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Aggression and Social Anxiety Are Associated with Sexual Offending Against Children

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ABSTRACT

The current study examined a number of risk factors that are thought to be related to sexual offending. More specifically, we investigated differences in self-reported aggression, anger, hostility, social anxiety, and social skills between child sexual abusers ($n = 28$), rapists ($n = 36$), and nonsexual violent offenders ($n = 59$) who were detained under hospital order. In addition, differences between inpatient ($n = 28$) and outpatient child sexual abusers ($n = 61$) on the pertinent constructs were evaluated. Consistent with our expectations, we found that child sexual abusers reported themselves as lower on the aggression-related measures and higher on social anxiety than nonsexual violent offenders. In contrast with our hypotheses, however, the results also indicated that the inpatient child sexual abusers reported lower levels of aggression, anger, hostility, and social anxiety than the outpatient child sexual abusers. The observed differences between child sexual abusers, rapists, and nonsexual violent offenders are generally consistent with theories about the etiology of sexual abuse. The differences between the inpatient and outpatient child sexual abusers were not in the expected direction, but may be due to a number of methodological limitations of this research.

KEYWORDS

Sexual offenders; aggression, anger and hostility; social anxiety; social skills; self-report questionnaires

Sexual offending is a widespread international problem. Meta-analyses have indicated that the international prevalence rate of child sexual abuse is approximately 20% (Pereda, Guilera, Forns, & Gómez-Benito, 2009a, 2009b). The prevalence of rape is comparable to that of child sexual abuse, with most studies among American community samples showing prevalence rates of 15% (Kolivas & Gross, 2007). Approximately 2% of the male population will be convicted of a sexual crime (Lisak & Miller, 2002; Marshall, 1997), which suggests that a relatively small number of men is responsible for the rather large number of sexual offenses. In the meantime, there are also indications that the actual number of men committing sexual offenses is much higher (Grotperter & Elliott, 2002; Lisak & Miller, 2002). To understand deviant sexual behavior and to implement the appropriate prevention and treatment programs, identification of sexual offenders' psychological characteristics might be helpful (Hanson & Morton-Bourgon, 2005).

There are several multifactorial models that try to explain the etiology of child sexual abuse (see Ward,

Polaschek, & Beech, 2006 for a comprehensive overview). An account that has attracted considerable research attention is the *pathways model* (Ward & Siegert, 2002), which describes four sets of psychological mechanisms (i.e., pathways) that are thought to play a causal role in sexual offending against children: (1) antisocial cognitions; (2) deviant sexual scripts; (3) intimacy and social skill deficits; and (4) emotional dysregulation. According to this model, child sexual abuse can be initiated by all these factors, although the influence of each factor may vary for each individual case. Hudson and Ward (2000) have also hypothesized that deficits in social competency are central to sexual offending. In addition, child sexual abusers have been shown to have specialized atypical sexual interests (e.g., sexual interest in children) compared with other offenders and nonoffenders (e.g., Beech et al., 2008; Gray, Brown, MacCulloch, Smith, & Snowden, 2005; Worling, 2006). Various studies have found that child sexual abusers are less (or equally) prone to anger and hostility than other offender samples (e.g.,

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Lee, Pattison, Jackson, & Ward, 2001; Overholser & Beck, 1986; Seidman, Marshall, Hudson, & Robertson, 1994; Yates & Kingston, 2006), with only one investigation showing that child sexual abusers report more (trait) anger than rapists (Kalichman, 1991).

Factors that contribute to the initiation of sexual offending may not be the same as the factors that contribute to the persistence of sexual offending (i.e., recidivism; Hanson, 2000). Meta-analytic studies have identified deviant sexual interests and antisocial orientation/lifestyle instability as the primary risk factors associated with sexual recidivism (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). Other empirically supported risk factors are self-regulation problems, poor problem solving skills, offence-supportive cognitions, and negative social influences (Hanson & Harris, 2000, 2001; Mann, Hanson, & Thornton, 2010). Although social incompetence and intimacy deficits are common among child sexual abusers (e.g., Geer, Estupinan, & Manguno-Mire, 2000; Overholser & Beck, 1986; Seidman et al., 1994), there is no evidence that social skills deficits predict sexual recidivism. Further, the predictive power of various subcomponents of intimacy deficits remains unclear (Hanson & Morton-Bourgon, 2004), although emotional congruence with children, lack of emotionally intimate relationships with adults, and conflicts in intimate relationships have emerged as empirically well-supported risk factors for sexual recidivism (Mann, Hanson, & Thornton, 2010).

The current study further explored risk factors related to sexual offending against children. For this purpose, we examined differences between child sexual abusers, rapists, and non-sexual violent offenders on various self-report questionnaires measuring aggression, hostility, and anger (Hanson & Morton-Bourgon, 2004, 2009; Ward, Hudson, & Marshall, 1996), interpersonal anxiety, and social skills deficits (Hoyer, Kunst, & Schmidt, 2001; Segal & Marshall, 1985). Previous studies have consistently demonstrated that sexual offending against children is associated with lower levels of aggression (e.g., Yates & Kingston, 2006) and higher levels of social anxiety (e.g., Eher, Neuwirth, Fruehwald, & Frottier, 2003). Therefore, it was hypothesized that child sexual abusers would report less aggression and hostility in comparison with rapists and nonsexual violent offenders, and that child sexual abusers would be characterized by higher levels of self-reported social anxiety. Differences between inpatient and outpatient samples of child sexual abusers could provide an initial test of the plausibility that these factors are associated with an increased risk of reoffending. Therefore, we compared these groups on the same constructs. Since antisocial orientation/lifestyle instabilities are consistently correlated with sexual recidivism

(Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005), it was hypothesized that the inpatients would report more antisocial behavior, anger, aggression, and hostility than the outpatients.

Method

Participants

The study was conducted among 123 male forensic psychiatric inpatients and 61 male outpatients. The inpatients were recruited from the forensic psychiatric hospitals De Kijvelanden, 2Landen, Oldenkotte, and Veldzicht. According to the Dutch Entrustment Act (TBS: Terbeschikkingstelling), offenders who have committed offenses for which a maximum imprisonment of 4 or more years applies (such as child sexual abuse, rape, manslaughter, or murder) can be detained under hospital order. Another prerequisite for a TBS-sentence is that the offender cannot be held (fully) responsible for his actions. This diminished accountability is defined as a causal relation between a diagnosis of mental illness and/or personality disorder and the offense committed (e.g., Van Marle, 2000, 2002). To determine such relationship (and the risk of recidivism), suspects are extensively examined by a multidisciplinary team consisting of psychiatrists, psychologists, and nurses on the ward in a specialized assessment center of the Dutch Ministry of Justice. Forensic psychiatric inpatients are considered to present such high risk of sexual and violent recidivism that without treatment they would pose a danger to others and/or to the general safety of persons and property. The average length of stay in a forensic hospital is approximately 9 years (Van Gemmert & Van Schijndel, 2014). Of the 123 inpatients in the present sample, 28 were convicted child sexual abusers (mean age: 45.25 years, $SD = 10.25$, range: 26–64 years), 36 were rapists (mean age: 39.83 years, $SD = 9.60$, range: 22–59 years), and 59 were nonsexual violent offenders (mean age: 35.44 years, $SD = 7.73$, range: 24–56 years). Offenders in both the child sexual abuser and rapist sample had no history of prior sexual offenses against victims of varying ages.

The 61 outpatients in this study were all child sexual abusers recruited from the forensic psychiatric outpatient and day treatment center Het Dok. In the Netherlands, offenders can be required to undergo outpatient treatment for a variety of reasons such as (a) an added condition for offenses to which maximum imprisonment for 3 years or less applies, (b) an alternative to prison for offenses to which maximum imprisonment for 6 months or less applies, (c) a condition of suspension of detention while awaiting trial, (d) part of a penal program, or (e) a

supervision element for a protection agency. Although we were unable to determine the precise convictions (see procedure), most outpatients were first-time offenders convicted for intrafamilial child molestation. The average duration of outpatient treatment is approximately 2 years. The mean age of the outpatients in this study was 40.28 years ($SD = 15.61$, range: 13–76 years).

Measures

The *Sexual Violence Risk-20* (SVR-20; Boer, Hart, Kropp, & Webster, 1997; Dutch version: Hildebrand, De Ruiter, & Van Beek, 2001) is a structured professional rating instrument that assesses the risk of sexual violence in sexual offenders (Hanson & Morton-Bourgon, 2009). The SVR-20 comprises 20 items that have to be scored on a 3-point scale (0 = *does not apply*, 1 = *probably or partially applies*, and 2 = *applies*). De Vogel, De Ruiter, Van Beek, and Mead (2004) found that the Dutch version of the SVR-20 displayed good interrater reliability and predictive validity, both for the total score and the three subscale scores (i.e., psychosocial adjustment, history of sexual offenses, and future plans). Cronbach's α in the current study was .44.

The *Psychopathy Checklist-Revised* (PCL-R; Hare, 1991, 2003; Dutch version: Vertommen, Verheul, De Ruiter, & Hildebrand, 2002) is a 20-item inventory to assess psychopathy. The items are scored on a 3-point scale (0 = *does not apply*, 1 = *applies to some extent*, and 2 = *applies*). The psychometric qualities of the Dutch version of the PCL-R are comparable to those of its original English counterpart (Hildebrand, De Ruiter, De Vogel, & Van der Wolf, 2002). That is, the internal consistency is found to be high and the interrater reliability of individual items and the total score varies from good to excellent. Cronbach's α in the current study was .83.

The *Spielberger Trait Anger Scale* (STAS, Spielberger, 1980; Dutch version: Van der Ploeg, Defares, & Spielberger, 1982) is a 10-item questionnaire for assessing dispositional anger. Respondents have to indicate the frequency for items, such as "I easily lose my temper," using a 4-point Likert scale ranging from 1 = *almost never* to 4 = *almost always*. Van der Ploeg et al. (1982) demonstrated good internal consistency (Cronbach's $\alpha = .86$) and test-retest reliability ($r = .78$) for the STAS in a nonclinical sample, while Zwets et al. (2014) found a Cronbach's α of .96 in a forensic psychiatric offender sample. Cronbach's α in the current study was .94.

The *Adapted Version of Rosenzweig's (1978) Picture-Frustration Study* (PFS-AV; Hornsveld, Nijman, Hollin, & Kraaimaat, 2007) was employed for measuring hostility. Respondents were instructed to write down their initial reactions to 12 cartoon-like pictures in the blank text box (e.g., a shopkeeper in conversation with a customer

saying, "This is the third time that this watch has stopped working"). Responses were scored by an experienced and independent research assistant on a 7-point Likert-scale, ranging from 1 (*not hostile at all*) to 7 (*extremely hostile*). Hornsveld et al. (2007) demonstrated moderate to good internal consistency (Cronbach's $\alpha = .76$), test-retest reliability ($r = .67$), and interrater reliability ($r = .77$) in a similar forensic psychiatric inpatient sample. In the current study, Cronbach's α was .63 and the interrater reliability was .82.

The *Aggression Questionnaire-Short Form* (AQ-SF; Bryant & Smith, 2001; Dutch version: Hornsveld, Muris, Kraaimaat, & Meesters, 2009) is a shortened version of Buss and Perry's (1992) Aggression Questionnaire and contains 12 items that can be allocated to four subscales: Physical Aggression (e.g., "Once in a while I can't control the urge to strike another person"), Verbal Aggression (e.g., "My friends say that I'm somewhat argumentative"), Anger (e.g., "I have trouble controlling my temper"), and Hostility (e.g., "Other people always seem to get the breaks"). Respondents have to rate each item using a 5-point Likert-scale ranging from 1 (*entirely disagree*) to 5 (*entirely agree*). Hornsveld et al. (2009) demonstrated good internal consistency (Cronbach's $\alpha = .88$) and modest test-retest reliability ($r = .38$) in a violent forensic psychiatric outpatient sample. Cronbach's α in the current study was .85.

The *Inventory of Interpersonal Situations* (IIS; Van Dam-Baggen & Kraaimaat, 2000) assesses the level of discomfort respondents experience in response to 35 hypothetical social interactions (social anxiety) and the frequency of various social behaviors that would be performed in the given situations (social skills). The IIS assesses social anxiety and social skills in five domains: Giving criticism, Expressing one's own opinion, Initiating contact, Giving compliments, and Positive self-statements. Items are scored on a 5-point Likert-scale. For social anxiety (discomfort) scores range from 1 (*no tension at all*) to 5 (*very tense*), whereas social skills (frequency) scores range from 1 (*never*) to 5 (*always*). Van Dam-Baggen and Kraaimaat (2000) demonstrated good internal consistency for both the Discomfort Scale (Cronbach's $\alpha = .93$) and the Frequency Scale (Cronbach's $\alpha = .91$) and good test-retest reliability ($r = .84$) in a nonclinical sample. Zwets et al. (2014) found a Cronbach's α of .95 for the Discomfort Scale in a forensic psychiatric offender sample. Cronbach's α in the current study was .95 for the Discomfort Scale and also .95 for the Frequency Scale.

Procedure

All patients received an information letter in which the purpose and content of the study was described. This letter clearly stated that participation was on a voluntary basis, data would be processed

anonymously, patients would receive 10 euros for their participation, and that refusing to participate would not influence the patient's treatment in any way. Patients had approximately 1 week to consider their potential participation, after which they signed an informed consent form. The SVR-20 and PCL-R were scored by certified examiners and obtained as part of the standard screening protocol of the forensic psychiatric institutions (thus not the risk assessment of the specialized assessment center that advised the court on inpatient or outpatient treatment). For 2 and 10 inpatients, respectively, SVR-20 (one child abuser and one rapist) and PCL-R (four child abusers, four rapists, and two nonsexual violent offenders) scores could not be obtained. SVR-20 data of only 10 outpatients were available. For the inpatients, the questionnaires were completed individually in a separate testing room at the forensic hospitals. The outpatients completed the questionnaires at home. As several patients failed to complete all questionnaires according to the instructions, the number of patients involved in the data analyses varied per questionnaire.

Results

Inpatient child sexual abusers versus inpatient rapists versus inpatient nonsexual violent offenders

The differences between the inpatient child sexual abusers ($n = 28$), rapists ($n = 36$), and nonsexual violent offenders ($n = 59$) were examined. As a first step, a one-way analysis of variance (ANOVA) was conducted to test whether these inpatient groups differed in terms of age. Age, indeed, differed significantly across offender types, $F(2, 120) = 11.75, p < .001$, with post-hoc comparisons indicating that the child sexual abusers were significantly older than both

the nonsexual violent offenders ($p < .001$) and rapists ($p = .045$). Therefore, we decided to include age as a covariate in all further between-group analyses.

Next, we compared whether the child sexual abusers differed from the rapists in terms of risk of sexual recidivism, as measured by the SVR-20. An analysis of covariance (ANCOVA) with age as the covariate indicated that the child sexual abusers' risk of sexual recidivism (mean: 21.53, $SD = 4.95$, range: 11–32) was significantly lower than that of the rapists (mean: 22.90, $SD = 5.76$, range: 8–32), $F(1, 59) = 4.32, p = .042, d = 0.25, 95\% CI = [-0.25, 0.76]$. Hereafter, the three groups were compared with regard to their psychopathy scores as measured by the PCL-R. The child sexual abusers had a mean psychopathy score of 19.20 ($SD = 6.61$, range: 9–29), the rapists scored 24.15 ($SD = 6.83$, range: 12–37), and the nonsexual violent offenders' mean score was 21.64 ($SD = 7.92$, range: 4–34). The ANCOVA with age as a covariate revealed that there was a significant main effect of offender group, $F(2, 109) = 4.10, p = .019$, with post-hoc tests showing that the psychopathy score of the child sexual abusers was significantly lower than that of the rapists ($p = .005$), $d = 0.73, 95\% CI = [0.19, 1.28]$.

Finally, a multivariate ANCOVA indicated that the three inpatient groups differed in terms of their scores on the self-report questionnaires, $F(16, 180) = 1.91, p = .022$. The univariate tests revealed that the child sexual abusers reported significantly lower levels of aggression as measured by the AQ-SF as compared to the nonsexual violent offenders (Table 1), and this appeared true for total aggression, $d = 0.77, 95\% CI = [0.30, 1.24]$; physical aggression, $d = 1.05, 95\% CI = [0.57, 1.54]$; verbal aggression, $d = 0.56, 95\% CI = [0.10, 1.03]$; and anger, $d = 0.56, 95\% CI = [0.09, 1.02]$. Effect sizes obtained for these differences ranged from moderate to large. Child sexual abusers were also found to report significantly lower levels of physical aggression than rapists, $d = 0.60, 95\% CI = [0.08, 1.12]$. The effect size for

Table 1. Differences in self-reported levels of aggression, social anxiety, and social skills between child sexual abusers, rapists, and nonsexual violent offenders (all inpatients), corrected for age differences.

Questionnaire	Subscale	Child sexual abusers		Rapists		Violent offenders		F-value	Child sexual abusers vs Rapists Cohen's <i>d</i> [95% CI]	Child sexual abusers vs Violent offenders Cohen's <i>d</i> [95% CI]
		<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)			
STAS	Anger (trait)	27	15.11 (5.05)	32	17.19 (4.25)	55	18.78 (7.50)	1.86, $p = .16$	-0.45 [-0.97, 0.07]	-0.54 [-1.01, -0.07]*
PFS-AV	Hostility	24	28.79 (4.15)	28	29.11 (6.67)	51	30.35 (4.60)	0.35, $p = .71$	-0.06 [-0.60, 0.49]	-0.35 [-0.84, 0.14]
AQ-SF	Aggression	27	22.93 (7.04)	33	26.97 (8.02)	57	30.05 (10.14)	5.49, $p = .01^{**}$	-0.53 [-1.05, -0.01]	-0.77 [-1.24, -0.30]**
	Physical aggr.	27	5.85 (2.98)	33	7.73 (3.28)	57	9.00 (2.99)	9.20, $p < .01^{***}$	-0.60 [-1.12, -0.08]*	-1.05 [-1.54, -0.57]**
	Verbal aggr.	27	5.44 (1.95)	33	5.85 (2.17)	57	6.79 (2.57)	3.15, $p = .05^*$	-0.20 [-0.71, 0.31]	-0.56 [-1.03, -0.10]*
	Anger	27	5.56 (2.38)	33	6.18 (2.62)	57	7.23 (3.26)	3.84, $p = .02^*$	-0.25 [-0.76, 0.26]	-0.56 [-1.02, -0.09]*
	Hostility	27	6.07 (2.32)	33	7.21 (2.95)	57	7.04 (3.28)	0.98, $p = .38$	-0.42 [-0.94, 0.09]	-0.32 [-0.78, 0.14]
IIS	Social anxiety	28	67.46 (21.75)	34	66.97 (18.89)	58	61.78 (19.34)	1.29, $p = .28$	0.02 [-0.48, 0.52]	0.28 [-0.17, 0.73]
	Social skills	28	114.46 (21.15)	34	118.21 (16.74)	58	108.33 (26.86)	1.36, $p = .26$	-0.20 [-0.70, 0.30]	0.24 [-0.21, 0.70]

Note: STAS = Spielberger Trait Anger Scale, PFS-AV = Picture-Frustration Study - Adapted Version, AQ-SF = Aggression Questionnaire - Short Form, IIS = Inventory of Interpersonal Situations.

* $p < .05$. ** $p < .01$. *** $p < .001$.

this difference was moderate. In addition, some evidence was found for elevated social anxiety in the sex offender samples. That is, both child sexual abusers and rapists reported more social anxiety than nonsexual violent offenders when giving criticism, with effect sizes of $d = 0.61$, 95% CI = [0.15, 1.08] and $d = 0.62$, 95% CI = [0.18, 1.05], respectively. Child sexual abusers also reported more social anxiety than nonsexual violent offenders when expressing their opinion, $d = 0.55$, 95% CI = [0.09, 1.01]. No significant between-group differences were found in self-reported social skills and hostility.

Inpatient child sexual abusers versus outpatient child sexual abusers

First, we examined whether the outpatient child sexual abusers differed from the inpatient child sexual abusers in terms of age. An independent-samples t -test indicated that age was comparable between both samples, $t(87) = 1.54$, $p = .128$. Next, we compared whether the outpatients differed from the inpatients in terms of risk of sexual recidivism, as measured by the SVR-20. An independent-samples t -test indicated that the outpatients' risk of sexual recidivism (mean: 9.10, $SD = 6.03$, range: 3–19) was significantly lower than that of the inpatients (mean: 21.53, $SD = 4.95$, range: 11–32), $t(35) = 6.50$, $p < .001$, $d = 2.41$, 95% CI = [1.50, 3.31].

Differences in the mean scores on the self-report questionnaires were evaluated and effect sizes (Cohen's d) and 95% confidence intervals (CIs) were computed. A multivariate ANOVA indicated there was no significant main effect of offender group on the self-report questionnaires, $F(8, 63) = 1.31$, $p = .127$. The univariate tests revealed several significant differences between the inpatient and outpatient child sexual abusers on the aggression-related variables, but as can be seen in Table 2, these differences were not in the expected direction. That is, inpatient child sexual

abusers reported significantly lower levels of total aggression, $d = 0.61$, 95% CI = [0.14, 1.07]; anger, $d = 0.50$, 95% CI = [0.04, 0.96]; and hostility, $d = 0.83$, 95% CI = [0.36, 1.31]. Results regarding social anxiety and social skills were, again, counterintuitive: the inpatient child sexual abusers reported significantly lower levels of social anxiety in comparison with the outpatients while complimenting others, $d = 1.55$, 95% CI = [1.04, 2.05], and during positive self-statements, $d = 0.67$, 95% CI = [0.21, 1.14]. Note also that the inpatients reported a higher frequency of positive self-statements in comparison with the outpatients, $d = 0.50$, 95% CI = [0.03, 0.96]. All effect sizes for these significant differences were in the moderate to large range.

Discussion

The primary goal of the current study was to examine psychological risk factors related to sexual offending. For that purpose, inpatient child sexual abusers, rapists, and nonsexual violent offenders were compared with respect to self-reported levels of aggression, anger, hostility, social anxiety, and social skills. In addition, we analyzed differences on these variables between samples of inpatient and outpatient child sexual abusers to provide an initial test of the plausibility that these factors are associated with an increased risk of reoffending.

Regarding the differences between the child sexual abusers, rapists, and nonsexual violent offenders, results were consistent with previous research. Child sexual abusers reported lower levels of aggression than nonsexual violent offenders and, although to a lesser extent, rapists. This was particularly evident for physical aggression and to a lesser extent for verbal aggression and anger. However, it should be noted that the self-reported AQ-SF scores of the inpatients were comparable to normative scores as reported by Hornsveld et al. (2009), implying that the inpatients in this study were equally aggressive

Table 2. Differences in self-reported levels of aggression, social anxiety, and social skills between inpatient child sexual abusers and outpatient child sexual abusers.

Questionnaire	Subscale	Inpatient child sexual abusers		Outpatient child sexual abusers		F-value	Inpatients vs Outpatients Cohen's d [95% CI]
		<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)		
STAS	Anger (trait)	27	15.11 (5.05)	59	17.15 (5.64)	2.58, $p = .11$	-0.37 [-0.83, 0.09]
PFS-AV	Hostility	24	28.79 (4.15)	57	30.32 (5.58)	1.45, $p = .23$	-0.29 [-0.77, 0.19]
AQ-SF	Aggression (total)	27	22.93 (7.04)	58	28.45 (9.89)	6.79, $p = .01^*$	-0.61 [-1.07, -0.14]
	Physical aggression	27	5.85 (2.98)	58	6.33 (3.19)	0.43, $p = .52$	-0.15 [-0.61, 0.30]
	Verbal aggression	27	5.44 (1.95)	58	6.22 (2.58)	1.95, $p = .17$	-0.32 [-0.78, 0.13]
	Anger	27	5.56 (2.38)	58	7.03 (3.16)	4.68, $p = .03^*$	-0.50 [-0.96, -0.04]
	Hostility	27	6.07 (2.32)	58	8.86 (3.72)	12.77, $p < .01^{***}$	-0.83 [-1.31, -0.36]
IIS	Social anxiety	28	67.46 (21.75)	57	76.84 (24.85)	2.89, $p = .09$	-0.39 [-0.85, 0.06]
	Social skills	28	114.46 (21.15)	52	110.73 (17.69)	0.71, $p = .40$	0.20 [-0.26, 0.66]

Note: STAS = Spielberger Trait Anger Scale, PFS-AV = Picture-Frustration Study - Adapted Version, AQ-SF = Aggression Questionnaire - Short Form, IIS = Inventory of Interpersonal Situations.

* $p < .05$. *** $p < .001$.

as secondary vocational students. In addition, it was found that child sexual abusers reported significantly higher levels of social anxiety than nonsexual violent offenders. This finding is in line with earlier studies indicating that social anxiety is associated with sexual offending against children (Nunes, McPhail, & Babchishin, 2012). The child sexual abusers, however, reported less social anxiety than the norm group of the original IIS-study (Van Dam-Baggen & Kraaimaat, 2000), suggesting that these child sexual abusers were not more anxious in social situations than the general population. An additional comparison of child sexual abusers (both inpatient and outpatient) to the inpatient rapists and nonsexual violent offenders yielded similar results: the child sexual abusers reported significantly less physical aggression and significantly more social anxiety than both the rapists and nonsexual violent offenders, indicating that lower levels of (self-reported) physical aggression and higher levels of social anxiety are consistently associated with sexual offending against children. Despite the increased risk of Type I errors when making large numbers of comparisons, no corrections were made for the number of calculated differences. Note that if such a correction had been applied, only the difference regarding physical aggression would have reached statistical significance.

With respect to the differences between the inpatient and outpatient child sexual abusers, it is notable that all significant effects were in contrast with our expectations. We hypothesized that the inpatients would report more aggression and social anxiety than the outpatient child sexual abusers. However, the inpatients generally reported lower levels of aggression than the outpatients. Moreover, the inpatients considered themselves as more socially skilled and less socially anxious than the outpatients. This latter finding could be explained by the possibility that being a sex offender in the community causes more stress and anxiety, which is not experienced by the sex offenders in an inpatient facility, although it should be immediately noted that other interpretations cannot be ruled out due to the cross-sectional design of the study. Again, no corrections were made for the number of calculated differences; otherwise, only the difference on hostility would have attained statistical significance.

Our findings regarding the contrasts between inpatient and outpatient sexual offenders against children seem inconsistent. We were unable to determine the precise convictions of the outpatients who participated in this study. However, based on the larger sample of child sexual abusers who were treated in the outpatient facility, we were able to make a rough estimation of these convictions. The majority of the outpatients were convicted for intrafamilial child molestation and nearly all were first-

time offenders. The inpatients, however, had an extensive history of sexual and/or nonsexually violent offenses with mostly extrafamilial victims. This suggests higher levels of pedophilia and aggression among the inpatient than the outpatient sexual offenders against children. Given that pedophilia has been found to be associated with greater social anxiety (Eher, et al. 2003) and that our inpatient sexual offenders against children had more pedophilic and aggressive criminal histories than did the outpatients, it is difficult to account for our finding that the inpatient group had *less* socially anxious and *more* aggressive scores on the self-report measures than did the outpatient group.

However, the results may have been influenced by confounding factors, such as social desirability, treatment effects, or contextual differences. As to social desirability, detention under hospital order is (re-)evaluated annually by the court. Without treatment progress, this sentence can be renewed an unlimited number of times. Although all patients were informed that the data collected during this study would be processed anonymously, the inpatients may, nevertheless, have been under the assumption that their responses could have legal implications. The self-report measures used in this study had no validity scales for defensive response styles. However, our findings that child sexual abusers report more social anxiety and that aggression and anger are more characteristic for rapists and nonsexual violent offenders are in line with previous research, thereby implying that social desirability had a minimal impact on the results within the inpatient sample. Another confounding factor could be the effects of treatment. It seems plausible to assume that patients are more likely to display problem behavior at the beginning of their treatment than at the end of treatment. We could not determine the length of outpatient treatment at the time this study was conducted, but note that the average duration of outpatient treatment is approximately 2 years. The average length of admission for the inpatients was 34 months. Therefore, the differences found between the inpatients and the outpatients could have been influenced by the period that these patients were under treatment. In addition, treatment intensity differs substantially from inpatient to outpatient settings. Inpatient treatment comprises various forms of therapy and 24-hour supervision, whereas the outpatients generally receive one (group) session of therapy per week. Our results may also be influenced by medication differences. Pharmacological interventions are commonly applied in (hypersexual) sex offenders to reduce their risk of reoffending (Briken, Hill, & Berner, 2014). For sexual offenders in clinical settings, pharmacotherapy (including medication compliance) is generally a necessary condition in order to qualify for leave, whereas outpatient sex offenders only receive pharmacotherapy upon request or when indicated.

Policy differences regarding psychotropic medication could provide us with an alternative explanation for the differences found in aggression, anger, hostility, and anxiety between the inpatient and outpatients child sexual abusers. There are also some clear indications that the lack of clinical elevation in the self-report measures could be attributed to contextual differences (also see Olver, Kingston, Nicholaichuk, & Wong, 2014). Research by Hornsveld, Kraaimaat, Bouwmeester, Polak, and Zwets (2014) demonstrated, within a similar inpatient sample, that these inpatients barely show any aggressive behavior after admission and that this effect remained stable over a follow-up period of 3 years. These authors attributed the absence of aggressive behavior to the maximum security environment with a high staff-patient ratio, allowing staff members to settle potentially high-risk situations at an early stage. Because the outpatients in this study did not receive such intensive staff supervision, they could be more likely to relapse to problem behavior, which could result in higher levels of self-reported aggressive behavior. Another context-related explanation is that the inpatients' responses may reflect, at least to some degree, a social comparison against their fellow inpatients (e.g., "I am not as aggressive as patient x"), whereas the outpatients' responses may reflect a social comparison against mostly nonoffenders in the community. If this is the case, maybe these different comparisons change the inpatients' self-appraisal such that they view themselves as less aggressive and more socially competent than they would have when residing in the community. Finally, we emphasize some limitations regarding the operationalization of the samples used in this study. Because file data were used to group the samples, it must be recognized that some offenders may have been misclassified. As noted earlier, we were unable to determine the precise convictions of the outpatients, and this may have resulted in a disproportionately greater number of intrafamilial child sexual abusers in the outpatient group in comparison with the inpatients.

The results of our study are generally in line with the etiological theories of sexual offending, but given the cross-sectional nature of this study, we cannot conclude that there is a causal relationship between these risk factors and sexual offenses. Identifying differences between child sexual abusers, rapists, and nonsexual violent offenders may contribute to more differentiation in treatment for these subgroups. Although limited skills with respect to intimate relationships are central to sexual offending (Hudson & Ward, 2000), social skills deficits are, however, unrelated to both sexual and violent recidivism (Mann et al., 2010), indicating that these risk factors might not be worth targeting in sex offender treatment. The elevated levels of psychopathy and aggression in the rapists (and nonsexual violent offenders) suggest that antisocial traits and attitudes are

a specific treatment target for these subgroups. The differences between the inpatient and outpatient child sexual abusers were not in the expected direction, but methodological limitations make it difficult to draw conclusions from these findings. It is most likely that our results were influenced by contextual differences and, therefore, we advise caution when using self-report measures across different settings. Furthermore, other methods of measurement, such as clinical observations or structured interviews, could have been more effective in identifying group differences. More research into the risk factors involved with sexual offending is required for a better understanding of this phenomenon and will result in the improvement of risk assessment, treatment, and supervision of forensic psychiatric child sexual abusers and sex offenders in general.

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