

Is Contact with Children Related to Legitimizing Beliefs Toward Sex with Children Among Men with Pedophilia?

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Abstract Among pedophilic men, social contact with children has been discussed as creating a risk situation for sexual abuse. Also, pedophilic men searching for such contact are seen as harboring more beliefs legitimizing sexual contact with children. However, social contact may also decrease false beliefs. We tested these competing views in an anonymous Internet survey with a non-forensic, non-clinical sample of 104 self-classified pedophilic men. Results showed that both increased social and physical contact were significantly linked to fewer legitimizing beliefs toward sex with children, even when controlling for past psychotherapy, educational level, social desirability, and age. Controlling for previous conviction for child sexual offenses reduced the effect for physical contact, but not for social contact. Exploratory analyses showed that either type of contact had no significant effect on total self-perceived risk of offending. However, pedophilic men with physical contact with children perceived a higher risk of more direct (i.e., child abuse) than indirect offenses (i.e., child pornography offenses) compared to pedophilic men without physical contact. Despite limitations of the correlational design and the only small to moderate effects, the results challenge the assumption that complete avoidance of contact with children is necessary for persons with pedophilia to reduce the risk of abusive behavior.

Keywords Pedophilia · Social contact · Physical contact · Legitimizing beliefs · DSM-5

Introduction

People with pedophilic interests (PWP) experience an exclusive or non-exclusive sexual attraction to prepubescent children (Beier et al., 2009; Dombert et al., 2016). A basic decision PWP face is whether to have social contact with children in their everyday, private life, and how to manage these contacts (Dombert et al., 2016; Hanson & Bussiere, 1998). As meaningful studies concerning situational risk factors for first time offending are currently missing (Whitaker et al., 2008), mental health professionals or counselors lack evidence about what strategy to advise to a client with pedophilic interests in this regard. Frequent contact with extra-familial children, and in particular non-sexual physical contact with children (e.g., horseplay or cuddling), are typically considered problematic, as they may lead to sexual offenses. However, PWP with sexual interest in children, but without experience with children, may lack the chance to learn about a child's actual emotional needs and instead harbor unrealistic and distorted beliefs regarding child sexuality, as it may be "easier to imagine children as sexual beings when there was no real contact and distorted cognitions about children and sexuality were not contradicted by real life" (Houtepen, Sijtsema, & Bogaerts, 2015, p. 54). Contact between a PWP and a child in a non-offensive context may help to form realistic beliefs about a child's emotional needs. This is especially true if the PWP has either no strong prior beliefs, or already leans toward a realistic belief, which would be confirmed and strengthened by first-hand experience. If a person already has formed strong unrealistic prior beliefs, then it is more difficult to adapt one's opinion, as people tend to shift the interpretation of the environment so

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that it is consistent with preconceived beliefs (called assimilation), rather than shifting one's belief to fit the evidence from the environment (called accommodation; see also confirmation bias, Nickerson, 1998). Nevertheless, even in the situation of unrealistic prior beliefs accommodation is easier to do when first-hand evidence from the environment is available. In the present research we examined the frequency of social and physical contacts with children in a community sample of PWP and analyzed the associations between contact and legitimizing beliefs about sex with children as well as the self-perceived risk of offending against children.¹

Pedophilia is a distinct sexual interest in children that is only considered pathologic in the DSM-5 (American Psychiatric Association, 2013) if the person who experiences these interests also experiences distress or interpersonal difficulties because of them, or commits sexual crimes involving children (American Psychiatric Association, 2013; Seto, 2012). Although PWP are overrepresented among child sexual offenders (Dombert et al., 2016; Hanson & Bussiere, 1998; Hoyer, Kunst, & Schmidt, 2001; Seto, 2008), it is important to note that only a subgroup of PWP commit child sexual offenses and only a subgroup of child sexual offenders are PWP. Despite this, the high stigmatization of PWP in the public (Feldman & Crandall, 2007; Jahnke, Imhoff, & Hoyer, 2015a; McCartan, 2004) implies that a vast majority of the community wants PWP to stay away from their families. Jahnke et al. (2015a) found that 78% of a German ad hoc sample preferred people with such interests to stay out of their neighborhood even if they have never committed a crime. Among participants with children below the age of 14, the effect was even more pronounced (Jahnke et al., 2015a, b). Nevertheless, it is to be expected that many PWP from the community spend time with children in their daily lives (Berliner Institut für Sexualwissenschaften und Sexualmedizin, 2013; Turner, Rettenberger, Lohmann, Eher, & Briken, 2014), keeping their sexual interests a secret from the children and most other individuals, including the children's parents (Freimond, 2013; Jahnke, Schmidt, Geradt, & Hoyer, 2015b).

Many researchers have suggested that PWP should have no, or very limited, social contact with children (Berliner Institut für Sexualwissenschaften und Sexualmedizin, 2013; Turner et al., 2014; see also Babchishin, Hanson, & Vanzuylen, 2015). The main rationale behind this *limited contact policy* is that every unsupervised encounter between a PWP and a child, even if the PWP in general is acting in a responsible way, may include a risk for an abusive situation. If this situation is repeated often, it increases the likelihood that it may occur in combination with other circumstances that decrease the ability of the PWP to act responsibly, for example, unrelated emotionally challenging life events. Together, these factors may increase the risk to a dangerous level (Turner et al., 2014).

A counter argument, in particular for those who have not committed crimes, is that a lack of contact may by itself increase the risk of abusive behavior because the direct normative corrective against irrational beliefs is removed. Thus, PWP who lack actual contact with children could also lack opportunities to correct their possibly distorted beliefs concerning adult-child sex because they are unable to get to know children and their needs. To make matters worse, the high stigmatization implies that PWP typically have few acquaintances who know about their sexuality and hence have reduced possibilities to discuss their beliefs with others (Jahnke et al., 2015b). In lack of experience-based expertise for both children and acquaintances, and considering their sexual desires, PWP without contact with children may find it challenging to form realistic beliefs about the needs of children. On the other hand, PWP with frequent contact with children may apply the feedback from children in order to develop more realistic beliefs. This effect could potentially be moderated (enhanced or decreased) through non-abusive physical contact like horseplay and cuddling.

Research on the potential risks or benefits of non-sexual contact with children is especially relevant for people with pedophilia in a non-forensic and non-clinical setting since this group makes up a relevant part of the population of PWP, and their interactions with children are likely to be the least restricted or controlled by authorities. Due to stigmatization and recruitment difficulties (Okami & Goldberg, 1992), very few researchers have investigated non-abusive social contacts between PWP and children (compare, however, Vogt, 2006, and citations therein, and recently Bailey, Hsu, & Bernhard, 2016). This is understandable given the high methodological thresholds necessary to reach the target population. However, the use of Internet research methodology, which assures a maximum level of anonymity, calls for renewed efforts to study these questions (see also Dombert et al., 2016).

In the current research, we used data of PWP from the community collected in the Everyday Pedophilia Study (Jahnke et al., 2015b) to investigate the frequency of naturally occurring forms of contact with children and its links to legitimizing beliefs, as well as several other variables. We primarily compared the two exclusive hypotheses outlined above with Bayesian comparison and classical significance testing:

H1 More social and physical contacts with children are associated with more or equal legitimizing beliefs.

H2 More social and physical contacts with children are associated with less legitimizing beliefs.

In both hypotheses, we compared PWP with social or physical contact to PWP without such contact. In addition, we explored which items of the scale measuring legitimizing beliefs (the Bumby Child Molest Scale; Bumby, 1996; German version: Rambow, Elsner, Feelgood, & Hoyer, 2008) drive the effect of fewer legitimizing beliefs in the contact group, and investigated a number of alternative explanations for the confirmatory result.

¹ In the following, if we use "contact" without specifying social or physical contact, we refer to both forms of contact.

We explored the relationship between social and physical contacts and several other variables, including self-perceived risk of offending, self-confidence, loneliness, self-esteem, the wish to undo past events, and strategies to reduce the risk of harmful interactions.

Method

Participants

A total of 104 men (mean age = 37.3 years, SD = 11.9, 85.6% German) were recruited in the Everyday Pedophilia Study via Internet forums (www.jungsforum.net, www.krumme13.org; all forums operate on a strictly legal basis and explicitly prohibit posting of illegal contents such as child pornography) and snowball sampling. Everyone in the sample self-classified himself as a PWP. Sixteen percent of the sample were married, 84% had no biological children. Sixty-three percent had completed the Abitur (similar to U.S. college entry examination), and 35% had gained a degree comparable to a master's degree. These numbers were considerably higher than the average population in Germany, potentially due to self-selection bias because of the Internet sampling. The majority of the participants (83%) were sexually interested solely or mostly in boys, 3% equally in both genders, and 14% solely or mostly in girls. Roughly two-thirds (68%) were primarily attracted to children. Besides their attraction to children, 16% had a notable sexual attraction toward men, 23% toward adults of both genders, and 9% toward women. Three quarters of the sample (73%) reported to have never been convicted for sexual crimes against children, and 68% had never sought or received treatment from a mental health professional. Half (51%) of the sample had not participated in any study on pedophilia previously. Regular interaction with children (at least once a week over a period of at least 3 months during the last year) was reported by 58% of the sample (Jahnke et al., 2015b).²

Measures

Frequency of Social Contact with Children

Two items from the Everyday Pedophilia Study were used to assess social contact of PWP with children: "During the last 12 months, I frequently spent time alone with... children (i.e., at least weekly meetings for a period of at least 3 months)" and "During the last 12 months, I frequently spent time with... children as part of a group (i.e., at least weekly meetings for a period of at least 3 months; for example, as the coach of a sports team)." Forty-two percent of the participants responded "zero"

to both items, while 58% responded at least "one" to one or both items, with an average of 9.6 children in group social contacts and 2.7 children in one-to-one social contacts. This group will be referred to as "frequent social contact group" in the following. Note that there is a qualitative difference between the zero category and all other categories above and beyond the quantitative difference. That is, the difference between "zero contact" and "one contact" is of different nature compared to the difference of "one contact" to "two contacts."

Frequency of Physical Contact with Children

To compare the effect of frequent social contact with actual physical contact, an item from the Everyday Pedophilia Study that asked, "when meeting children, how often do you cuddle or horseplay with children" was used and was answered on a Likert scale from "1" ("never") to "7" ("almost every time"). Three participants did not answer this question, while 40 replied "1", and 61 replied at least "2". The latter group is termed the "physical contact" group in the following.

Legitimizing Beliefs About Sex with Children

We used a 28-item short version of the Bumby Child Molest Scale (Bumby, 1996; Rambow et al., 2008) to measure legitimizing beliefs about sex with children. It contains a list of beliefs that people who have offended against children might use to legitimize their behavior (e.g., "Sexual activity with children can help the child learn about sex"), rated on a 4-point Likert scale ranging from "0" ("strongly disagree") to "3" ("strongly agree").

To extract maximal reliability of the items, we ran a principal component analysis (PCA) on the 28 items. We observed that six items showed less than half of the loading on the principal eigenvector, potentially due to the differences in the Everyday Pedophilia sample compared to a prisoner sample for which the Bumby scale was initially designed. We therefore removed these six items, thus improving the r^2 of the scale from .35 to .43 (Cronbach's α improved from .92 to .93). We then used the loading of each participant on the principal eigenvector.³

Self-Reported Risk of Committing a Sexual Offense

We used three one-item measures to assess whether participants could conceive of themselves as committing a sexual offense, which are (1) "can you conceive of yourself engaging in sexual activity with a child or allowing the child to engage in sexual activity with yourself," (2) "can you conceive of yourself inducing a child to engage in sexual activity with a third person or to allow a third person to engage in sexual activity with the child,"

² Note that we have used the sample reported here previously (Jahnke et al., 2015). Further details can be found in that article. We repeat some central aspects here for convenience. We forgo paraphrasing for better readability.

³ Note that performing our analyses with sum scores instead of PCA scores did not change the results qualitatively and, in fact, strengthened them quantitatively.

and (3) can you conceive of yourself consuming child pornography.” All three items closely paraphrased laws from the German criminal code penalizing these acts. Responses were on a 7-point Likert scale ranging from 1 (“do not agree at all”) to 7 (“fully agree”). As almost all participants strongly rejected the second item, and as it showed no strong correlations to the other two, we removed it from further analysis.

UCLA Loneliness Scale

For investigating potential covariates, we used the UCLA Loneliness Scale Revised (translated by Bilsky & Hosser, 1998, from Russell, Peplaus, & Cutronas, 1980) with eleven 7-point Likert scale items. The scale is designed to measure how socially isolated a person feels, which is an important covariate for this analysis.

Data Analysis

Analyses in this article were comparisons between the contact and the non-contact groups. For all significance tests exact p values with two valid digits were reported for $p < .15$, and “ $p = n.s.$ ” otherwise. When comparing the groups on a continuous scale, effect size was reported as the mean difference (MD) in both groups in standard deviations (SD) of the scale. In addition, for the central comparison with legitimizing beliefs, items of the scale were fit simultaneously with the group difference in an SEM. The a posteriori probability that the value is larger than zero under an uninformative prior was reported (Gill, 2007).

When comparing the groups on nominal items (e.g., education), a chi-square test against distribution independence in both groups was reported. Ordinal Likert scale items were pooled from the lower and the higher part of the scale, ignoring answers from a middle category where that is present, and a chi-square test against distribution independence was reported to ensure enough participants in each category. The same test was used for comparing binary items. Statistical control for items with discrete answers was applied strictly, that is, by controlling for all answer options. Statistical control for continuous items and scales was done by eliminating their linear contribution.

Note that the comparison of H1 to H2 was a confirmatory analysis. All other results are exploratory in nature. We reported p values for these results; however, these should not be interpreted as confirmatory results, but as indications where follow-up studies may find confirmatory results.

Results

Descriptive Results

Among the 104 respondents, 30 indicated to not have had social or physical contact with children in the previous year. Sixty-one

reported to have at least weekly contact over a period of at least 3 months with a child during the last year, either in a group of children (14), alone (23), or both (24). Sixty participants reported to cuddle or horseplay with children if they meet with children, responding with at least a 2 on a Likert scale from 1 (“never”) to 7 (“at every meeting”). Fifty participants reported to have both social and physical contacts with children. Therefore, there were 11 participants left with social contact, but without physical contact, and 10 participants that had no frequent social contact, but reported to horseplay or cuddle with children if they spend time with children. For three participants, the response to the question about physical contact was absent.

Table 1 shows the results of the study descriptively, comparing the full sample, the subgroups with and without frequent social contact, and the subgroups with and without physical contact. Legitimizing beliefs were roughly one-sixth standard deviations lower for the groups with social contact compared to the respective groups without social contact. Sum score of self-perceived risks to offend was roughly equal for the groups with and without social contact, with a slight tendency toward lower self-perceived risk for the groups with social contact. The difference score describes whether participants, if perceiving themselves at risk to offend against children, tend more toward direct offenses (i.e., abuse) than toward indirect offenses (i.e., pornography). While there was not much association with offense types with the social contact group, the physical contact group descriptively showed more physical offenses if perceiving themselves at risk.

PWP with frequent social contact showed more self-confidence (note that higher values in the item correspond to lower self-confidence), more self-esteem, less social fear, and less desire to undo a past event. PWP with physical contact showed the same effects, but even more pronounced. While the social contact group reported almost the same level of loneliness as the group without social contact, the physical contact group overall reported less loneliness.

Correlates of Social Contact

Figure 1 shows the distribution of how many children PWP in our sample had frequent social contact with, summing up single and group contact. The clear inflation of the zero category demonstrates that a large amount of PWP either had no opportunity to meet with children frequently, or decided to avoid any private contact with children. In the following, we will describe the association of social contact with other variables.

Legitimizing Beliefs Toward Sex with Children

Most importantly, PWP with social contact with children showed less legitimizing beliefs than PWP who did not meet with children. Overall, the scale value for legitimizing beliefs toward

Table 1 Descriptive results for the full sample and for participants with and without frequent social contact and physical contact with children, respectively

Variable	Full sample	Frequent social contact		Physical contact	
		Yes	No	Yes	No
Number of participants	104	61	43	60	41
Legitimizing beliefs ^a	0	-0.15	0.21	-0.18	0.25
Sum score offenses ^b	9.55	9.52	9.59	9.40	9.76
Difference score offenses ^b	-0.20	-0.18	-0.21	0.23	-0.81
Self-confidence ^c	2.32 (2)	2.15 (2)	2.56 (3)	2.18 (2)	2.5 (2.5)
Loneliness ^a	0	-0.01	0.01	-0.14	0.19
Self-esteem ^a	0	0.11	-0.15	0.16	-0.22
Social fear ^a	0	-0.06	0.08	-0.13	0.18
Wish to undo past event ^d	2.73 (3)	2.49 (3)	3.07 (3)	2.35 (2)	3.25 (4)

Scales are given in *t* scores, single items, or sum/difference scores in scale units

^aMeasured by scale, values presented in *t* scores

^bSum and difference score, respectively, of the two single items asking whether participants can conceive of themselves to commit sexual abuse and child pornography (both 7-point Likert scales; sum values range from 2 to 14; positive values on difference score indicate a tendency toward abuse over pornography)

^cMeasured by a single 4-point Likert scale item, lower values mean higher self-confidence. Presented in scale steps (values in parentheses are medians)

^dMeasured by a single 5-point Likert scale item, lower values mean less desire to undo a past event. Presented in scale steps (values in parentheses are medians)

sex with children (Fig. 2) in the social contact group was 0.37 standard deviations lower than in the non-contact group, ($t[102] = 1.73, p = .043, CI_{90\%} [-0.02, 0.76]$) ($t[102] = 2.06, p = .021, CI_{90\%} [0.01, 0.80]$). To improve the estimate we set up the group difference as a confirmatory factor model using structural equation modeling (SEM; RMSEA = 0.08). The RMSEA value was somewhat higher than 0.06, which has recently been reported as a potential cutoff value. However, 0.06 would rather be expected for fewer indicators than the model used here, for which reason a range of 0.08–0.1 still seems a reasonable fit following the original reasoning of MacCallum, Browne, and Sugawara (1996). Figure 3 shows a path diagram of the model. The model was fitted to the data and computed the Bayesian a posteriori distribution for the mean difference assuming an uninformative prior. Not surprisingly, the result was very similar to the *t* test result, but with additional information due to the simultaneous estimate of the factor loadings and the mean difference. The a posteriori probability for H1 (i.e., that social contact was associated with more legitimizing beliefs) under equal a priori probabilities was $P(\mu_1 - \mu_2 > 0) = 3.69\%$ (Bayes coefficient, i.e., a posteriori probability ratio under an uninformative prior, 0.0383). This implies that even if one assumed an unequal prior distribution with 90% a priori probability for H1, H2 still was more likely in the light of the current data. Note that the effect was driven completely by the group membership; within the social contact group, the number of contacts was not related to legitimizing beliefs ($r = .05, p = n.s.$)

Self-Reported Risk of Offenses Against Children

The sum score of both items assessing how much participants perceive themselves at risk of committing offenses against children had an estimated correlation of zero with frequent social contact (MD = -0.08 scale steps, $p = n.s., CI_{90\%} [-1.64, 1.49]$). None of the two items separately showed a significant relation to social contact. There was also no significant relation to the difference score of the two items (MD = 0.03 scale steps, $p = n.s., CI_{90\%} [-0.87, 0.93]$), indicating no substantial difference between PWP with and without frequent social contact toward which kind of offense they report themselves at risk of, if any.

Single Bumby Scale Items

Table 2 lists all items of the Bumby scale together with the average, median, and the difference between the two groups (in steps on the Likert scale with four items). The list is sorted by the difference between the social contact and the non-contact groups. Note that the percentage of overall agreement descriptively showed a slight negative correlation to the difference between the social contact and the non-contact groups ($r = -.30, p = .10, CI_{90\%} [-0.07, 0.67]$).

Consistently, 20 of the 22 items showed a higher endorsement rate in the no social contact group than in the frequent social contact group. One of the two exceptions was close to zero. The last item in the list, however, descriptively showed a slight tendency

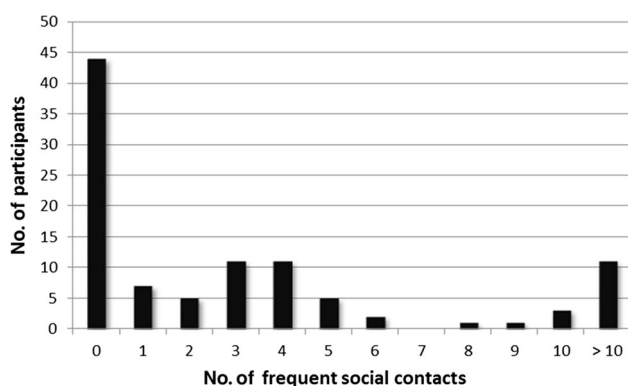


Fig. 1 Distribution of the number of children PWP frequently meet. Values for single and group contact are summed. The vertical axis gives the number of participants for each number (coinciding with percentages up to small differences)

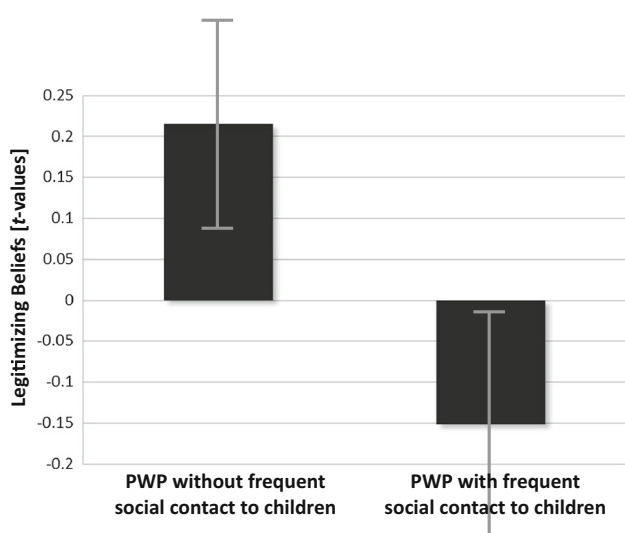


Fig. 2 Legitimizing beliefs toward sex with children for PWP with and without frequent social contact with children, standardized to *t* values. Boxes reach from zero to the expected value, and error bars indicate standard errors. Note that negative expected values result in boxes pointing downward from zero

toward higher endorsement for the social contact group (MD = .19 steps, $\chi^2[1] = 1.80, p = .18$). It is noteworthy that this item (“Having sexual thoughts and fantasies about a child isn’t all that bad because at least it is not really hurting the child”) was potentially the one that even persons without pedophilia might agree with. This item was also the item with the highest overall agreement; among all participants, only 7 did not either agree or fully agree to the item.

Other Items

Although the Everyday Pedophilia Study does not include an explicit scale for self-confidence, one item from the Fear of Negative Evaluation scale (Kemper, Lutz, & Neuser, 2012; adaptation from Watson & Friend, 1969) reads “I’m afraid

to do or say something wrong” (4-point Likert scale). On this item, PWP with social contact with children scored on average 0.41 points lower than PWP in the no social contact group ($\chi^2[1] = 6.04, p = .014$), suggesting that the social contact group is more self-confident. The median in the social contact group was the second lowest option (“applies sometimes”), but was the second highest option for the non-contact group (“applies frequently”).

In the UCLA Loneliness Scale Revised, both groups had comparable mean values (MD = 0.004 SD, $p = \text{n.s.}$, CI_{90%} [−2.10, 1.97]). The pattern for both groups within the scale items, however, was remarkably different. PWP in the frequent social contact group descriptively indicated less loneliness on an item indicating isolation (“I feel isolated,” MD = −0.60 steps, $\chi^2[1] = 3.54, p = .060$), but significantly more loneliness on items that indicate being able to talk to others confidentially, e.g., “There are people I can talk to” (MD = 0.76 steps, $\chi^2[1] = 5.41, p = .020$) and “There are people I can resort to” (MD = 0.72 steps, $\chi^2[1] = 4.60, p = .032$).

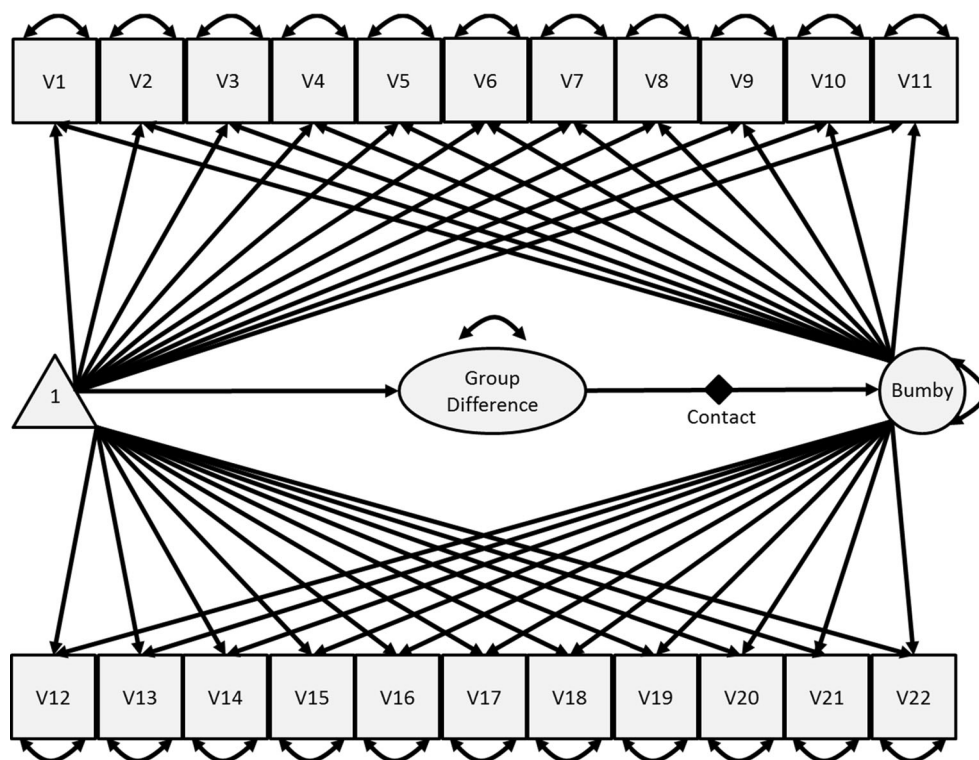
The Everyday Pedophilia Study also contained ten 5-point Likert scale items from the Rosenberg Self-Esteem scale (Rosenberg, 1965) in a translation by Ferring and Filipp (1996). All ten items indicated higher self-esteem for the social contact group, although the difference was very small in most items and not significant for the complete scale (MD = 0.28 SD, $p = \text{n.s.}$, $P(\mu_1 - \mu_2 > 0) = 10.3\%$ in the posterior distribution of a Bayesian estimate with non-informative prior). The difference was more pronounced in the following two items, “I’m afraid there is not much I can be proud of” (MD = −0.53 steps, $\chi^2[1] = 4.71, p = .030$) and “I think of myself as a valuable person, at least I’m not less valuable than others” (MD = 0.40 steps, $p = \text{n.s.}$).

The difference in one item from the Coping Inventory of Stressful Situations (CISS; Endler & Parker, 1990; modified and translated by Källin, 1995, obtained from Neutze, Grundmann, Scherner, & Beier, 2012) is to be noted. This 5-point Likert scale item reads “I wish I could undo what happened,” which in the context of this study could be interpreted by the participants as measuring regret for a specific event, potentially a case of abuse or other harm committed to a child. Following the logic that frequent exposure to children increases the risk for such dramatic events, one would expect a substantially higher rating in the social contact group. However, we found that PWP from the social contact group score 0.58 scale steps lower ($p = .027$) on this item. The median changed from category 3 (“undecided”) to 2.5 (between “undecided” and “rather untypical”).

The social contact group also reported significantly less previous convictions (MD = −0.24 steps, $\chi^2[1] = 7.58, p = .0059$). However, it is important to note that PWP who were convicted in the past often get some kind of restraint that makes it difficult or even impossible to be in social contact with children afterward.

The Everyday Pedophilia Study also asked participants about their endorsement (on a 7-point Likert scale) of 13 potential strategies a PWP might apply to reduce the risk of harmful

Fig. 3 Structural equation model to simultaneously fit factor loadings on legitimizing beliefs toward sex with children, and group effect of frequent social contact. All loadings, means, and residual errors are estimated



interactions with a child. Considering our result that PWP with frequent social contact with children showed less legitimizing beliefs about sex with children, and more self-confidence in their interactions with children, it may be worthwhile to investigate which strategies this group endorses more and which they endorse less. Table 3 lists these strategies together with average, median, and mean differences (in scale steps) between the social contact and the non-contact group. Overall, the social contact group seemed more critical to most strategies, in particular to strategies which appear fairly questionable. Remarkably, the contact group endorsed the strategy to respect warning signals slightly more ($MD = -0.79$ steps, $\chi^2[1] = 3.54, p = .060$). On the scale from 1 (“fully disagree”) to 7 (“fully agree”), the median changed from category 3 in the non-contact group to 4.5 in the social contact group. The warning signals may include general signals, like a particularly attractive physical appearance, but arguably also include warning signals emitted by the children in the interaction (for example, a worried look when the PWP act in a way the child finds uncomfortable, a roll of the eye, or a failure to react on a suggestion if the child cannot verbalize his or her disagreement), again substantiating the hypothesis that PWP with frequent social contact with children are more experienced in evaluating such warning signals.

Correlates of Physical Contact with Children

The frequent social contact group described above is defined by reporting frequent meetings with children, in group or alone,

during the last year. This contact does not necessarily include physical contact, and at the same time PWP that do not meet children frequently during the last year may still have infrequent contact with children that may include physical contact. Although the groups defined by social contact and physical contact strongly overlapped (50 participants are in both groups), there were 21 participants who were in one group but not in the other.

Again, following the theoretical assumption that contact, and now in particular physical contact, may eventually lead to situations perceived as risky for the well-being of children, one would predict that PWP with fewer legitimizing beliefs would try to avoid touching children in such situations. Following the theoretical assumption that contact, and again in particular physical contact, allows PWP to learn signals and needs of children and reduces false beliefs, one would expect that PWP with physical contact on average show more mainstream beliefs. To investigate whether the above results also hold for physical contact, we repeated the analyses above based on a physical contact group.

Legitimizing Beliefs Toward Sex with Children

Legitimizing beliefs (Fig. 4) in the physical contact group was 0.42 standard deviations lower than in the group without physical contact ($t[99] = 2.12, p = .018, CI_{90\%} [0.04, 0.82]$) ($t[99] = 2.45, p = .0079, CI_{90\%} [0.10, 0.88]$). In the SEM in Fig. 3, the estimated effect of the physical contact group was 0.41 scale steps with standard error 0.21, which amounts to an a posteriori

Table 2 Items of the legitimizing beliefs scale sorted by group difference, together with average and median over both groups and group difference between frequent and no social contact on the 4-point Likert scale

Item	Average	Median	Group difference
Sometimes child molesters suffer the most, lose the most, or are hurt the most as a result of a sexual assault on a child more than a child suffers, loses, or is hurt	2.31	2	-0.55
Some people are not “true” child molesters—they are just out of control and made a mistake	2.07	2	-0.48
I think the main thing wrong with sexual activity with children is that it is against the law	1.93	2	-0.43
Some kids like sex with adults because it makes them feel wanted and loved	2.83	3	-0.33
If a person does not use force to have sexual activity with a child, it will not harm the child as much	2.61	3	-0.32
There is no real manipulation or threat used in a lot of sexual assaults on children	2.72	3	-0.32
Children who come into the bathroom when an adult is getting undressed or going to the bathroom are probably just trying to see the adult’s genitals	1.72	2	-0.32
Since some victims tell the offender that it feels good when the offender touches them, the child probably enjoys it and it probably won’t affect the child much	2.70	3	-0.27
Society makes a much bigger deal out of sexual activity with children than it really is	3.14	3	-0.23
Children can give adults more acceptance and love than other adults	2.29	2	-0.22
Sexual activity with children can help the child learn about sex	2.72	3	-0.2
Sometimes victims initiate sexual activity	2.65	3	-0.19
If a child looks at an adult’s genitals, the child is probably interested in sex	1.64	2	-0.17
I think child molesters often get longer sentences than they really should	2.80	3	-0.15
Kids who get molested by more than one person probably are doing something to attract adults to them	1.74	2	-0.13
I believe that sex with children can make the child feel closer to adults	2.26	2	-0.11
Sometimes children don’t say no to sexual activity because they are curious about sex or enjoy it	3.08	3	-0.11
When kids don’t tell that they were involved in sexual activity with an adult it is probably because they liked it or weren’t bothered by it	2.36	2	-0.11
Sometimes, touching a child sexually is a way to show love and affection	2.51	3	-0.08
Some children are willing and eager to have sexual activity with adults	2.66	3	-0.02
Many children who are sexually assaulted do not experience any major problems because of the assaults	2.14	2	0.01
Having sexual thoughts and fantasies about a child isn’t all that bad because at least it is not really hurting the child	3.65	4	0.12

probability for H1 of $P(\mu_1 - \mu_2 > 0) = 2.43\%$ assuming an uninformative prior (Bayes coefficient, i.e., a posteriori probability ratio under an uninformative prior, 0.025).

Self-Reported Risk of Offenses Against Children

As in the social contact group, there was no significant relation between the physical contact group and self-reported perceived risk of committing offenses against children (MD = -0.36 steps, $p = n.s.$, CI_{90%} [-1.92, 1.20]). However, the physical contact group had a significant shift in the kind of offenses participants see themselves at risk of, demonstrated by significant different level of the difference score (MD = 1.04 steps, $p = .010$, CI_{90%} [0.15, 1.92]). This indicates that PWP with physical contact with children who perceive themselves at risk of committing an offense related to pedophilia tend more toward direct offenses (i.e., sexual abuse) rather than toward indirect offenses (i.e., pornography use). So, even though PWP with physical contact with children were in general not more likely to conceive of

breaking the law in our sample, those who reported a self-perceived risk of breaking the law were significantly more likely to perceive a risk of physical offenses rather than offenses that include no physical contact (i.e., child pornography).

Single Bumby Scale Items

The associations between physical touches and some of the single items of the Bumby scale were also stronger than the associations with social contact, as shown in Table 2. All 20 items consistently showed lower rates of endorsement in the physical touching group. Again more pronounced than in the social contact group, items which were generally more rejected also showed higher group differences; the correlation between average agreement and the physical contact group effect was $r = .55$ ($p < .001$, CI_{90%} = [0.28, 0.81]), suggesting that the physical group tends even stronger toward socially accepted beliefs. The last item in Table 2 was also the last when sorting by effect of physical contact, in this case with a negative, but close to zero effect. Among

Table 3 Potential strategies to reduce risk of abuse sorted by group difference, together with average and median over both groups and group difference between frequent and no social contact with children on a 7-point Likert scale

Item	Average	Median	Group difference
Sexual fantasies without masturbation	2.72	2	-1.12
Consuming non-pornographic images of children (e.g., in magazines or TV)	3.67	4	-0.68
Conversations with other pedophiles	3.76	4	-0.67
Outing as pedophile toward peers and parents of children	2.22	1	-0.62
Consuming child pornography	4.16	5	-0.59
Staying away from every sexual activity, including masturbation	1.37	1	-0.52
Sexual contact with adults	2.26	1	-0.42
Inform others (e.g., parents or friends) when spending time with children	2.96	2	-0.36
Sexual fantasies with masturbation	4.97	6	-0.34
Conversations with experts (e.g., doctors or therapists)	3.48	3	-0.29
Being emotionally close to children (e.g., playing together)	4.82	6	-0.01
Make sure that another adult is present when interacting with children	3.64	3	0.11
Respect warning signals to realize risk situations early (e.g., avoid beautiful children)	3.88	4	0.79

the six items taken out during the PCA, five also showed less endorsement in the physical contact group. The sixth item that slightly tended toward higher endorsement refers to actual physical contact (“To caress a child tenderly will harm less than sexual intercourse”; MD = 0.077 steps, $p = n.s.$).

Other Items

The associations of physical contact with the items reported above are similar: PWP with physical touches were less afraid of doing or saying something wrong (MD = 0.35 steps, $\chi^2[1] = 3.91, p = .048$). They also descriptively showed less loneliness on the item indicating isolation (“I feel isolated”, MD = -0.59 steps, $\chi^2[1] = 3.74, p = .053$), although they did not report more loneliness regarding people they can confide in. The positive effect regarding the item “I wish I could undo what happened” was more pronounced (MD = 0.99 steps, $\chi^2[1] = 16.6, p = 4.6 \times 10^{-5}$) than in the social contact group. Again, if interpreting this item as an indicator for regret over a previous substantially harmful event, it is important to note that PWP with physical contact with children reported substantially less regrets. The physical contact group also report less previous convictions; however, the difference was marginal and not significant (MD = -0.05 steps, $\chi^2[1] = 0.408, p = n.s.$).

In addition to these associations, the physical contact group showed a number of other positive effects that are either not found for the frequent contact group, or not large enough to be statistically significant. These were a significant reduction in social fears (MD = -0.38 SD, $t[99] = 1.90, p = .030$), an increase in self-esteem (MD = 0.41 SD, $t[99] = 2.02, p = .023$), and a decrease in overall loneliness (MD = -0.37 SD, $t[99] = 1.83, p = .035$). Arguably, all three scales are positive predictors of

responsible behavior toward children and at the same time indicate a more prosperous life for the PWP.

Alternative Explanations

The primary objective of this empirical analysis is to weigh the theoretical assumption that interactions between PWP and children eventually lead to harmful situations, which on the long run would drive more conscious PWP to reduce their contact with children, against the opposing effect that interactions between PWP and children act as a corrective for the PWP and help him to become more conscientious. However, considering that the current analysis is correlational, a final causal conclusion cannot be drawn. The Everyday Pedophilia Study offers data that shed light on some potential alternative explanations.

Do Legitimizing Beliefs about Sex Cause Higher Probability for No Contact?

A possible scenario is that PWP with more legitimizing beliefs eventually act in an illegal way and are convicted for offenses related to their sexuality. This experience acts as deterrence, causing the PWP, despite his discrepant beliefs, to refrain from further contact with children, or at least from physical interaction with children. This would also manifest as more legitimizing beliefs in the non-contact group and could be an alternative explanation for the effect described above.

This scenario predicts that the effect of contact on legitimizing beliefs is inverted if we control for conviction. However, we did not find such an inversion of the effect. For the frequent social contact group the effect was almost unaltered and still statistically significant even when controlling for conviction ($t[102] =$

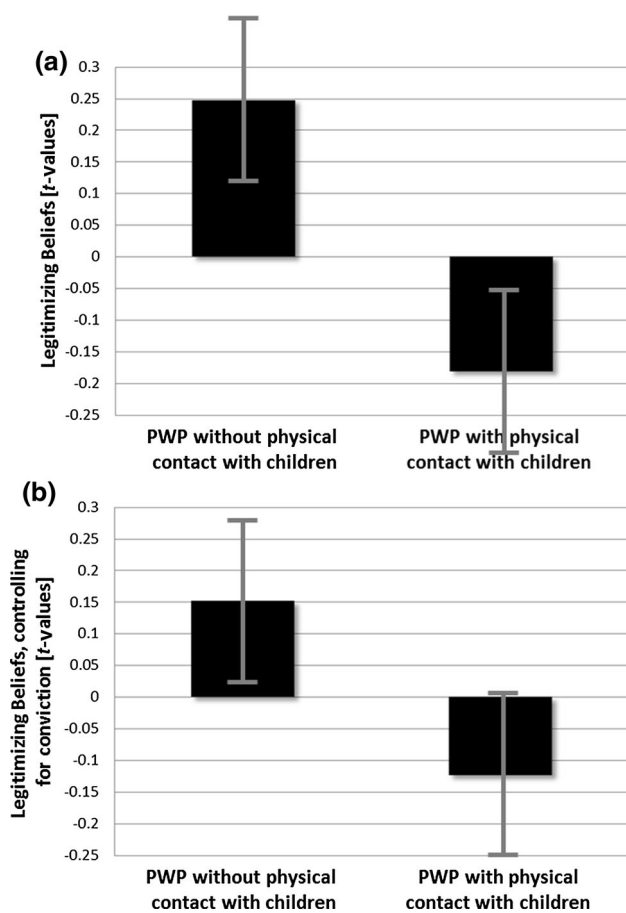


Fig. 4 Legitimizing beliefs toward sex with children for PWP with and without physical contact with children, standardized to t values. Boxes reach from zero to expected value, and error bars indicate standard errors. Note that negative expected values result in boxes pointing downward from zero. **a** Original data, **b** data after controlling for conviction of offenses related to pedophilia

1.76, $p = .040$) ($t[102] = 1.96$, $p = .026$). For the physical contact variable, controlling for conviction reduced the association with legitimizing beliefs, which was no longer statistically significant at $\alpha = 0.05$. Nevertheless, an inversion as predicted by the above scenario was also not observed; see Fig. 4b. In fact, even after controlling for conviction, the effect still tended toward a positive association ($t[99] = 1.32$, $p = .094$) ($t[99] = 1.72$, $p = .044$). Also, PWP with physical contact had significantly lower probability for convictions (18 of 41 convicted in the group without physical contact compared to 10 of 60 convicted in the group with physical contact, $\chi^2[1] = 7.88$, $p = .005$).

A similar argument as above can be made for psychological treatment instead of conviction; potentially, PWP with higher legitimizing beliefs are more likely to see a therapist and are advised to reduce or abandon contact with children. This would again describe a possible causation chain from more legitimizing beliefs to no contact. However, controlling for treatment did not change the effect in either the frequent contact group ($t[102] = 1.90$, $p = .030$) ($t[102] = 2.06$, $p = .021$), or the

physical contact group ($t[99] = 2.16$, $p = .016$) ($t[99] = 2.44$, $p = .0081$).

Is Education a Common Cause?

Another explanation for the effect of less legitimizing beliefs in the group with more contact is that cognitive abilities cause both. A PWP with more cognitive resources may consequently also show fewer legitimizing beliefs, considering that some items in the Bumby scale are statements in an exaggerated form that are fairly easily rejected by educated participants. At the same time, a PWP with more cognitive resources is probably more capable of interacting with children in ways that are perceived as beneficial by persons from the child's environment; this holds true no matter whether this is interpreted as deception or as an actual beneficial behavior of the PWP.

In this scenario, we would expect the association with legitimizing beliefs to vanish when we control for education. However, we still found less legitimizing beliefs in the contact groups even when controlling for education, both in the frequent contact group [$t(102) = 1.70$, $p = .046$] [$t(102) = 1.88$, $p = .031$] and in the physical contact group [$t(99) = 2.05$, $p = .021$] [$t(99) = 2.40$, $p = .0091$].

Is Social Desirability a Common Cause for Measurement Bias?

Since the Everyday Pedophilia Study is based on self-report, the degree to which the answers can be trusted may be limited. Participants with higher social desirability may answer items from the Bumby scale more congruently with socially expected answers even if the answer does not adequately reflect their opinion. While unlikely, participants with higher social desirability may also over-report the number of children they interact with, potentially in order to demonstrate their harmlessness considering that they were never in conflict with the legal system. This would feign an effect of fewer legitimizing beliefs, which would not generalize beyond a questionnaire setting.

To control for this, the Everyday Pedophilia Study includes a social desirability scale (Crowne & Marlow, 1960, adapted and translated by Stöber, 1999). Social desirability was not related to either frequent contact or physical contact. Consequently, the association between having contact with children and legitimizing beliefs was mostly unaltered when controlling for social desirability both for frequent contact (MD = -0.371 SD, $\chi^2[1] = 4.49$, $p = .034$) and for physical contact (MD = -0.424 SD, $\chi^2[1] = 5.50$, $p = .019$).

Are Age or Cohort Effects Alternative Explanations?

Participants in the Everyday Pedophilia Study spanned from 18 to 79 years of age. This highly heterogeneous age population may produce all kinds of age- or cohort-related effects. For

example, older PWP may tend to refrain from more radical beliefs and at the same time have more opportunities to interact with children from the next generation of their own family, e.g., nieces or nephews, or even their own children and grandchildren. Instead, we empirically found that controlling for age did slightly increase rather than decrease the effect of both the frequent contact group ($MD = 0.404$, $\chi^2[1] = 5.09$, $p = .024$) and the physical contact group ($MD = -0.444$, $\chi^2[1] = 5.92$, $p = .015$). However, it needs to be mentioned that statistically controlling for a variable means only controlling for linear effects of that variable; potential nonlinear age effects may nevertheless go unnoticed.

Discussion

We investigated a sample of a non-forensic, non-clinical, self-classified PWP regarding their interaction with children in their everyday life, and to what extent they hold legitimizing beliefs regarding sex with children. Many PWP (61 out of 104 in this sample) had frequent social contact with children; that is, at least weekly contact over a period of at least 3 months during the last year. Also, the majority of PWP (60 out of 104 in this sample) reported that if they interacted with children, the interaction included at least sometimes intensive physical contact, such as horseplay and cuddling. The two groups were strongly overlapping, with 50 out of 104 in both groups.

This study showed that frequent contact with children on average is related to fewer, rather than more, legitimizing beliefs about sex with children, thereby adding to the evidence of our initial hypothesis H1 over H2. The same association was observed for PWP who engage in horseplay or cuddling with children, that is, engaging in close physical contact with children. At the same time, physical contact was related to less social fears, higher self-esteem, and less loneliness in PWP. Both frequent interactions with children and physical contact with children were related to higher self-confidence, and PWP who have contact with children agreed significantly more that warning signals from children should be respected and taken seriously to avoid harmful events. PWP with frequent contact with children reported less desire to undo a past event, which in the context of pedophilia could likely refer to a past event that involves a wrongdoing toward a child. This effect was particularly pronounced for the group that engaged in physical interaction with children.

The items of the Bumby scale that showed the strongest difference in endorsement between PWP who interact with children and those who do not were also those items that are overall most accepted in the sample. The item with the least difference in endorsement refers to the opinion that fantasies about children are less harmful than abuse, an item that likely can be endorsed by many people without pedophilia as well. Not surprisingly, the physical contact group tended to agree more with an item suggesting that tenderly caressing a child may be beneficial for the

child rather than harmful. Considering that a direct positive effect of horseplay and cuddling with adults in general is widely accepted and that an indirect negative effect via the PWP is challenged in the light of the current article, they may have a point.

While we found no correlation between contact and self-perceived risk of committing an offense against children (with zero effect for the frequent social contact group, and descriptively a slight tendency in the opposite direction for the physical contact group), we did find that the physical contact group, if conceiving of committing an offense, also in this realm tended more toward direct, physical offenses.

Note that many criminological theories (e.g., routine activities theory; see Cohen & Felson, 1979) predict that a greater level of contact with children increases the likelihood of offenses since more opportunity is present. The data in this article showed that this line of thought does not directly transfer to legitimizing beliefs in non-criminal PWP, where the current study showed that more contact was related to less legitimizing beliefs.

Limitations

Multiple caveats need to be addressed to avoid over-interpreting the findings of this article. First, a correlational study is not suited to prove a causal influence from contact with children, physical or social, to fewer legitimizing beliefs. Even though we excluded a number of alternative explanations by statistical control procedures, an infinite number of other explanations are theoretically viable. To name just one, empathy for children may cause both lower legitimizing beliefs as well as more contact with children. The results in this article only indicate that the inverse logic, suggesting that reasonable PWP decide to stay away from children, should be questioned (see also Houtepen et al., 2015). A conclusion on potential causal influence can only be drawn from future experimental or prospective longitudinal studies. Although such experiments are very difficult to implement, for the comparison outlined here an experiment seems possible. For example, one could try to experimentally simulate the effect of non-abusive social contact with children by reading materials or film materials with detailed description of such contact and measure legitimizing beliefs in this group and a control group.

Also note that the effect sizes described in this article, although statistically significant, are at most moderate. Most effect sizes we report are not larger than 0.4 standard deviations in the Bumby scale, which corresponds roughly to a proportion of variance explained around .16. It is also important to mention that legitimizing beliefs, although related to child sex offenses (Ward & Keenan, 1999; Whitaker et al., 2008), should not be conceived as being the same as harmful behavior. Nevertheless, harboring less legitimizing beliefs is an important indicator of realistic views regarding children's needs, which in turn increases motivation to protect children from abuse. In addition,

we did find that physical contact is negatively associated with legal conviction with respect to child abuse or pornography. However, other situational factors (e.g., that legal conviction causes PWP to abandon contact with children) may come into play.

Another limitation is caused by the assessment for self-perceived risk to commit an offense by ambiguous wording in the German item, which could be interpreted both as “can you imagine yourself committing ...” and as “do you consider committing ...”. Since pedophilia was only assessed by self-report, we cannot exclude that some participants just pretended to be pedophile. Also, since the attractiveness of the children was not assessed, it cannot be ruled out that the effects are different for very attractive children.

As mentioned above, assessing features of an extremely stigmatized group like PWP (Jahnke et al., 2015a, b) entails a number of problems. An anonymous and confidential Internet survey, like the one used in this study, seems to provide the most accurate data on the topic, but, like any self-report measure, implies its own validity problems. Although it cannot be ruled out that participants answered in a socially desired manner we could shed some light on the everyday interaction of PWP with children.

Since no causal conclusion can be drawn from the results presented in this article, an intervention that aims at initiating social or physical contact should not be argued for on the basis of this article. The best that can be said for such an intervention is that the data in the current article do not contradict the assumption that contact with children causes a reduction in legitimizing beliefs, but “not contradicting” does not yet mean “supporting.” Also, the sample considered here is clearly different from forensic samples which are often characterized by self-control deficits, comorbid mental disorders, and many other risk factors for engaging in child abuse. However, for clinicians who work with pedophilic men who have never engaged in criminal acts against children and who seek help, such as in prevention projects such as the Dunkelfeld project (Beier et al., 2015), the data of our study may facilitate a rational discussion of the question whether contact with children is recommendable or not in a given patient and a given risk situation.

Conclusions

To conclude, we found that more than half of the PWP engage in frequent social and non-offensive physical contacts with children. This can have two opposite effects, both active at the same time in every individual: Repeated interaction between adult and children increases the frequency of a risk occurrence, while reducing the risk per occurrence by supporting the formation of realistic beliefs. While the first effect predicts a negative association between social contact and realistic beliefs, the second predicts a positive association. The data presented here

showed that despite the first effect, frequent interaction and physical contact with children are associated with less legitimizing beliefs, even after controlling for several covariates. We conclude that the positive association between contact and more realistic beliefs, and in turn responsible behavior, is stronger than has been assumed previously.

This finding puts unconditional calls for a limited contact policy into perspective, in particular for PWP who have never committed an offense. It shows the importance of future research in this field to weigh neutral or positive outcomes against potential dangers. The limitations mentioned above call for replication studies. Also, as the current study focuses primarily on associations with legitimizing beliefs, it is only a first step into exploring the everyday living of PWP and their interactions with children; future research has to be directed at quantifying other possible effects, both positive and negative, of non-offensive contact between PWP and children.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval The study has been approved by the Internal Review Board of the University of Bonn. Informed consent was obtained from all individual participants included in the study.

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