history of offending. This in part can be explained by the fact that our composite measure of sexual interest in children considered only pedohebephilic attraction, whereas proclivity items asked about individuals below the age of consent. Some of the *proclivity only* participants had in fact expressed a lower bound of sexual interest at or below the age of consent in their jurisdiction. The remaining individuals populating this segment of the Venn diagram may have risk factors for sexual abuse or use of pornographic material containing children unrelated to a sexual interest in children (e.g., antisocial orientation; Hanson & Morton-Bourgon, 2005). Alternatively, this lack of overlap may reflect a degree of less than fully honest responding.

Apart from the implications of our findings for forensic psychological and criminological research, our data demonstrated some interesting findings from a general sexological perspective. Figure 1 presents clear evidence of the fact that the lower bound of men's age of sexual attraction increases with age but at a slower rate than the upper bound. This was further evidenced by our finding that the correlation between participant age and the upper bound age of interest was stronger than the correlation between participant age and the lower bound. These findings replicate results for male participants reported by Antfolk (2017), but with a slightly larger sample.

Several factors limit the interpretation and generalizability of our findings. Designed as a brief screening tool, the single items used, many with dichotomous response

options, reduced our ability to examine nuanced patterns in the data. In addition, the use of more representative samples would have allowed us greater confidence in our conclusions about the prevalence of these stigmatizing interests and behaviors in the population. Since the collection of these data, the option to obtain more representative samples of U.S. and U.K. participants has been added to the functionality of the Prolific platform.

The aim of the study was to examine self-reported stigmatizing interests and behaviors. However, this reliance on self-report obviously limits our confidence in extrapolating from these findings the true prevalence of male pedohebephilic interest, offense proclivity, and sexual offending involving children. The study only collected data from men residing in six Anglophone countries. Therefore, there is a need for further research to examine whether our findings generalize to other jurisdictions and to explore the prevalence of these phenomena among other genders. Finally, the broad framing of our sexual attraction to children questions in particular meant that we were always likely to identify some individuals who have experienced uncharacteristic sexual attraction to a child. These individuals may not reflect a population of interest for researchers examining more enduring sexual interest in children.

Taken together, our findings indicate that crowdsourcing is a viable and useful tool with which to reach people admitting stigmatizing interests and behaviors relating to children, including sexual offending behavior. The prevalence of self-reported interests and behaviors identified in this survey should provide an indication to other researchers about the utility of using crowdsourcing for their particular outcome of interest as well as insight into budgetary and sample size requirements when planning research. Our findings may encourage people to use crowdsourcing as a way of identifying a subsample to engage in more intensive follow-up studies, rather than running speculative cross-sectional studies in the hope that a minimum number of cases are identified. The specific rates of male self-reported sexual attraction to children, proclivity toward offending, and actual offending behavior—although nonrepresentative—contribute to the understanding of the prevalence of these interests and behaviors in the community.

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Notes

1. A small number of participants ($n = 3$) had missing data due to noncompletion of the survey. Participants were *required* to answer the core questions to progress in the survey but only *requested* to answer follow-up questions, resulting in some missing data on these items. One individual left a comment stating that some of his responses referred to historic behaviors that have since been decriminalized. Three participants appeared to confuse lowest age of attraction with their highest (and vice versa). These participants are left out of the relevant analyses.
2. We labeled these questions as reflecting “sexual offending” for simplicity. However, there is a possibility that some behaviors would not be prosecuted in jurisdictions that allow close-in-age exemptions (also known as Romeo and Juliet laws).
3. Specified ages in laws regarding indecent images of children vary across jurisdictions and are sometimes higher than the age of consent for sexual activity in that jurisdiction. This question therefore captures illegal behavior in all jurisdictions sampled, but may not capture the use of pornographic material containing individuals above the age of consent for sexual activity but below the legal definition for indecent images of children.
4. An additional age category of “over 14 years of age” was included to capture sexual behavior involving children older than our defined age categories for pedophilic or hebephilic offending/interest but below the age of consent in the participant’s jurisdiction.
5. The most frequent reason given for less than complete honesty was that participants “did not feel comfortable disclosing some of [their] thoughts and behaviors.” A number of people responding in this way had reported some stigmatizing interests but appeared to have not fully disclosed all relevant interests or behaviors.
6. These results were also significant with unweighted data.

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