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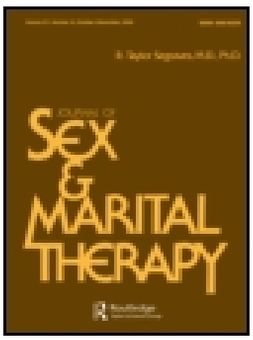

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Keep Faith in Yourself! A Pilot Study on the Relevance of Specific Self-Efficacy for Modifying Sexual Interest in Children Among Men With a Risk to Sexually Abuse Children

Safiye Tozdan[a], Anna Kalt[a], Livia B. Keller[b], and Peer Briken[a]

[a]Institute for Sex Research and Forensic Psychiatry, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [b]Forensic Outpatient Center Baden, BIOS, e.V., Karlsruhe, Germany

ABSTRACT

Among 26 pedophilic/hebephilic men, we investigated (1) the relationship between "specific self-efficacy for modifying a sexual interest in children" (SSIC) and actual sexual interest in children and (2) whether changes in SSIC are associated with changes in sexual interest in children. Results showed that the more clients believe they are able to influence their sexual interest in children, the less strong they perceive their sexual interest in children to be. Furthermore, an increase in SSIC is associated with a decrease in sexual interest in children. We suggest avoiding generalized statements about the immutability of sexual interest in children.

Introduction

Sexual interest in children

In the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013), pedophilia is described as recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activity with a prepubescent child or children (typically under the age of 13). The *DSM-5* draws distinction between the exclusive, nonexclusive, and the incest type. Clinicians and researchers are currently debating the changeability of pedophilia, that is, sexual interest in children. Many professionals—as well as the description in the *DSM-5*—assume pedophilia to be a lifelong condition that is unlikely to change (e.g., Cantor, 2012; Seto, 2012). However, the *DSM-5* does not differentiate the description of a lifelong condition between the exclusive, nonexclusive, and incest types. Indeed, the *DSM-5* states that "Pedophilia […] necessarily includes other elements that may change over time with or without treatment: subjective distress (e.g., guilt, shame, intense sexual frustration, or feelings of isolation) or psychosocial impairment, or the propensity to act out sexually with children, or both" (p. 699). Therefore, the course of pedophilic disorder may fluctuate, increase, or decrease with age. However, these elements do not include the key characteristic of pedophilia, which is being sexually attracted to children. In contrast to this more stagnant view, some researchers regard sexual interest in children as more or less flexible, with possible changes throughout life (Tozdan & Briken, 2015a) or through therapeutic treatment (e.g., Bradford, Fedoroff, & Gulati, 2013; Fedoroff et al., 2014; Müller et al., 2014). And there is even evidence indicating that pedophilic preferences may actually change throughout treatment (e.g., Marshall, 2008).

CONTACT Safiye Tozdan s.tozdan@uke.de Institute for Sex Research and Forensic Psychiatry, University Medical Center Hamburg-Eppendorf, Martinistrasse 52, D-20246 Hamburg, Germany.

Despite these competing views, there is consensus among researchers that our basis of scientific knowledge on individuals having a sexual interest in children is still limited (e.g., Pumberger & Eher, 2013; Seto, 2012). Furthermore, most of what is known about pedophilic individuals has emerged from research within the past few decades on correctional samples of men who committed sexual offenses against children. As already known, most of these offenders would not be classified as having a pedophilic disorder according to clinical criteria (e.g., Abel et al., 1987). In turn, there are individuals meeting the clinical criteria for pedophilic disorder with no history of sexual offenses against children. Compared to the former, much less is known about the latter individuals (Seto, 2009).

The competing positions described above already manifested themselves in clinical practice. For instance, the German network "Kein Täter Werden" (don't-offend.org; Beier et al., 2015) offers a treatment program to individuals who want to control their sexual interest in children so that they do not sexually offend against children or use child pornography. Clinicians of the founding network site in Berlin consider sexual interest in children unchangeable and recommend that their clients integrate it into their self-concept as a lifelong condition (Institute for Sexology and Sexual Medicine of the Charité–University Berlin, 2013). Clinicians of other treatment facilities however, suggest sexual interest as being more or less flexible and changeable (Lipp, 2014).

The extent of this increasingly important debate highlights the need for both theoretical and empirical research in this specific field. A recently published work (Tozdan & Briken, 2015a) offers a theoretical framework that links sexual interest in children with the core principle of Bandura's social cognitive theory—self-efficacy (Bandura, 1977; Bandura, 1997; Bandura, 1986; Bandura, 2001).

Self-efficacy

In 1977, Bandura published a learning theory based on the idea that people learn by observing others, postulated as social cognitive theory. The core aspect of social cognitive theory (Bandura, 1977) is the concept of self-efficacy that addresses people's faith in their own ability to manage their behavior and to control events that affect their lives (Bandura, 1997; Bandura, 2001). As "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193), self-efficacy describes the core belief that an individual has the capability to show a certain behavior leading to certain effects. Since Bandura postulated the concept of self-efficacy, it has been further developed by several researchers (Fuchs & Schwarzer, 1994; Maddux & Gosselin, 2003; O'Leary, 1992; Schindler & Körkel, 1994; Schwarzer, 2002; Schwarzer & Jerusalem, 1989; Shelton, 1990; Sherer & Maddux, 1982; Stuart, Borland, & McMurray, 1994). Luszczynska, Scholz, and Schwarzer (2005) defined two types of self-efficacies: general and specific self-efficacy, with the former being the belief in one's competence to cope with a broad range of stressful or challenging demands, and the latter being constrained to a particular task at hand. Several studies have indicated that a higher general self-efficacy is related to better mental (e.g., Saltzman & Holahan, 2002) and physical health (e.g., Fuchs & Schwarzer, 1994). Specific self-efficacy beliefs were shown to be a strong predictor for motivation to change (e.g., Schwarzer, 2001) and to affect corresponding specific experiences and behavior (e.g., Ollendick, 1995). Therapeutic interventions focusing on specific self-efficacy were shown to have a positive impact on treatment progress and success among diverse psychological disorders (e.g., Peterman & Noeker, 1991). General self-efficacy is considered relatively stable throughout the life span, although there are several studies demonstrating the changeability of both general and diverse specific self-efficacy beliefs. The self-efficacy concept was applied to various research fields (including nutritional behavior, physical activity, smoking behavior, alcohol or drug consumption, and criminal behavior). Results of these studies revealed that experimental manipulations can change specific self-efficacy beliefs (e.g., Goldberg et al., 2000; Marquez, Jerome, McAuley, Snook, & Canaklisova, 2002; Van't Riet, Ruiter, Smerecnik, & de Vries, 2010; Walsh & Russell, 2010). Therefore, mental well-being can be affected (e.g., Reif, de Vries, Petermann, & Görres, 2013) and subsequent behavior can be influenced (e.g., Dijkstra & de Vries, 2001; Koring et al., 2012; Luszczynska & Tryburcy, 2008).

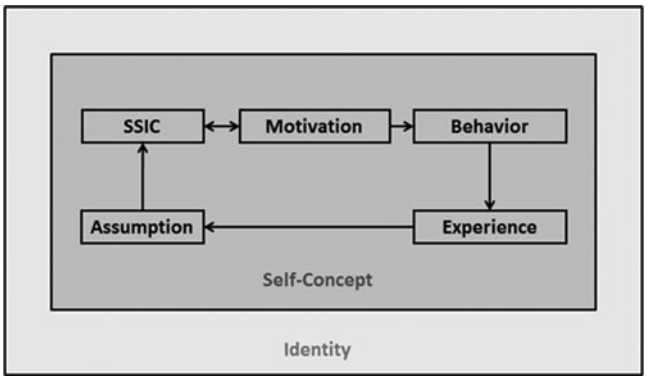

Figure 1. Schematic presentation of the theoretical framework published by Tozdan and Briken (2015a). Assumption = Internalized assumption about changeability of the sexual interest in children generated by own experiences, vicarious experiences, or verbal information that the SSIC of individuals with a sexual interest in children, e.g., the statement "Pedophilia is more or less flexible" made by experts or represented by the media; SSIC = Individuals' specific self-efficacy for modifying their sexual interest in children; Motivation = Individuals' motivation to change their sexual interest in children; Behavior = Individuals' behavioral patterns that are required to change their sexual interest in children; Experience = Individuals' subjective perception that their own sexual interest in children changes, e.g., decreases; One-sided arrow = Theoretical assumption that the first variable has causal impact on the second variable; Two-sided = Theoretical assumption that the two variables are interacting and affect each other.

Sexual interest in children and self-efficacy

The theoretical framework mentioned earlier (Tozdan & Briken, 2015a) aims to transfer the insights generated by research on self-efficacy to individuals with a self-reported sexual interest in children. This framework suggests a more or less flexible sexual interest in children and the existence of a specific self-efficacy for modifying sexual interest in children (SSIC) that "is defined as the individual's conviction of being able to influence and change their own sexual interest in children" (Tozdan & Briken, 2015a, p. 108). Conveying a sexual interest in children as generally immutable may correspondingly influence the expectations of affected individuals and consequently may decrease this SSIC (see Figure 1; for details, see Tozdan & Briken, 2015a). This might lower the motivation for change as well as the probability of certain behavioral patterns required for changing the sexual interest in children. In contrast, a treatment strategy suggesting a more or less flexible sexual interest in children might increase this SSIC. This might enhance the motivation for change as well as the probability of behavioral patterns required for changing the sexual interest in children.

The framework further considers sexual interest in children as a part of one's self-image. It therefore affects significantly more than motivational and behavioral aspects. Attributing, labeling, and maybe even stigmatizing the own self as an individual with an immutable versus a more or less flexible sexual interest in children affects the individual's self-concept and might even become a part of the individual's identity (for details, see Tozdan & Briken, 2015a). Since self-efficacy is seen as key to behavioral motivation (Bandura, 1977), it can lead to certain experiences that can subsequently change certain aspects of self-concept and consequently affect identity. In addition, these experiences may be a new source for SSIC: When individuals notice that their own sexual interest in children decreases, this may force the assumption that it can be influenced by their own competencies, resulting in a higher SSIC.

Recently published studies empirically examined this framework. In sum, the results indicated the following:

1. There is a measurable SSIC (Tozdan, Jakob, Schuhmann, Budde, & Briken, 2015).
2. SSIC varies across different subsamples of individuals with a sexual interest in children (Tozdan & Briken, 2015b; Tozdan et al., 2015).
3. SSIC is associated with the motivation for changing one's own sexual interest in children. This means that individuals who believe they can change their sexual interest in children are more likely to be motivated to actually do so (Tozdan & Briken, 2015b).

4. Under specific conditions, SSIC appears to be malleable by simple verbal information about the immutability of a sexual interest in children (Tozdan et al., 2016).

The present study

First, to provide further empirical results forcing the examination of the theoretical framework, we aimed to investigate the general relationship between SSIC and the actual sexual interest in children among men with a sexual interest in children who are in voluntary treatment so as to not offend against children or use child pornography. We expected that a higher SSIC is associated with a lower sexual interest in children and vice versa. Second, we explored whether changes in SSIC are associated with changes in sexual interest in children, expecting an increase in SSIC to be related to a decrease in sexual interest in children and vice versa.

Method

Procedure and Sample

The present data were gathered via a research project at an outpatient treatment center for men with a sexual interest in children. The project addresses individuals with a self-identified sexual interest in children who have no record of offenses against children and entered treatment in order to cope with their sexual interest in children. The primary goal of the project is to prevent potential sexual-offending behavior. The inclusion criterion for the present study was a self-identified sexual interest in children when entering the treatment program. Twenty-six male clients who consecutively entered the program, fulfilled the inclusion criteria, and gave their written informed consent were included in the present study (two clients who fulfilled the inclusion criteria did not give their consent). The clients who entered the treatment program between 2012 and 2015 were each assigned to one of six therapists. The sample characteristics for the total sample are shown in Table 1. Four clients reported an exclusive sexual interest in adults at data collection but met the inclusion criterion of having a sexual interest in children at the beginning of the treatment program, and thus were included. Having a sexual interest in children is mandatory for entering the treatment program. When assessing the "exclusiveness of sexual interest in children" for the first time, clients were not just entering the treatment program but were already in treatment for a certain period of time. Therefore, it was possible that these four clients reported no sexual interest in children at the first measurement, since the first measurement did not correspond with the time when clients entered the treatment program.

For evaluation of the treatment process, the program includes a bimonthly assessment of clients' characteristics with self-report questionnaires. To investigate changes during the treatment process, two times of measurement (T_1 and T_2) for each client were selected for the present study. The first measurement (T_1) for each client was the first measurement at all, that is, the first time the client filled out the bimonthly self-report questionnaires including the main variables of the present study. Due to the fact that the theoretical construct of one of the main variables, namely SSIC (Tozdan & Briken, 2015a) and its questionnaire (Tozdan et al., 2015) has only been validated recently and is the subject of further research (Tozdan & Briken, 2015b; Tozdan et al., 2016), it was impossible to assess SSIC in all clients at the beginning of the treatment program (baseline time of measurement, i.e., T_0). Thus, at first time of measurement, clients were already in treatment for a certain period of time, which differed from client to client. For the second time of measurement, we considered a time span between first and second measurement of six months as most appropriate to expect changes during treatment. Treatment processes, however, are individual, and data collection might differ accordingly. A second measurement that was exactly six months after the first measurement was therefore not available for each client. Whenever possible, we chose the measurement that was six months after the first measurement. When this was not possible, we chose the measurement that was four months after the first measurement. And when this was not possible, we chose the measurement that was two months after the first measurement.

Table 1. Sample characteristics for the total sample ($N = 26$).

	Total ($N = 26$, 100%)		
Variables	M[a]	SD[b]	Range
Age (in years)[c]	39.3	11.7	22–62
Education Level	N[d]		%[e]
Lower secondary education	2		7.7
Secondary education	8		30.8
Vocational baccalaureate diploma	1		3.8
General matriculation standard	15		57.7
Professional Education	N		%
No professional training	3		11.5
In training	1		3.8
Completed apprenticeship	12		46.2
University degree	10		38.5
Relationship Status	N		%
In a relationship	14		53.8
Currently single	12		46.2
Exclusiveness[f] (Interest is …)	N		%
…exclusively in children	2		7.7
…mainly in children	6		23.1
…equally in children and adults	8		30.8
…mainly in adults	6		23.1
…exclusively in adults	4		15.3
Age Group Attracted To[g]	N		%
Prepubertal (up to 10 years)	1		3.8
Pubertal (11–13 years)	4		15.3
Both (up to 13 years)	21		80.9

Note. [a]Mean value. [b]Standard deviation. [c]Age at first time of measurement. [d]Absolute share in the sample. [e]Percentage share in the sample. [f]Self-reported exclusiveness of the sexual interest in children at first time of measurement. [g]Age group to which the sexual interest refers when entering the treatment program.

The average time between first (T_1) and second measurement (T_2) was 4.2 months (SD = 1.1, range = 2–7). At T_1, clients had an average treatment duration of 16.1 months (SD = 10.3, range = 2–36).

It should be noted further that the aim of the present study is not to evaluate the treatment program but to investigate changes within a certain period of time in self-efficacy beliefs of individuals with a sexual interest in children and in their actual sexual interest in children. Therefore, no further details of the treatment program are provided.

The study was approved by the Ethics Committee of the Hamburg Chamber of Psychotherapists.

Main variables

The data of two self-report questionnaires from the bimonthly assessment were included in the present study as main variables.

Self-efficacy for modifying sexual interest in children (SSIC)

SSIC was assessed using the Self-Efficacy for Modifying the Sexual Interest in Children Scale (SSIC Scale; Tozdan et al., 2015; see Appendix A). Six items on the conviction of being able to change one's own sexual interest in children (e.g., "It mainly depends on me how my sexual interest in children develops") were

answered on a scale ranging from 1 (*not agree at all*) to 5 (*totally agree*). The maximum score is 30, with higher SSIC scores indicating higher self-efficacy.

Sexual interest in children

The Sexual Outlet Inventory-Revised (SOI-R; Briken, 2010; see Appendix B) is a modified version of the Sexual Outlet Inventory (Kafka, 1991). This self-report questionnaire assesses the weekly number of orgasms, the desire for sexual activities, and time spent on sexual fantasies, urges, and activities involving children, as well as the desire for sexual activities and time spent on sexual fantasies, urges, and activities involving others within the last four weeks. The desire for sexual activities is assessed with a visual analog scale from "Desire is absent" (0) to "I have to act to satisfy the desire" (100). The desire for sexual activities involving children (SOI-R 2a value) is used as a measure for the actual sexual interest in children, with higher values indicating a stronger sexual interest in children.

Control variable

Therapist's attitude toward the changeability of a sexual interest in children

As past research has shown, individuals with sexual interest in children are influenced by experts' opinions (Tozdan et al., 2016). When experts publicly claim that sexual interest in children is immutable, individuals with sexual interest in children do not believe that they can change their sexual interest in children. In contrast, when experts state that sexual interest in children is mutable, individuals with sexual interest in children believe that they *can* change their sexual interest in children (Tozdan et al., 2016). We therefore assessed the general attitude of the clients' therapists toward the immutability of sexual interest in children. The six therapists rated their conviction about individuals' ability to influence and change their sexual interest in children on a six-item-questionnaire. The scale (e.g., "I believe they [individuals with a sexual interest in children] can influence their sexual attraction to children by themselves.") ranges from 1 (*not agree at all*) to 5 (*totally agree*). The maximum score is 30, with higher scores indicating a stronger conviction that individuals with a sexual interest in children are able to influence and change this attraction due to their own ability.

Statistical analyses

We analyzed whether the sample characteristics or the control variable are related to our main variables at both times of measurement. We chose bivariate Pearson product-moment correlation coefficients (Carroll, 1961) for normally distributed variables and Spearman's rank correlation coefficients (Upton & Cook, 2008) for not normally distributed variables. Normal distribution of variables was tested using the Kolmogorov-Smirnov test, which is suitable for small sample sizes (Steinskog, Tjøstheim, & Kvamstø, 2007).

To investigate the relationship between the SSIC score and the SOI-R 2a value at both times of measurements, we chose the bivariate Pearson product-moment correlation coefficient (Carroll, 1961) in case of no cofounding variables and partial correlation coefficients to control for any cofounding variables. According to Cohen (1988), correlations between 1.0 and 0.5 were regarded as high, correlations between 0.49 and 0.3 as moderate, and correlations up to 0.29 as low. Since both correlation analyses require the normal distribution of variables, we chose the Kolmogorov-Smirnov test to ensure that our main variables are normally distributed (Steinskog, Tjøstheim, & Kvamstø, 2007).

To explore the relationship between changes in both the SSIC score and the SOI-R 2a value from T_1 to T_2, we divided the sample into four groups, depending on clearly positive events and negative or neutral events. An increase (↑) of the SSIC score was rated as a clearly positive event, whereas decrease or consistent level (↓) of the SSIC score was rated as a negative or neutral event. A decrease (↓) of the SOI-R 2a value was rated as a clearly positive event, whereas an increase or consistent level (↑) of the SOI-R 2a value was rated as a negative or neutral event. To measure the association between these two binary variables, we used the phi coefficient of correlation (Cramer, 1946). Correlations between 1.0 and 0.5 were regarded as high, correlations between 0.5 and 0.3 as moderate, and correlations up to

Table 2. Descriptive statistics and results of the two-tailed tested bivariate Pearson product-moment correlation analysis between the SSIC score and the SOI-R 2a value at T_1 as well as partial correlation analysis between the SSIC score and the SOI-R 2a value at T_2 with age at data collection and therapists' attitude toward the changeability of a sexual interest in children as control variables for the total sample ($N = 26$).

	SSIC[a]			SOI-R 2a[b]				
	M[c]	*SD*[d]	Range	*M*	*SD*	Range	*r*[e]	*p*[f]
T_1[g]	21.1	4.9	11–30	27.7	28.5	0–88	−.531**	.005
T_2[h]	20.3	5.9	6–30	36.9	31.4	0–87	−.410*	.046

Note. [a]Self-efficacy for modifying sexual interest in children (SSIC) measured with the SSIC Scale. [b]Actual sexual interest in children measured with the SOI-R, item 2a. [c]Mean value. [d]Standard deviation. [e]Correlation coefficient. [f] Significance level. [g]First time of measurement. [h]Second time of measurement.
*$p < .05$, **$p < .01$.

0.3 as low (Cohen, 1988). To additionally test the statistical significance of frequency differences within the 2 × 2 contingency table, we chose the Fisher's exact test as it is appropriate in small sample sizes (Bortz, Lienert, & Boehnke, 2000; Mehta & Patel, 1986). All statistical analyses were conducted using SPSS v. 15.0.1 (IBM SPSS Statistics, IBM Corporation, Armonk, NY, USA).

Results

Both the SSIC score and the SOI-R 2a value at both T_1 and T_2 were approximately normally distributed, as assessed by the Kolmogorov-Smirnov-Test, $p > .05$. Table 2 shows the descriptive statistics for the main variables at T_1 and T_2 for the total sample and the results of the correlation analyses. We found an association between the variable "age at data collection" and the SSIC score at T_2 ($r = .441$, $p < .05$) as well as between the control variable "therapist's attitude toward the changeability of a sexual interest in children" ($M = 18.9$, $SD = 1.9$, range = 17–24) and the SSIC score at T_2 ($r = -.513$, $p < .01$). Therefore, we statistically controlled for these two variables when analyzing the relation between the SSIC score and SOI-R 2a at T_2. The bivariate Pearson product-moment correlation coefficient between the SSIC score and SOI-R 2a value at T_2 was $r = -.351$ ($p = .078$). The results displayed a negative correlation between the SSIC score and the SOI-R 2a value at both T_1 and T_2. This means that the higher the SSIC score, the lower the sexual interest in children for each time of measurement and vice versa.

Table 3 demonstrates the descriptive statistic for the main variables within the four groups: increase (↑) versus decrease or consistent level (↓) of the SSIC score and increase or consistent level (↑) versus decrease (↓) of the SOI-R 2a value.

Figure 2 shows the four groups of the 2 × 2 contingency table as a bar graph, as well as the calculated phi coefficient correlation and the Fisher's exact test. Both the phi coefficient correlation and the Fisher's exact test revealed significant results indicating an association between changes in the SSIC score and changes in the SOI-R 2a value in the expected direction: An increase in the SSIC score is associated with

Table 3. Descriptive statistics for the four groups: increase (↑) vs. decrease or consistent level (↓) of the SSIC score and increase or consistent level (↑) vs. decrease (↓) of the SOI-R 2a value.

	T_1[a]			T_2[b]		
	M[c]	*SD*[d]	Range	*M*	*SD*	Range
SSIC ↑[e] ($n = 12$)	21.5	4.8	11–30	23.3	5.3	12–30
SSIC ↓[f] ($n = 14$)	20.7	5.2	12–29	17.7	5.3	6–24
SOI-R 2a ↑[g] ($n = 14$)	23.1	25.4	0–76	46.9	30.3	2–82
SOI-R 2a ↓[h] ($n = 12$)	33.1	32.0	0–88	25.2	29.7	0–87

Note. [a]First time of measurement. [b]Second time of measurement. [c]Mean value. [d]Standard deviation. [e]Increase of the SSIC score from T_1 to T_2. [f]Decrease or consistent level of the SSIC score from T_1 to T_2. [g]Increase or consistent level of the SOI-R 2a value from T_1 to T_2. [h]Decrease of the SOI-R 2a value from T_1 to T_2.

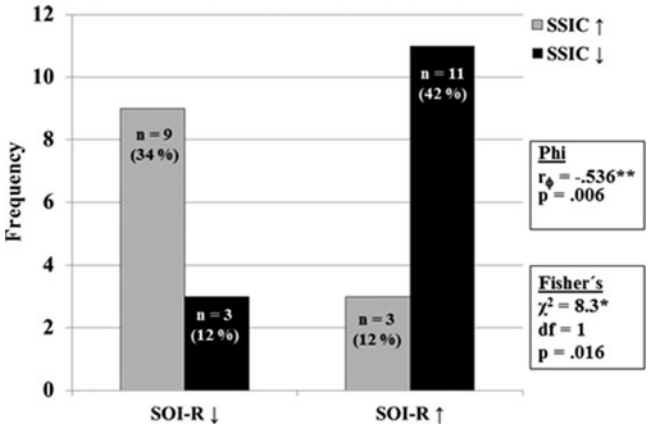

Figure 2. Presentation of the 2 × 2 contingency table as a bar graph. SOI-R 2a↓ = Decrease or consistent level of the SOI-R 2a value from first (T_1) to second (T_2) time of measurement; SOI-R 2a↑ = Increase of the SOI-R 2a value from T_1 to T_2; SSIC↑ = Increase or consistent level of the SSIC score from T_1 to T_2; SSIC↓ = Decrease of the SSIC score from T_1 to T_2; Phi = Results of the phi coefficient correlation analysis; Fisher's = Results of the two-tailed Fisher's exact test, $^*p < .05$; $^{**}p < .01$.

a decrease in the SOI-R 2a value, whereas a decrease or no change in the SSIC score is associated with an increase or no change in the SOI-R 2a value.

Discussion

In this pilot study, we studied 26 men who entered a treatment program to control their sexual interest in children in order to not sexually offend or use child pornography. We analyzed data from two times of measurements (T_1 and T_2) within an ongoing bimonthly assessment of clients' characteristics. We examined the relationship between their actual sexual interest in children and their self-efficacy beliefs of being able to influence their sexual interest in children (SSIC). We further assessed whether changes of SSIC are associated with changes in sexual interest in children over time. The results confirmed our assumptions that sexual interest in children is related to the self-efficacy belief of being able to influence one's own sexual interest in children. Furthermore, a higher self-efficacy as measured by the SSIC score was associated with a lower sexual interest in children (measured by the SOI-R 2a) with moderate to high correlation coefficients. This indicates that the more clients believed they were able to influence their sexual interest in children, the weaker they perceived their sexual interest in children and vice versa. In contrast, the less faith clients had in their own competencies to influence their sexual interest in children, the more pronounced they perceived it and vice versa. Since we solely calculated correlation coefficients, we are not able to make any statement about causal relations, meaning it is not clear whether SSIC in our study had an impact on the sexual interest in children, or vice versa, or whether and how they interact.

Our results further demonstrate that changes of SSIC are related to changes of actual sexual interest over time (here in an average time span of 4.2 months) shown by a high phi correlation coefficient and significant Fisher's exact test. In detail, clients whose SSIC score increased or did not change from T_1 to T_2 were more likely to report a decrease or consistent level of their SOI-R 2a value from T_1 to T_2 and vice versa. In turn, clients whose SSIC score decreased from T_1 to T_2 were more likely to report an increase of the SOI-R 2a value and vice versa. Again, we are not able to make any statement about causal relations.

The generalizability of the present results is primarily limited due to the small sample size and its special characteristics. Our sample consists of 26 men with a motivation not to sexually offend against children. Previous studies already showed that distinguished subgroups of individuals with a sexual interest in children (e.g., in treatment vs. not in treatment or history of sexual offenses against children vs. no history of criminal offenses against children) differ in their SSIC (Tozdan & Briken, 2015b; Tozdan et al.,

2015). A replication of the present study with other subgroups of men with a sexual interest in children might lead to other results.

When interpreting the present results, it should further be taken into account that the first measurement was made on an average of 16.1 months after clients entered the treatment program. After one year of treatment, it can be supposed that substantial changes have already taken place that could not be detected within the present study. Maybe due to this, there are few very small changes in sexual interest in children from first to second time of measurement of only 1%. In fact, on a scale of 0% to 100%, such small changes are clinically not relevant. However, our study was not intended to reveal great changes in sexual interest in children or individuals' self-beliefs of being able to change their sexual interest in children but to examine the relationship between changes in these two variables. That is why the direction of change was more important than the value in the present study.

The average time span of 4.2 months between first and second measurement can be considered short and demonstrates only one small section of a research process that cannot be described as representative for developmental courses regarding treatment-relevant variables examined here. We are aware that the found relation of short-term changes in SSIC and the sexual interest in children in this pilot study does not allow conclusions about their long-term relation (e.g., over several years). Nevertheless, in fact because of the short time span, it seems notable that our data revealed statistically significant results with high effect sizes. This suggests that even more pronounced effects may be expected in long-term studies.

Regarding validity, our results are limited by the exclusive use of self-report measurements. No external measurement, such as therapeutic assessments about the extent of clients' sexual interest in children or their self-efficacy beliefs, and also no objective measures (Schmidt, Gykiere, Vanhoeck, Mann, & Banse, 2014) were included to validate the clients' self-report. Therefore, an effect of social desirability distorting our data cannot be excluded. However, this research project was not conducted by persons providing treatment. Furthermore, one of our main variables, namely the actual sexual interest in children, was represented by only one item (SOI-R 2a) assessing the desire for sexual activities involving children. It can be assumed that the actual sexual interest in children includes more aspects and might not be fully measurable with one item. In addition, it might be that the SOI-R 2a item does not differentiate between "sexual interest in children" and a sense of being able to not act on a sexual interest in children by committing a hands-on assault. Thus, the validity of SOI-R 2a as a measure for sexual interest in children has to be reexamined if used in further studies.

Regarding future research, we deem a replication of the present pilot study necessary, especially within larger samples, including different subgroups of individuals with sexual interest in children, using a basic value of SSIC before starting treatment and with longer intervals between measurement times. Thereby, changes in self-efficacy beliefs and in sexual interest in children might be assessable, making the investigation of their assumed interaction within developmental processes possible. Using more sophisticated statistical analyses—such as crossed-lagged panel analyses (Frees, 2004)—would further allow the examination of causality. Moreover, different (objective, self-rating, and external) measurements for the sexual interest in children should be included, as well as therapeutic assessments for both SSIC and the sexual interest in children. Due to the fact that we found a relation between the SSIC score at T_2 and the "therapist's attitude toward the changeability of a sexual interest in children," a further experimental design might be reasonable in which clients are randomly assigned to therapists who believe in change and to those who do not. In this way, the therapeutic effect can be examined. Finally, there are further variables that were not included in the present study but might be taken into account as control variables, such as sexual orientation or medical treatment.

Conclusions

Our results provide certain empirical evidence for a recently published theoretical framework suggesting that self-beliefs may be relevant for individuals with a sexual interest in children in order to influence and change this attraction (Tozdan & Briken, 2015a). Regarding clinical practice, experts should note the obvious relevance of self-efficacy beliefs in individuals with a sexual interest in children displayed by the strong relationship between SSIC and the reported extent of the sexual interest in children found within

a small sample. Our preliminary results indicate that the perceived extent of one's own sexual interest in children is reflected in one's self-efficacy for modifying it. Or vice versa, one's self-beliefs about being able to change one's sexual interest in children are reflected in the actual sexual interest in children. According to literature on the labeling theory (e.g., Link, Struening, Cullen, Shrout, & Dohrenwend, 1989) or on the effects of a self-stigma in people with mental illness (e.g., Corrigan, Watson, & Barr, 2006; Pasman, 2011), and taking into account previous research on SSIC (Tozdan & Briken, 2015a; Tozdan & Briken, 2015b; Tozdan et al., 2015), we suggest the avoidance of generalized and absolute statements about the immutability of a sexual interest in children. Such statements might have serious consequences for some individuals' self-beliefs about their ability to change the sexual interest in children (Tozdan et al., 2016) and might become a self-fulfilling prophecy according to the present results. Considering a sexual interest in children as more or less flexible (even if it would be time-stable) may increase SSIC of individuals affected and might also become a self-fulfilling prophecy resulting in a decrease in sexual interest in children. This may be important, especially in the group of nonexclusive pedophilic individuals or those who receive the diagnosis in the context of incest or the use of child pornography. Clinicians could also focus on changes in their clients' sexual interest in children to address their self-efficacy. To be aware of the fact that one's own sexual interest in children changes might help clients to strengthen their self-beliefs and to develop commitment and motivation for further treatment.

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References

Abel, G. G., Becker, J. V., Mittelman, M., Cunningham-Rathner, J., Rouleau, J. L., & Murphy, W. D. (1987). Self-reported sex crimes of nonincarcerated paraphiliacs. *Journal of Interpersonal Violence*, *2*, 3–25. doi:10.1177/088626087002001001

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. doi:10.1037/0033-295X.84.2.191

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*, 1–26. doi:10.1146/annurev.psych.52.1.1

Beier, K. M., Grundmann, D., Kuhle, L. F., Scherner, G., Konrad, A., & Amelung, T. (2015). The German Dunkelfeld project: A pilot study to prevent child sexual abuse and the use of child abusive images. *Journal of Sexual Medicine*, *12*(2), 529–542. doi:10.1111/jsm.12785

Beier, K. M., Konrad, A., Amelung, T., Schneider, T. D., Scherner, G., & Neutze, J. (2009). Präventive Behandlung nicht-justizbekannter Männer mit pädophiler Präferenzstörung: Das Präventionsprojekt Dunkelfeld (PPD) [Preventive therapy of men with pedophilic disposition men unknown to the justice system: The prevention project Dunkelfeld]. Retrieved from https://www.kein-taeter-werden.de/documents/000/000/041/projektdarstellung-und-e2009.pdf.

Bortz, J., Lienert, G. A., & Boehnke, K. (2000). *Verteilungsfreie Methoden in der Biostatistik* (*2. Aufl.*) [*Distribution-free methods in biostatistics]* (2nd ed.). Heidelberg, Germany: Springer-Verlag.

Bradford, J. M., Fedoroff, P., & Gulati, S. (2013). Can sexual offenders be treated? *International Journal of Law and Psychiatry*, *36*, 235–240. doi:10.1016/j.ijlp.2013.04.004

Briken, P. (2010). *Sexual Outlet Inventory-Revised*. Unpublished manuscript, Institute for Sex Research and Forensic Psychiatry, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

Cantor, J. M. (2012). Is homosexuality a paraphilia? The evidence for and against. *Archives of Sexual Behavior*, *41*, 237–247. doi:10.1007/s10508-012-9900-3

Carroll, J. B. (1961). The nature of the data, or how to choose a correlation coefficient. *Psychometrika*, *26*, 347–372. doi:10.1007/BF02289768

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Corrigan, P. W., Watson, A. C., & Barr, L. (2006). The self-stigma of mental illness: Implications for self-esteem and self-efficacy. *Journal of Social and Clinical Psychology*, *25*(8), 875–884. doi:10.1521/jscp.2006.25.8.875

Cramer, H. (1946). *Mathematical methods of statistics*. Princeton, NJ: Princeton University Press.

Dijkstra, A., & de Vries, H. (2001). Do self-help interventions in health education lead to cognitive changes, and do cognitive changes lead to behavioural change? *British Journal of Health Psychology*, *6*, 121–134. doi:10.1348/135910701169106

Fedoroff, J. P., Curry, S., Müller, K., Ranger, R., Briken, P., & Bradford, J. (2014). Evidence that arousal to pedophilic stimuli can change: Response to Bailey, Cantor, and Lalumière. *Archives of Sexual Behavior*, *44*(1), 259–263.

Frees, E. W. (2004). *Longitudinal and panel data: Analysis and applications in the social sciences*. Cambridge, UK: Cambridge University Press.

Fuchs, R., & Schwarzer, R. (1994). Selbstwirksamkeit zur sportlichen Aktivität: Reliabilität und Validität eines neuen Meßinstruments [Self-efficacy toward physical exercise: Reliability and validity of a new instrument]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, *15*, 141–154.

Goldberg, L., MacKinnon, D. P., Elliot, D., Moe, E. L., Clarke, G., & Cheong, J. W. (2000). The Adolescents Training and Learning to Avoid Steroids program: Preventing drug use and promoting health behaviors. *Archives of Pediatrics & Adolescent Medicine*, *154*, 332–338. doi:10.1001/archpedi.154.4.332

Institute for Sexology and Sexual Medicine of the Charité—University Berlin. (2013). *BEDIT. The Berlin dissexuality therapy program*. Berlin, Germany: University Berlin.

Kafka, M. P. (1991). Successful antidepressant treatment of nonparaphilic sexual addictions and paraphilias in men. *Journal of Clinical Psychiatry*, *52*, 60–65.

Koring, M., Richert, J., Parschau, L., Ernsting, A., Lippke, S., & Schwarzer, R. (2012). A combined planning and self-efficacy intervention to promote physical activity: A multiple mediation analysis. *Psychology, Health & Medicine*, *17*(4), 488–498. doi:10.1080/13548506.2011.608809

Link, B. G., Struening, E., Cullen, F. T., Shrout, P. E., & Dohrenwend, B. P. (1989). A modified labeling theory perspective to mental disorders: An empirical assessment. *American Sociological Review*, *54*, 400–423. doi:10.2307/2095613

Lipp, B. (2014). Wenn Vorlieben zum Leiden werden. Eine soziologische Analyse pädophilen Begehrens im Diskurs sexualmedizinischer Pimärprävention [If preferences cause suffering. A sociological analysis of pedophilic preferences within the discourse of sexual medicine primary prevention]. *Zeitschrift für Sexualforschung*, *27*, 201–219.

Luszczynska, A., Scholz, U., & Schwarzer, R. (2005). The general self-efficacy scale: Multicultural validation studies. *The Journal of Psychology*, *139*(5), 439–457.

Luszczynska, A., & Tryburcy, M. (2008). Effects of a self-efficacy intervention on exercise: The moderating role of diabetes and cardiovascular diseases. *Applied Psychology: An International Review*, *57*(4), 644–659. doi:10.1111/j.1464-0597.2008.00340.x

Maddux, J. E., & Gosselin, J. T. (2003). Self-efficacy. In M. R. Leary & J. P.Tangney (Eds.), *Handbook of self and identify* (pp. 218–238). New York, NY: Guilford.

Marquez, D. X., Jerome, G. J., McAuley, E., Snook, E. M., & Canaklisova, S. (2002). Self-efficacy manipulation and state anxiety responses to exercise in low active women. *Psychology & Health*, *17*(6), 783–791. doi:10.1080/0887044021000054782

Marshall, W. L. (2008). Are pedophiles treatable? Evidence from North American studies. *Polish Sexology*, *6*, 1–5.

Mehta, C. R., & Patel, N. R. (1986). Algorithm 643. FEXACT: A Fortran subroutine for Fisher's exact test on unordered r#c contingency tables. *ACM Transactions on Mathematical Software*, *12*, 154–161. doi:10.1145/6497.214326

Müller, K., Curry, S., Ranger, R., Briken, P., Bradford, J., & Fedoroff, J. P. (2014). Changes in sexual arousal as measured by penile plethysmography in men with pedophilic sexual interest. *Journal of Sexual Medicine*, *11*, 1221–1229. doi:10.1111/jsm.12488

O'Leary, A. (1992). Self-efficacy and health: Behavioral and stress-physiological mediation. *Cognitive Therapy and Research*, *16*(2), 229–245. doi:10.1007/BF01173490

Ollendick, T. H. (1995). Cognitive behavioral treatment of panic disorder with agoraphobia in adolescents: A multiple baseline design analysis. *Behavior Therapy*, *26*, 517–531. doi:10.1016/S0005-7894(05)80098-X

Pasman, J. (2011). The consequences of labeling mental illnesses on the self-concept: A review of the literature and future directions. *Social Cosmos*, *2*, 122–127.

Petermann, F., & Noeker, M. (1991). Psychologische Voraussetzungen der Patientenschulung bei asthmakranken Kindern und Jugendlichen [Psychological requirements of patient education in children and adolescents suffering from asthma]. *Psychomed*, *3*(3), 185–188.

Pumberger, T., & Eher, R. (2013). Meinungen von Expertinnen und Experten zur Entstehung und Relevanz pädosexueller Neigungen und Verhaltensweisen bei Männern und zu entsprechenden Ansatzpunkten für eine primäre und sekundäre Prävention [Opinions from experts on development and relevance of pedosexual preferences and behavior in men and on corresponding approaches for primary and secondary prevention]. Retrieved from http://www.vffw.org/downloads/IGF_Praevention_Paedophilie_Projekt_201312.pdf.

Reif, K., de Vries, U., Petermann, F., & Görres, S. (2013). A patient education program is effective in reducing cancer-related fatigue: A multi-centre randomised two-group waiting-list controlled intervention trial. *European Journal of Oncology Nursing*, *17*, 204–213. doi:10.1016/j.ejon.2012.07.002

Saltzman, K. M., & Holahan, C. J. (2002). Social support, self-efficacy, and depressive symptoms: An integrative model. *Journal of Social and Clinical Psychology*, *21*, 309–322. doi:10.1521/jscp.21.3.309.22531

Schindler, C., & Körkel, J. (1994). Selbstwirksamkeitserwartungen junger erwachsener Alkoholabhängiger: Ausprägung und Vorhersagbarkeit [Self-efficacy expectations in adolescent alcoholics: Characteristics and predictability]. *Verhaltenstherapie*, *4*, 152–161. doi:10.1159/000258854

Schmidt, A. F., Gykiere, K., Vanhoeck, K., Mann, R. E., & Banse, R. (2014). Direct and indirect measures of sexual maturity preferences differentiate subtypes of child sexual abusers. *Sexual Abuse*, *26*(2), 107–128. doi:10.1177/1079063213480817

Schwarzer, R. (2001). Social-cognitive factors in changing health-related behavior. *Current Directions in Psychological Science*, *10*(2), 47–51.

Schwarzer, R. (2002). Selbstwirksamkeitserwartungen [Self-efficacy expectations]. In R. Schwarzer, M. Jerusalem, & H. Weber (Eds.), *Gesundheitspsychologie von A-Z* [*Health psychology from A to Z*] (pp. 521–524). Göttingen, Germany: Hogrefe.

Schwarzer, R., & Jerusalem, M. (1989). Erfassung leistungsbezogener und allgemeiner Kontroll- und Kompetenzerwartungen [Assessing performance-related and general expectations of control and competences]. In G. Krampen, *Diagnositik von Attributionen und Kontrollüberzeugungen* [*Diagnostics of attributions and locus of control*] (pp.127–133). Goettingen, Germany: Hogrefe.

Seto, M. C. (2009). Pedophilia. *Annual Review of Clinical Psychology*, *5*, 391–407. doi:10.1146/annurev.clinpsy.032408.153618

Seto, M. C. (2012). Is pedophilia a sexual orientation? *Archives of Sexual Behavior*, *41*, 231–236. doi:10.1007/s10508-011-9882-6

Shelton, S. H. (1990). Developing the construct of general self-efficacy. *Psychological Reports*, *66*, 987–994.

Sherer, M., & Maddux, J. E. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, *51*, 663–671. doi:10.2466/pr0.1982.51.2.663

Steinskog, D. J., Tjøstheim, D. B., & Kvamstø, N. G. (2007). A cautionary note on the use of the Kolmogorov-Smirnov test for normality. *Monthly Weather Review*, *135*(3), 1151–1157. doi:10.1175/MWR3326.1

Stuart, K., Borland, R., & McMurray, N. (1994). Self-efficacy, health locus of control, and smoking cessation. *Addictive Behaviors*, *19*(1), 1–12. doi:10.1016/0306-4603(94)90046-9

Tozdan, S., & Briken, P. (2015a). 'I believed I could, so I did'—A theoretical approach on self-efficacy beliefs to positively influence men with a risk to sexually abuse children. *Aggression & Violent Behavior*, *25*(A), 104–112. doi:10.1016/j.avb.2015.07.015

Tozdan, S., & Briken, P. (2015b). The earlier, the worse?—Age of onset of sexual interest in children. *Journal of Sexual Medicine*, *12*(7), 1602–1608. doi:10.1111/jsm.12927

Tozdan, S., Jakob, C., Schuhmann, P., Budde, M., & Briken, P. (2015). Spezifische Selbstwirksamkeit zur Beeinflussung des sexuellen Interesses an Kindern (SSIK): Konstruktion und Validierung eines Messinstruments [Specific self-efficacy for modifying sexual interest in children (SSIC): Construction and validation of a measuring instrument]. *Psychotherapie, Psychosomatik, Medizinische Psychologie*, *65*(9-10), 345–352.

Tozdan, S., Kalt, A., Dekker, A., Keller, L. B., Thiel, S., Müller, J. L., & Briken, P. (2016). Why information matters: A randomized controlled trial on the consequences of suggesting that pedophilia is Immutable. *International Journal of Offender Therapy and Compulsive Criminology*. Online First. https://www.ncbi.nlm.nih.gov/pubmed/27864530

Upton, G., & Cook, I. (2008). *A dictionary of statistics* (2nd ed.). Oxford, New York: Oxford University Press.

Van't Riet, J., Ruiter, R. A. C., Smerecnik, C., & de Vries, H. (2010). Examining the influence of self-efficacy on message-framing effects: Reducing salt consumption in the general population. *Basic and Applied Social Psychology*, *32*(2), 165–172. doi:10.1080/01973531003738338

Walsh, M. A., & Russell, K. C. (2010). An exploratory study of a wilderness adventure program for young offenders. *Ecopsychology*, *2*(4), 211–229. doi:10.1089/eco.2010.0035

Appendix A Specific Self-Efficacy for Modifying Sexual Interest in Children (SSIC) Scale

The following statements refer to what you think about the **mutability of your sexual interest in prepubescent and/or pubescent children** (i.e., whether this interest is changeable or unchangeable).

Please indicate to what extent you agree with these statements from **1 (*do not agree at all*)** to **5 (*totally agree*)**. There are no right or wrong answers, so please respond as honestly as possible. Please do not overthink your answer, instead use your first instinct to select the category you believe is most applicable to you.

***Important note**: The statements do not concern your ambition to achieve a change of your sexual interest in children. You can assess the statements, regardless of whether you are willing to change your sexual interest in children or not.*

	I agree … not at all	hardly	partly	mostly	totally
1.I believe I can influence my sexual interest in children.	1	2	3	4	5
2.I can succeed in reducing my sexual interest in children.	1	2	3	4	5
3.It mainly depends on me how my sexual interest in children develops.	1	2	3	4	5
4.I believe I can influence my sexual attraction to children by myself.	1	2	3	4	5
5.I have very little influence on the fact that I feel sexually attracted to children.	1	2	3	4	5
6.With sufficient willpower I could change my sexual interest in children.	1	2	3	4	5

Appendix B Sexual Outlet Inventory–Revised (SOI-R)

Please answer the following questions as honestly as possible.

1. **Number of orgasms**
   Taking into account the last **4 weeks**, please note the number of orgasms per week, independent of how these orgasms took place (e.g., masturbation, sexual contact with others, wet dreams, etc.):
   Number of orgasms:|__|__| per week
2. **Sexual desire**
   a) **related to children***:
   Please take into account the last 4 weeks.
   Please indicate the strength of desire for sexual acts **with children** by crossing the line.

   b) **not related to children***:
   Please take into account the last 4 weeks.
   Please indicate the strength of desire for sexual acts in which **children are not involved** by crossing the line.

3. **Time for sexual fantasies, desire, and activities**
   a) **related to children***:
   Please take into account the last 4 weeks.
   Please examine the daily time you spend for fantasies, desire, and activities related to sexual acts **with children**.
   Time per day: |__|__| minutes or |__|__| hours

b) **not related to children***:

Please take into account the last 4 weeks.

Please examine the daily time you spend for fantasies, desire, and activities related to sexual acts in which **children are not involved**.

Time per day: ⌊__⌋ minutes or ⌊__⌋ hours

* *prepubescent and/or pubescent children*