CHAPTER 6

Childhood Abuse and Mental Health Problems in Sexual Offending Juveniles compared to General Offending Juveniles

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(In review)

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ABSTRACT

Objective: to examine the relationship between a history of childhood abuse and mental health problems in juveniles who sexually offended (JSOs) compared to juveniles who offended non-sexually (non-JSOs).

Methods: a sample of 44 JSOs and 763 non-JSOs incarcerated in two juvenile detention centers in the Netherlands between May 2008 and March 2014 were examined for childhood abuse history (Childhood Trauma Questionnaire-Short Form [CTQ-SF]), and mental health problems (Massachusetts Youth Screening Instrument-Version 2 [MAYSI-2]).

Results: in JSOs, sexual abuse was related to angry-irritable problems, suicide ideation, and thought disturbance. In addition, physical neglect was related to suicide ideation. The relationship between sexual abuse, suicide ideation, and thought disturbance was significantly stronger in JSOs than in non-JSOs.

Conclusions: our results suggest that childhood abuse needs to be taken into account in the treatment of mental health problems in JSOs (e.g., trauma-based therapies).

Keywords: sexual offending juveniles, childhood sexual abuse, mental health problems, MAYSI-2
BACKGROUND

Childhood traumatic experiences are a major societal problem, with detrimental consequences for the victim. There is clear evidence that the experience of childhood abuse is related to increased prevalence of mental health problems (e.g., Wasserman & McReynolds, 2011; Ruchkin, Henrich, Jones, Vermeiren, & Schwab-Stone, 2007; Kilpatrick et al., 2000). In addition, childhood abuse, especially sexual abuse, is a risk factor for later offending behavior (Watts & McNutty, 2013). Although childhood (sexual) abuse is highly prevalent in juveniles who sexually offended (JSOs) (e.g., Seto & Lalumière, 2010), little attention has been devoted to the direct relation between childhood abuse and mental health problems in this specific group of offenders. More insight into this relationship could be of great importance for intervention in JSOs.

Previous studies showed that childhood abuse is highly prevalent in JSOs. Based on information in the meta-analysis of Seto and Lalumière (2010) the mean prevalence rate for sexual abuse in JSOs is 36.9%1, 42.2% for physical abuse, and 48.1% for emotional abuse/neglect. Subsequently, compared to juveniles who offended non-sexually (non-JSOS), JSOs experienced more childhood abuse (Seto & Lalumière, 2010; Van Wijk et al., 2006); physical abuse (d=0.19), emotional abuse/neglect (d=0.28), and especially sexual abuse (d=0.62) were significantly more often found in the histories of JSOs than in non-JSOS (Seto & Lalumière, 2010).

One hypothesis to explain the higher prevalence of sexual abuse in JSOs compared to non-JSOS is the sexually abused sexual abuser hypothesis (for detailed information see: Seto & Lalumière, 2010; Jespersen, Lalumière, & Seto, 2009). This hypothesis states that juveniles who have experienced sexual abuse are at greater risk to engage in sexual offending behavior later in life than juveniles who have not been sexually abused. Meta-analyses in adult and juvenile sex offender samples supported this sexually abused sexual abuser hypothesis, as sexual abuse histories were more prevalent in sex offenders than in non-sex offenders (Seto & Lalumière, 2010; Jespersen et al., 2009).

Several possible explanations are given for the association between a history of sexual abuse and later sexual offending. First, sexually abused juveniles may expose sexual offending behavior through learning, such as modeling of the perpetrator, and by adopting a positive attitude and beliefs towards sexual behavior between children and adults (Burton, 2003). Second, a relationship between sexual abuse and an abnormal or deviant psychosexual develop-

1 Based on Table 7 in Seto and Lalumière (2010, p.546), we, first, converted the reported percentages experienced sexual abuse into proportions. Second, we multiplied proportion experienced sexual abuse and the number of adolescent sex offenders. Third, we computed the total number of adolescent sex offenders, as well as the total of the newly created variable proportion experienced sexual abuse*number of adolescent sex offenders. Fourth, we divided the total proportion experienced sexual abuse*number of adolescent sex offenders by the total number of adolescent sex offenders. The mean prevalence rates for physical abuse and emotional abuse/neglect were calculated using the same method.
ment may result in an increased risk for sexual offending behavior (Jespersen et al., 2009). Third, the relationship between sexual abuse and sexual offending behavior could be caused indirectly through other third variables, such as mental health problems (Jespersen et al., 2009).

With regard to this latter explanation, studies for example have shown that mental disorders are highly prevalent in juvenile offenders (Boonmann et al., accepted; Colins et al., 2010; Vermeiren, 2003). In addition, JSOs reported more internalizing problems (social isolation, anxiety, low self-esteem, thought disturbance), atypical sexual interests, and fewer externalizing problems, including substance abuse problems than non-JSOs (Seto & Lalumière, 2010; DeLisi et al., 2008; Van Wijk, Blokland, Duits, Vermeiren, & Harkink, 2007; Van Wijk et al., 2006). Moreover, several studies showed that childhood abuse, including sexual abuse, is related to substance abuse, depression, suicide or suicidal ideation, anxiety disorder and Post Traumatic Stress Disorder (King et al., 2011; Chartier, Walker, & Naimark, 2009; Collishaw et al., 2007; Brown, Cohen, Johnson, & Smailes, 1999; Grilo, Sanislow, Fehon, Martin, & McGlashan, 1999), as well as to symptoms of psychosis and schizophrenia (King et al., 2011; Colins, et al. 2009; Read, van Os, Morisson, & Ross, 2005). Given that studies suggest that childhood abuse is more often found in the histories of JSOs than in the histories of non-JSOs (Seto, & Lalumière, 2010; Van Wijk et al., 2006), one would expect that JSOs have more mental health problems than non-JSOs. Although this seems to be true for internalizing problems (Seto, & Lalumière, 2010; DeLisi et al., 2008; Van Wijk et al., 2006), JSOs, nevertheless, reported less externalizing problems and substance abuse problems than non-JSOs (Seto & Lalumière, 2010; Van Wijk et al. 2007). Therefore, the question arises if the relationship between childhood abuse and mental health problems in sexual offending behavior differs from this relationship in general antisocial behavior.

The aim of the current study is, therefore, to examine the association between childhood abuse and mental health problems in JSOs, over and above offending behavior in general. More specifically, we will examine (a) differences between JSOs and non-JSOs in history of childhood abuse, current mental health and substance abuse problems, and (b) the relationship between histories of childhood abuse on the one hand and current mental health and substance abuse problems on the other hand in JSOs compared to non-JSOs. We hypothesized that JSOs will report more childhood abuse, more internalizing mental health problems and fewer externalizing mental health problems, and substance abuse problems, than non-JSOs. Furthermore, we expect a stronger relationship between childhood abuse, especially sexual abuse, and internalizing mental health problems in JSOs than in non-JSOs.
METHODS

Participants
The sample included 807 male juvenile offenders who were incarcerated in two juvenile detention centers in the Netherlands between May 2008 and March 2014. Youth were classified as being a juvenile who sexually offended (JSO) if their official judicial record showed a history of conviction for a sexual offense or if they reported having ever engaged in sexual behavior against someone else’s will. Based on these official judicial records and self-reports, 44 participants were identified as JSOs. The age range of the total sample was between 13 and 24 years (mean age = 16.7, SD = 1.3). JSOs and non-JSOs did not differ in age (mean ages were respectively 17.0 [SD = 2.0] for JSOs and 16.7 [SD = 1.3] for juveniles who offended non-sexually (non-JSOs); t = -1.4; p = .15). However, JSOs were significantly more often of native Dutch background (40.9%) than non-JSOs (26.0%; $\chi^2 = 4.7, p < .05$).

Procedure
Assessments were part of a standardized self-report mental health screening procedure in the juvenile detention centers. The youths were explained that their answers were used for clinical purposes and for evaluation of the interventions they needed. Juveniles and their parents were informed that all information was also used for scientific research after anonymisation. The relevant institutional review and scientific boards of the juvenile detention centers approved the study as well as the procedure (for more details, see Vahl et al., 2013).

Instruments
Childhood Trauma Questionnaire-Short Form (CTQ-SF)
The CTQ-SF (Bernstein et al., 2003; Bernstein & Fink, 1998) is a 28-item self-report inventory that provides brief, reliable, and valid screening for histories of abuse and neglect (Bernstein et al., 2003; Bernstein, Ahluvalia, Pogge, & Handelsman, 1997). It inquires about five types of maltreatment: (1) emotional abuse (e.g., “I thought that my parents wished I had never been born”), (2) physical abuse (e.g., “People in my family hit me so hard that it left me with bruises or marks”), (3) sexual abuse (e.g., Someone tried to touch me in a sexual way or tried to make me touch them”), (4) emotional neglect (e.g., “There was someone in my family who helped me feel that I was important or special”) and (5) physical neglect (e.g., “I had to wear dirty clothes”), and 3 items to screen for false-negative trauma reports (e.g., “There was nothing I wanted to change about my family”). Participants are asked to rate whether each item is (1) never, (2) rarely, (3) sometimes, (4) often, or (5) very often true. In the Dutch translation (Thombs, Bernstein, Lobbestael, & Arntz, 2009; Arntz & Wessel, 1996), one question about molestation was removed due to low correlation with the sexual abuse subscale and high correlation with physical abuse subscale. Translation of the word “molestation” into Dutch was not linked to sexual abuse per se (Thombs et al., 2009). Internal consistency of the Dutch CTQ-SF ranged from .89 (emotional abuse) to .95 (sexual abuse), with the exception of physical neglect (.63) (Thombs et al., 2009).
Massachusetts Youth Screening Instrument-Version 2 (MAYSI-2)
The MAYSI-2 (Grisso & Barnum, 2006; Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001) is a brief mental health screening tool to identify youth who are at immediate risk for suicide and increased mental health and substance use needs. It is one of the most widely used screening instruments for mental health problems in the United States (Grisso, & Barnum, 2006; Grisso et al., 2001), and has been implemented by the Dutch Ministry of Justice as part of the standardized mental health screening at entry to all juvenile justice detention centers in the Netherlands. Based on factor analyses, the MAYSI-2 contains seven scales: alcohol/drug use, angry-irritable, anxious-depressed, somatic complaints, suicide ideation, thought disturbance, and traumatic experience (Grisso et al., 2012; Grisso, & Barnum, 2006; Archer, Stredny, Mason, & Arnau, 2004; Grisso et al., 2001). All scales except for the traumatic experience scale have two cut-off points. The caution cut-off indicates that the score of the youth may have clinical significance; the warning cut-off indicates an exceptionally high score compared to other juveniles in juvenile justice institutions.

The MAYSI-2 has acceptable to good internal consistency for the alcohol/drug use, angry-irritable, anxious-depressed, somatic complaints and suicide ideation scales, and poor to acceptable internal consistency for the thought disturbance and traumatic experience scale (Grisso et al., 2012; Hayes, McReynolds, & Wasserman, 2005; Archer et al., 2004; Grisso et al., 2001). Good concurrent validity also has been demonstrated (Grisso et al., 2012; Archer, Simonds-Bisbee, Spiegel, Handel, & Elkins, 2010; Chapman, & Ford, 2008; Butler, Loney, & Kistner, 2007; Tille & Rose, 2007; Caldwell et al., 2006; Grisso et al., 2001).

Statistical Analysis
Data were analyzed using International Business Machines Corporation Statistical Package for Social Sciences, version 19 (IBM SPSS 19). For all calculations the level of statistical significance was set at .01. First, differences in childhood trauma scores and mental health scores between JSOs and non-JSOs were calculated by means of t-tests. In addition, we calculated the effect sizes using Cohen’s $d$. For the interpretation of the magnitude of the effect sizes, the classification provided by Cohen (1988) was used, distinguishing a small ($d = .20$), medium ($d = .50$) and a large effect size ($d = .80$). Second, as our results were not normally distributed, we used Spearman Rho Correlations to examine the relation between childhood abuse and mental health problems in JSOs and general offending juveniles. Third, we compared the relationship of childhood abuse and mental health problems in JSOs and non-JSOs by calculating the difference between the two independent correlation coefficients using the computer software available from http://quantpsy.org (Preacher, 2002). For the interpretation of the magnitude of the correlation coefficients, the classification provided by Cohen (1988) was used, distinguishing a small effect ($r = 0.10-0.29$), a medium effect ($r = 0.30-0.49$) and a large effect ($r = 0.50+$). In addition, we conducted multiple linear regression analyses, with type of abuse (i.e., emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect), type of offender (JSO or non-JSOs) and the interaction effect of type of abuse and type of offender as independent categorical variables,
and mental health problems (i.e., alcohol/drug use, angry-irritable, anxious-depressed, somatic complaints, suicide ideation, thought disturbance, and traumatic experience) as dependent continuous variable. As JSOs and non-JSOs differed in ethnic background, we included ethnicity (native versus non-native Dutch background) as covariate.

RESULTS

In Table 1, the descriptive statistics for the CTQ-SF and the MAYSI-2 are presented separately for juveniles who sexually offended (JSOs) and juveniles who offended non-sexually (non-JSOs). Both JSOs and non-JSOs report the highest mean scores on the emotional neglect scale and the lowest mean scores on the sexual abuse scale of the CTQ-SF. The caution cut-off scores of the MAYSI-2 indicate that somatic complaints and thought disturbance are highly prevalent in JSOs as well as non-JSOs. In addition, a high number of JSOs manifested depressed anxious problems. With respect to warning cut-off scores, a high number of JSOs and non-JSOs reported alcohol/drug use problems and thought disturbance. Furthermore, suicide ideation was also highly prevalent in JSOs.

There were no significant differences between JSOs and non-JSOs in reported history of emotional neglect and abuse, physical neglect and abuse, or sexual abuse. On all of the MAYSI-2 scales, JSOs and non-JSOs did not report experiencing significantly different mental health problems (see Table 1).

In Table 2 correlations between the scales of the MAYSI-2 and the CTQ-SF are presented for JSOs and non-JSOs. For JSOs, 6 of the 30 correlations were medium or large in magnitude (Cohen, 1988), whereas this was the case in only 3 out of the 30 correlations for non-JSOs. In JSOs, there were significant large correlations between sexual abuse and angry-irritable problems, suicide ideation, and thought disturbance, as well as between physical neglect and suicide ideation. Medium correlations were found for emotional abuse and depressed anxious problems, and traumatic experiences. In non-JSOs, medium correlations were found for emotional abuse and angry-irritable problems, depressed anxious problems and traumatic experience.

In addition, the differences between the two independent correlations in JSOs and non-JSOs were calculated. In general, the relationships of childhood traumatic experiences and mental health problems in JSOs compared to non-JSOs did not significantly differ in juveniles with a history of emotional abuse, physical abuse, or emotional neglect. As for physical neglect, the relationship with suicide ideation differed significantly in magnitude, with a stronger link in JSOs than non-JSOs. Most differences were found regarding sexual abuse; JSOs showed significantly stronger connections between sexual abuse, angry-irritable problems, suicide ideation, and thought disturbance than non-JSOs.
Table 1 | CTQ-SF and MAYS1-2 scores for juvenile sex offenders and non-sex offenders.

<table>
<thead>
<tr>
<th></th>
<th>JSO</th>
<th>Non-JSO</th>
<th>t</th>
<th>p</th>
<th>d*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CTQ-SF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Abuse</td>
<td>6.6 (2.3)</td>
<td>6.3 (2.7)</td>
<td>-0.63</td>
<td>0.53</td>
<td>0.12</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>6.0 (2.8)</td>
<td>5.9 (2.4)</td>
<td>-0.18</td>
<td>0.86</td>
<td>0.04</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>5.3 (1.0)</td>
<td>5.1 (1.0)</td>
<td>-0.86</td>
<td>0.39</td>
<td>0.20</td>
</tr>
<tr>
<td>Emotional Neglect</td>
<td>9.7 (4.9)</td>
<td>8.7 (4.1)</td>
<td>-1.54</td>
<td>0.13</td>
<td>0.22</td>
</tr>
<tr>
<td>Physical Neglect</td>
<td>6.6 (2.9)</td>
<td>6.3 (2.1)</td>
<td>-1.03</td>
<td>0.30</td>
<td>0.12</td>
</tr>
<tr>
<td><strong>MAYS1-2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol/Drug Use</td>
<td>1.2 (2.0)</td>
<td>15.9 (7)</td>
<td>16.1 (123)</td>
<td>0.39</td>
<td>0.70</td>
</tr>
<tr>
<td>Angry-Irritable</td>
<td>1.8 (1.7)</td>
<td>6.8 (3)</td>
<td>15.1 (115)</td>
<td>0.60</td>
<td>0.55</td>
</tr>
<tr>
<td>Depressed Anxious</td>
<td>1.5 (1.7)</td>
<td>27.3 (12)</td>
<td>16.9 (129)</td>
<td>-1.50</td>
<td>0.14</td>
</tr>
<tr>
<td>Somatic Complaints</td>
<td>1.7 (1.4)</td>
<td>27.3 (12)</td>
<td>28.4 (217)</td>
<td>0.03</td>
<td>0.98</td>
</tr>
<tr>
<td>Suicide Ideations</td>
<td>0.3 (0.9)</td>
<td>9.1 (4)</td>
<td>5.1 (39)</td>
<td>-1.17</td>
<td>0.24</td>
</tr>
<tr>
<td>Thought Disturbance</td>
<td>0.5 (0.8)</td>
<td>38.6 (17)</td>
<td>21.4 (163)</td>
<td>-2.27</td>
<td>0.02</td>
</tr>
<tr>
<td>Traumatic Experience</td>
<td>1.5 (1.2)</td>
<td>1.5 (1.4)</td>
<td>-0.44</td>
<td>0.66</td>
<td>0.00</td>
</tr>
</tbody>
</table>

* Cohen (1988) described mean standardized differences as “a small effect (d = 0.20-0.49), a medium effect (d = 0.50-0.79) and a large effect (d = 0.80+)”. Results that are statistically significant and have medium or larger effect sizes are bolded.
Table 2 | Spearman Rho Correlations between MAYSI-2 and CTQ-SF scales

<table>
<thead>
<tr>
<th>CTQ-SF</th>
<th>Alcohol/drug use</th>
<th>Angry-irritable</th>
<th>Depressed/anxious</th>
<th>Somatic complaints</th>
<th>Suicide ideations</th>
<th>Thought disturbance</th>
<th>Traumatic experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional abuse</td>
<td>.19</td>
<td>.27*</td>
<td>.59</td>
<td>.10</td>
<td>.34*</td>
<td>.11</td>
<td>.48*</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>.03</td>
<td>.21*</td>
<td>.26</td>
<td>-.06</td>
<td>.24*</td>
<td>-.05</td>
<td>.33</td>
</tr>
<tr>
<td>Sexual abuse</td>
<td>.01</td>
<td>.09</td>
<td>.62</td>
<td>.58*</td>
<td>.07</td>
<td>.00</td>
<td>.33</td>
</tr>
<tr>
<td>Emotional neglect</td>
<td>-.02</td>
<td>.22*</td>
<td>.13</td>
<td>.08</td>
<td>.26*</td>
<td>.24</td>
<td>.23</td>
</tr>
<tr>
<td>Physical neglect</td>
<td>.14</td>
<td>.25*</td>
<td>.49</td>
<td>.19</td>
<td>.25*</td>
<td>.67</td>
<td>.30</td>
</tr>
</tbody>
</table>

* p<.01; Note: the p-values are for the test of difference between the two independent correlation coefficients.
Table 3 | Multiple linear regression analyses for type of abuse, type of offender, and interaction effect of type of abuse and type of offender predicting type of mental health problem (corrected for ethnic background)

<table>
<thead>
<tr>
<th>CTQ-SF</th>
<th>Alcohol/drug use</th>
<th>Angry-irritable</th>
<th>Depressed/anxious</th>
<th>Somatic complaints</th>
<th>Suicide ideations</th>
<th>Thought disturbance</th>
<th>Traumatic experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>group effect</td>
<td>0.10</td>
<td>-0.20</td>
<td>0.85</td>
<td>0.57</td>
<td>0.60</td>
<td>0.45</td>
<td>0.55</td>
</tr>
<tr>
<td>interaction effect</td>
<td>-0.01</td>
<td>-0.12</td>
<td>0.09</td>
<td>0.11</td>
<td>0.07</td>
<td>-0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>Physical abuse</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>group effect</td>
<td>-0.23</td>
<td>-0.37</td>
<td>0.31</td>
<td>0.07</td>
<td>0.26</td>
<td>0.10</td>
<td>0.03</td>
</tr>
<tr>
<td>interaction effect</td>
<td>-0.09</td>
<td>-0.14</td>
<td>-0.04</td>
<td>-0.02</td>
<td>-0.01</td>
<td>-0.10</td>
<td>-0.07</td>
</tr>
<tr>
<td>Sexual abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>group effect</td>
<td>-0.09</td>
<td>0.83*</td>
<td>0.58</td>
<td>0.16</td>
<td>1.27**</td>
<td>1.19**</td>
<td>0.25</td>
</tr>
<tr>
<td>interaction effect</td>
<td>0.20</td>
<td>-0.87</td>
<td>-0.50</td>
<td>-0.14</td>
<td>-1.32**</td>
<td>-1.21*</td>
<td>-0.17</td>
</tr>
<tr>
<td>Emotional neglect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>group effect</td>
<td>-0.24</td>
<td>-0.15</td>
<td>0.18</td>
<td>0.33</td>
<td>0.18</td>
<td>0.40</td>
<td>0.03</td>
</tr>
<tr>
<td>interaction effect</td>
<td>-0.09</td>
<td>-0.07</td>
<td>-0.05</td>
<td>0.09</td>
<td>-0.03</td>
<td>-0.02</td>
<td>-0.03</td>
</tr>
<tr>
<td>Physical neglect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>group effect</td>
<td>-0.09</td>
<td>-0.07</td>
<td>0.22</td>
<td>0.30</td>
<td>0.74*</td>
<td>0.33</td>
<td>-0.08</td>
</tr>
<tr>
<td>interaction effect</td>
<td>0.35</td>
<td>0.33</td>
<td>0.04</td>
<td>-0.23</td>
<td>-0.58</td>
<td>-0.09</td>
<td>0.29</td>
</tr>
</tbody>
</table>

* p<.01; **p<.001; Note: the β’s are the standardized beta coefficient weights.
Figure 1 | Relationship childhood sexual abuse and suicide ideation in JSOs and non-JSOs

Figure 2 | Relationship childhood sexual abuse and thought disturbance in JSOs and non-JSOs
Chapter 6

As JSOs were more often of native Dutch background than non-JSOs, we conducted multiple linear regression analyses with type of abuse, type of offender, and the interaction effect of type of abuse and type of offender as independent variables, and type of mental health problem as dependent variable, corrected for ethnic background (see Table 3). Sexual abuse was related to angry-irritable problems, suicide ideation, and thought disturbance. Furthermore, physical neglect was related to suicide ideation. Significant main group effects and interaction effects were found for sexual abuse and suicide ideation (see Figure 1), and thought disturbance (see Figure 2), indicating that the relationship between a history of sexual abuse in childhood, and suicide ideation and thought disturbance was significantly different in JSOs than in non-JSOs. For sexual abuse in relation to angry irritable problems, a group effect was prevalent, but the interaction effect did not reach statistical significance.

DISCUSSION

The aim of the current study was to examine the relationship between childhood abuse and mental health problems in juveniles who sexually offended (JSOs) compared to juveniles who offended non-sexually (non-JSOs). Although we did not find any significant differences between JSO and non-JSOs in experiences of childhood abuse or levels of mental health problems, we discovered a stronger relationship between childhood sexual abuse, and suicide ideation and thought disturbance in JSOs than in non-JSOs.

To our knowledge, only one study addressed MAYSI-2 scores in juvenile delinquents who committed sex offenses (i.e., DeLisi et al., 2008). Comparing juvenile offenders with and without a history of sexual offending on the MAYSI-2 scale thought disturbance, they found more thought disturbance problems in juvenile offenders with sex offenses. However, their sample consisted of juveniles committed to the California Youth Authority, whereas our sample comprised offenders in juvenile detention centers. Subsequently, compared to the current study, the study of DeLisi et al. (2008) contained more JSOs. A larger number of JSOs increases the power of the study, increasing the chance to find a significant difference.

In contrast to previous studies (e.g., Seto & Lalumière, 2010), we were not able to find significant differences in history of childhood abuse and current mental health problems between JSOs and non-JSOs. However, our study only included juveniles in juvenile detention centers, whereas the meta-analysis of Seto and Lalumière (2010) included studies with samples throughout the (juvenile) justice system. It has been assumed that the prevalence of mental health problems increases the “deeper” you go into the juvenile justice system (Doreleijers, 2008). Based on prevalence studies of mental health problems in juvenile arrestees (Scholte, 1988), juveniles brought to court (Doreleijers, 1995), juveniles who were forensically assessed at the request of the court (Duits, 1997), and incarcerated juveniles (Vreugdenhil, 2003), Doreleijers (2008) hypothesized that the prevalence of mental health problems in youth increases the “deeper” they go into the juvenile justice system; 90% of the
incarcerated juveniles reported at least on mental disorder (Vreugdenhil, 2003). With such high prevalence rates in general, experiences of childhood abuse or mental health problems could lose their distinctiveness to find statistically significant differences.

Moreover, it can be argued that, given the objective of the present study, the absence of significant differences between JSOs and non-JSOs in childhood abuse and mental health problems is an advantage, as the relationship of childhood sexual abuse and mental health problems in JSOs compared to non-JSOs is not biased by pre-existing differences between both groups. In line with our hypothesis, we found a relationship between sexual abuse and internalizing mental health problems (i.e., suicide ideation and thought disturbance) in JSOs, which we did not find in non-JSOs. In addition, we also found a relationship between sexual abuse in JSOs and externalizing mental health problems (i.e., angry-irritable problems). However, after correction for ethnic background, this relationship was not significantly different from non-JSOs. These results suggest that there is a stronger relation between the degree of sexual abuse and the degree of their internalizing mental health symptoms, and to a lesser extent their externalizing mental health symptoms, in JSOs than there is in non-JSOs.

Our results also showed that ethnic background influences the results when comparing JSOs and non-JSOs. We found that the relationships between sexual abuse and angry-irritable problems, and physical neglect and suicide ideation were no longer significantly different between JSOs and non-JSOs when ethnic background was included into the analysis. To our knowledge, research on mental health problems in subgroups of JSOs based on racial or ethnic differences is scarce. A recently submitted paper on mental health problems, using the MAYSI-2, in a US sample of JSOs and non-JSOs, demonstrated that Caucasian JSOs reported more anger-irritable problems and suicide ideation problems than non-Caucasian JSOs (Boonmann et al., accepted). As two independent samples in two different countries found a race/ethnicity effect on angry-irritable problems and suicide ideations in JSOs compared to non-JSOs, more research on the relationship of childhood abuse and mental health problems in subgroups of JSOs based on the racial or ethnic background is needed to disentangle this complex relationship. More insight in this relationship may improve the treatment of especially non-Caucasian or non-native JSOs.

With regard to the sexually abused sexual abuser hypothesis, we did not find significant differences in experiences of childhood sexual abuse between JSOs and non-JSOs (in contrast to Seto and Lalumière [2010] and Jespersen et al. [2009]). However, we did find a stronger relationship of childhood sexual abuse and internalizing mental health problems (i.e., suicide ideation and thought disturbance) in JSOs than in non-JSOs. This indicates that the link between childhood sexual abuse and sexual antisocial behavior might be influenced by (internalizing) mental health problems. Until today the relationship between internalizing mental health problems and sexual offending behavior is not fully understood. On the one hand, internalizing mental health problems may be the result of previously existing problems with sexuality and/or as a consequence of sexual abuse. On the other hand, internalizing mental health problems could actually be a reaction to the sexual offenses and its consequences and should not necessarily have preceded the sexual offense (Vermeiren, 2003;
Teplin et al., 2002). Hence, as no conclusions can be drawn on the causal relationship between internalizing mental health problems and the sexual offending behavior, it may be relevant to find out whether these internalizing conditions were present before or developed as a consequence of the offense.

Limitations
Findings of this study must be interpreted in the context of some limitations. First, previous research showed that JSOs constitute a heterogeneous group with differences in childhood abuse and mental health problems (‘t Hart-Kerkhoffs et al., 2009; Hunter, Figueredo, Malamuth, & Becker, 2003; Hunter, Hazelwood, & Slesinger, 2000). Especially JSOs with child victims, when compared to JSOs with adolescent/adult victims, show more childhood abuse, especially sexual abuse, and more mental health problems. We did not examine subgroups given that our sample of JSOs constituted only 44 offenders. Second, the juvenile detention centers in the current study only admitted males. Therefore, our results cannot be generalized to female offender populations. Third, the CTQ-SF and the MAYSI-2 are both self-report instruments. Therefore, our results may have been biased due to social desirability. Additionally, as youths were told that their answers would be used for clinical purposes and for evaluation of the interventions they needed, the (lack of) confidentiality could also have influenced our results. Fourth, the current study was cross-sectional and, therefore, causal relationships between childhood abuse and mental health problems could not be established. Longitudinal studies are needed to establish this relationship. Finally, next to mental health problems, other third variables could have influenced the relationship between childhood (sexual) abuse sexual offending behavior, such as genetic predisposition, family factor besides abuse, and peer influences.

Implications
Our results suggest that if a JSO reports mental health symptoms, especially internalizing mental health problems such as suicide ideation and thought disturbance, there is reason to suspect these symptoms are related to childhood abuse or neglect, especially sexual abuse. As internalizing mental health problems are harder to detect than externalizing mental health problems, it is of great importance to assess mental health problems, especially suicide ideation and thought disturbance, in JSOs at entry of juvenile detention centers. Furthermore, as we found a stronger relationship between childhood sexual abuse and internalizing mental health problems in JSOs than in non-JSOs, our results suggest the need for a different focus for treatment of JSOs and non-JSOs. For JSOs, perhaps the treatment needs to focus on dealing with the childhood sexual abuse (e.g., trauma-based therapy). Finally, as there is evidence for the sexually abused sexual abuser hypothesis, treatment of juveniles who have experienced sexual abuse should focus on healthy sexual development and behaviors in order to prevent sexual offending behavior in this at risk group.