

The Prevalence of Child Sexual Abuse in Residential and Foster Care

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Abstract

We investigated the year prevalence of child sexual abuse (CSA) in residential and foster care and compared it with prevalence rates in the general population. We used two approaches to estimate the prevalence of CSA. First, 264 professionals working in residential or foster care (sentinels) reported CSA for the children they worked with ($N = 6,281$). Second, 329 adolescents staying in residential or foster care reported on their own experiences with CSA. Sentinels and adolescents were randomly selected from 82 Dutch youth care facilities. We found that 4.3 per 1000 children had been victims of CSA based on sentinel reports. In addition, 248 per 1000 adolescents reported having experienced CSA. Results based on both sentinel and self-report revealed higher prevalence rates in youth care than in the general population, with the highest prevalence in residential care. Prevalence rates in foster care did not differ from the general population. We conclude that residential placements should remain a last resort. Unfortunately foster care does not effectively protect children against sexual abuse either, and thus its quality needs to be further improved.

Keywords: child sexual abuse, prevalence, residential care, foster care

The Prevalence of Child Sexual Abuse in Residential and Foster Care

Residential care arrangements are typically characterized by frequent shifts and instability of caregivers (Van IJzendoorn et al., 2011), while children in foster care grow up in a relatively stable family environment, although transitions seem to occur more often than would be desirable (Allen & Vacca, 2011; Leslie, Landsverk, Horton, Ganer, & Newton, 2000). Because of the unstable care arrangement, children in residential care may be at increased risk for child sexual abuse, compared to children in foster care. However, it has recently been suggested that residential group rearing should be preferred over foster care (Allen & Vacca, 2011; Whetten et al., 2009). We add to this discussion by examining the prevalence of child sexual abuse (CSA) in residential and foster care, and comparing the prevalence estimates in both types of care with the prevalence of CSA in the general population.

Child Sexual Abuse

CSA is defined here as every form of sexual interaction with a child between 0 and 17 years of age against the will of the child or without the possibility for the child to refuse the interaction. Such interactions can include penetration, molestation with genital contact, child prostitution, involvement in pornography, or voyeurism (Sedlak et al., 2010), and refer to sexual acts by adults as well as peers.

The United Nations Convention on the Rights of the Child (1989) formulates that state parties should take all appropriate measures to protect a child from all forms of violence, maltreatment, or exploitation, including sexual abuse, while the child is in the care of parent(s) or any other person who has the care of the child. To date, this convention has been adopted by 193 parties. However, meta-analytic evidence indicates that CSA is still a global problem with lifetime prevalence rates between 4 per 1000 children for sentinel studies and 127 per 1000 children for self-report studies (Stoltenborgh, Van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011). Among the largest and most comprehensive studies on the prevalence of child maltreatment including CSA are the national incidence studies (NIS; Sedlak, 1991; Sedlak & Broadhurst, 1996; Sedlak et al., 2010). The NIS are periodically conducted in the US since 1979, using reports from professionals working with children and CPS reports to calculate prevalence rates of child maltreatment. The most recent version of this study, the NIS-4 (Sedlak et al., 2010), reports that 180,500 children or 2.4 per 1000 children experienced CSA in 2005/2006. The same sentinel survey methodology was used in combination with self-report by high school students in two Dutch replications of the NIS: The Netherlands' Prevalence Studies of Maltreatment of Youth (NPM-2005: Euser,

Van IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2010; NPM-2010: Alink, Van IJzendoorn, Bakermans-Kranenburg, Pannebakker, Vogels, & Euser, 2011). The most recent version of the NPM (NPM-2010; Alink et al., 2011) showed prevalence estimates of CSA in 2010 in the Netherlands between 0.8 per 1000 children (based on reports from professionals) and 58 per 1000 children (based on self-report).

The majority of CSA victims are female (Pereda, Guilera, Forns, & Gomez-Benito, 2009; Stoltenborgh et al., 2011), while the majority of perpetrators of CSA are male (Sedlak et al., 2010; Romano & De Luca, 2001). Higher prevalence rates among girls may be caused by both the increased number of actual experiences of CSA among girls and by the higher reluctance of boys to disclose CSA experiences. Boys may feel more ashamed about the abuse or fear to be labeled as homosexual (Romano & De Luca, 2001). Typically, and in contrast with other types of maltreatment, literature on CSA includes both intra- and extra-familial perpetrators (Black, Heyman, & Smith Slap, 2000). For instance, the NIS-4 showed that in 40% of the cases the perpetrators of CSA were not the (biological) parents or parents' partners of the child but other people, such as other family members or babysitters (Sedlak et al., 2010).

Child sexual abuse is associated with a variety of short- and long-term negative effects. Victims of CSA are likely to show sexualized behavior and have an increased risk to develop various types of psychological difficulties, such as anxiety, depression, aggression, suicidal ideation, low self-esteem, and school problems (Cutajar, Mullen, Ogloff, Thomas, Wells, & Spataro, 2010; Trickett, Noll, & Putnam, 2011; Tyler, 2002). Furthermore, as compared to non-abused individuals, victims of CSA are at increased risk for recurred sexual victimization and may as parents place their own children at risk for abuse and neglect (Barnes, Noll, Putnam, Trickett, 2008; Trickett, Noll, & Putnam, 2011). The large impact of CSA necessitates protecting children against this type of abuse. This protection is especially important for children who have been removed from the home due to maltreatment experiences, because these children may be more vulnerable for becoming victims of CSA than children living with their (biological) parents (e.g., Benedict, Zuravin, Brandt, & Abbey, 1994).

Residential and Foster Care

When children are abandoned or orphaned, or not properly cared for by their parents, they can be placed out of the home in either residential or foster care. There are indications that children growing up in residential care and foster care have a higher risk of maladaptive

development, such as socio-emotional problems and lower cognitive functioning, than children living in biological families. A study in Greece (Vorria, Rutter, Pickles, Wilkind, & Hobsbaum, 1998) found that 9-11-year-old children in long-term residential care show more emotional and behavioral difficulties, as compared to children raised in a two-parent family. Also, meta-analytic evidence showed that children growing up in residential care have lower IQ scores than children growing up in a family care arrangement (Van IJzendoorn, Luijk, & Juffer, 2008). Although several studies have demonstrated that family-reared children show an improved development compared to institutionalized children, children in foster care are also at risk for cognitive and socio-emotional problems compared to children growing up in their biological families. One of the reasons for this increased risk may be the fact that foster care is often not a stable child rearing arrangement (Allen & Vacca, 2010, Newton, Litrownik & Landverk, 2000; Strijker, Knorth, & Knot-Dickscheit, 2008). Many foster children frequently move from foster home to foster home (Allen & Vacca, 2011), up to 4.2 placements within 1.5 years in the US (Leslie, Landsverk, Horton, Ganer, & Newton, 2000). This does not only mean that foster children are exposed to multiple caregivers and foster families during a short time period, but also that they are confronted with unstable school and peer-related environments.

Although children in both residential and foster care do not develop as well as children growing up with their biological parents, foster children seem to be better off than children in residential care. One of the studies comparing the development of children in institutional care to that of children in foster care is the Bucharest Early Intervention Project (BEIP), in which young institutionalized children were randomly assigned to foster care or to continue institutional care in Romania (e.g., Nelson, Zeanah, Fox, Marshall, Smyke, & Guthrie, 2007; Smyke, Zeanah, Fox, Nelson, & Guthrie, 2010). The impaired developmental outcomes of children in residential care compared to those of children who went to foster families indicate that residential care is detrimental to children's development in virtually all domains, notably the cognitive and socio-emotional domain. Residential care is typically characterized by frequent shifts and instability of caregivers and caregivers may not be as emotionally involved with a child as a (biological) parent would be, since the child will sooner or later leave the institution or the specific group within the institution (Van IJzendoorn et al., 2011). Besides frequent shifts of caregivers, there are also frequent changes in the composition of residential groups, forcing children to forge new peer relationships.

In addition to the delayed development of children in residential and foster care, these children might also be at greater risk for CSA (e.g., Benedict, Zuravin, Brandt, & Abbey,

1994; Hobbs, Hobbs & Wynne, 1999). There are three possible explanations for this increased risk. First, children who have been removed from the home often show emotional and behavioral problems. Such problems may make children more vulnerable and their behavior can elicit further maltreatment. However, Jaffee and colleagues (2004) found that there is a limit to child effects: Difficult and coercive child behavior can provoke corporal punishment, but the occurrence of physical abuse is largely explained by family factors and not by child characteristics. It is however unknown whether this is also the case for CSA. Second, the non-biological relationship between children and their caregivers in residential and foster care may increase the risk for CSA. For example, results of the first Dutch Prevalence study of Maltreatment of Youth (NPM-2005) indicated that children in stepfamilies are at increased risk for maltreatment compared to biological families (Van IJzendoorn, Euser, Prinzie, Juffer, & Bakermans-Kranenburg, 2009). Third, residential groups often have a mixed gender composition, and children with the most severe problem behaviors are frequently placed together in the same group (Colton, 2002; Van IJzendoorn et al., 2011). Without sufficient monitoring of the group interactions by professional caregivers the mixed nature of the residential groups and the severe problem behaviors of the group members may easily trigger peer sexual abuse.

A number of studies examined CSA in youth care and showed high levels in both residential and foster care (e.g. Benedict, Zuravin, Brandt, & Abbey, 1994; Rosenthal, Motz, Edmonson, & Groze, 1991; US Department of Justice, 2010). However, none of these studies compared the prevalence rates of CSA in residential care and foster care. Furthermore, these studies were often based on self-report of children who experienced CSA, and they did not use a randomly selected sample. For instance, Rosenthal and colleagues (1991) examined 290 cases of abuse reported to an advisory committee, and Benedict and colleagues (1994) examined cases of CSA reported to the CPS. This means that only children who were reported to this committee or to the CPS were taken into account, while many non-reported cases were not taken into account.

The Current Study

The prevalence of CSA in residential and foster care has never been systematically examined. The current study addresses this gap, using a random sample of adolescents in residential and foster care reporting on their own experiences with CSA, and professionals working with children reporting on cases of CSA. Furthermore, earlier findings from the NPM-2010 (Alink et al., 2012) applying the same methods are used as a comparison group

from the general population. The research method of the present study is largely similar to the method used in the NPM-2010 (Alink et al., 2012), except for some adjustments to the Dutch youth care system. Therefore, it is possible to compare the prevalence estimates from the current study with the prevalence rate of CSA in the general Dutch population.

The following research questions will be addressed: 1) What is the overall prevalence of CSA in youth care?; 2) Does the prevalence of CSA in residential care differ from the prevalence in foster care?; 3) Do the prevalence estimates of the current study differ from the prevalence of CSA in the general Dutch population?; 4) What are the characteristics of victims and perpetrators of CSA in youth care? It is expected that CSA occurs more often in youth care than in the general population. In addition, because of the greater lack of continuity of care and the group settings in residential care, we expect that the risk for CSA is higher in residential care than in foster care. Given previous finding on the characteristics of victims and perpetrators of CSA, it is expected that girls experience more CSA than boys, while more perpetrators of CSA are male than female. Finally, because both residential and foster care are care arrangements with a number of children living under the same roof, we expect that peers living in the same care arrangement are often perpetrators of CSA.

Method

Participants

Youth care facilities

Both the sentinels and the adolescents were selected from four types of care facilities in the Netherlands: 1) foster care, 2) regular residential care (in which children are free to leave the facility), 3) secure residential care (in which children are not allowed to leave the facility; see Harder, Knorth & Kalverboer, 2012), and 4) juvenile facilities. A list of these four types of Dutch youth care facilities was made based on a publication of all Dutch facilities for youth care (Sociale Kaart Jeugdzorg 2011, 2010).

Of all children who stayed in a Dutch youth care facility in 2010, 52% lived in foster care, 39% in regular residential care, 6% in secure residential care, and 3% lived in a juvenile facility. In order to realize a representative distribution of these types of facilities in our sample, we selected the four types of facilities proportionate to the numbers of children staying in these types of facilities in the Netherlands. This led to the inclusion of all (locations of) foster care ($n = 25$), secure residential care ($n = 15$), and juvenile ($n = 11$) facilities. From the 224 regular residential care facilities, a random selection of 20 facilities was drawn (one facility can consist of multiple locations). After the board of the selected

facility gave permission to participate, a contact person of the facility assisted in randomly selecting professionals and adolescents for the study. In total, 82 locations were asked to participate in the study and 79 locations (96%) agreed to participate.

Sentinels

Professionals from the selected care facilities were sampled based on the following criteria: 1) the employee worked directly with the children staying at the facility (e.g., group care workers) and 2) the employee had been working in a youth care facility since 2010 or before. From each foster care, regular residential care, and juvenile facility, five professionals were randomly selected. From each secure residential care facility two professionals were selected. In all residential facilities (including juvenile facilities), only one professional was selected from each group to prevent professionals reporting on the same group of children. Analogous to the NIS (Creighton, 2002) these selected professionals are called sentinels. To compensate for possible non-response, a similar number of professionals were selected from each facility, but they were only contacted if one or more sentinels in the first group did not participate. In total, 411 sentinels were invited to participate by e-mail, which included a short introduction of the study, a link to the registration form and a link to unsubscribe for participation. Participating sentinels ($n = 264$) received a compensation of ten euros for participation.

Adolescents

Participants of the self-report study were adolescents who stayed in one of the participating care facilities. Adolescents were eligible for participation if they met the following criteria: 1) between 12 and 17 years of age in 2010, 2) stayed in a youth care facility in 2010, and 3) without intellectual disabilities. A random selection from all eligible adolescents was made: 12 adolescents from each regular residential care and juvenile facility, 10 from each foster care facility, and 5 from each secure residential care facility were selected. To compensate for possible non-response, an equal number of adolescents were selected from each facility, but they were only contacted if one or more adolescents in the first group did not participate. All selected adolescents and their legal guardians were informed about the study by mail and asked for permission to participate. In the case of foster care placement, the foster parents were also informed about the study. Adolescents who agreed to participate were visited in their residential care facility or foster home by one or two research assistants. They completed the digital questionnaire on the research assistant's

laptop. After completing the questionnaire, participants received a leaflet with information about possible effects of traumatization and contact information for help or support. Participating adolescents received a compensation of ten euros. In total, 669 adolescents were invited to participate; 341 (51%) adolescents actually participated in the study. Data inspection showed that 12 adolescents had systematic answering tendencies or provided very unlikely answers (e.g. over 100 perpetrators). These adolescents were not taken into account in the analyses, leading to a final sample of 329 adolescents. Somewhat more than half of these participants were male (56%), and they were between 12 and 19 years old at the time of participation ($M = 15.67$; $SD = 1.66$). 46% had at least one parent of non-Dutch origin.

The research protocol of the study was approved by the Ethical Committee of the Leiden University Medical Center.

Measures

Sentinel registration form

The standardized registration form, based on the form used for the NIS (Creighton, 2002), NPM-2005 (Euser et al., 2010), and NPM-2010 (Alink et al., 2012), was digitalized for this study. Sentinels were asked to report on all children for whom they suspected child sexual, physical, or emotional abuse or physical or emotional neglect. The current study focuses on sexual abuse. The form included open-ended questions to describe the abuse and possible injury, and closed-ended questions about characteristics of the child and the perpetrator, the location and period of the maltreatment, and the frequency with which the maltreatment has occurred. Finally, the sentinels were asked to estimate the number of children they had worked with in 2010.

Coding of sexual abuse

The cases of child maltreatment reported by the sentinels were independently coded by six trained coders (including one expert coder who also coded cases in the NPM-2010 study), to decide whether the case qualified as sexual abuse (based on the definitions used in the NPM-2010 [Alink et al., 2011] and the NIS-4 [Sedlak et al., 2010]) and to classify the case in one of five types of sexual abuse: 1) sexual abuse with penetration, 2) sexual abuse with genital contact (without penetration), 3) sexual abuse with physical contact (without genital contact and/or penetration), 4) sexual abuse without physical contact, and 5) other sexual abuse. To determine reliability, the five coders independently double coded 25% of all cases ($n = 89$) with the expert coder. The mean inter-coder reliability (kappa) for sexual

abuse was .95 (98% agreement). The mean inter-coder reliabilities for the different types of sexual abuse were: .86 (98%) for sexual abuse with penetration, .64 (95%) for sexual abuse with genital contact, .74 (96%) for sexual abuse with physical contact, .73 (96%) for sexual abuse without physical contact and .75 (93%) for other sexual abuse. The range in kappas was .59~.96 (93% ~ 98%). All cases were coded separately by two coders. In case of disagreement, the case was discussed to consensus with the expert coder.

Self-report questionnaire

The questionnaire, based on the NPM-2010 (Alink et al., 2012; see also Lamers-Winkelmann, 2007), consisted of questions derived from the Dating Violence Questionnaire (Douglas & Straus, 2006) and the Parent-Child Conflict Tactics Scales (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) that were embedded in a series of questions about unpleasant and nasty incidents (such as bullying), nonviolent discipline by parents (CTSPC; Straus et al., 1998), the social desirability items from the Dating Violence Questionnaire (Douglas & Straus, 2006), and questions about socio-demographical characteristics of the children and their families. In the NPM-2010 four questions were asked about sexual abuse. For the current study, 20 questions about sexual abuse were added (six based on Hamby & Finkelhor, 2000; see also Finkelhor, Hamby, Ormrod & Turner, 2005; Helweg-Larsen, & Larsen, 2006) resulting in a total of 24 items on sexual abuse (e.g., An adult has had sex with me; A child/adolescent under 18 years of age forced me to touch his/her genitals).

If one of the questions about sexual abuse was answered in the affirmative, questions were asked about characteristics of the perpetrator, the location and period of the maltreatment, and the frequency with which the maltreatment has occurred. The sexual abuse questions were grouped into five subcategories (cf. the categories used in the sentinel study): 1) sexual abuse with penetration, 2) sexual abuse with genital contact (without penetration), 3) sexual abuse with physical contact (without genital contact and/or penetration), 4) sexual abuse without physical contact, and 5) other sexual abuse.

Statistical procedures

Prevalence rate

The prevalence rate of child sexual abuse (CSA) was reflected as the proportion of reported cases of CSA in relation to the number of observed children in 2010. To obtain this number, the sentinels' estimates of the numbers of children they worked with in 2010 were

summed. This was done separately for sentinels from foster care and residential care (regular residential care, secure residential care, and juvenile facilities). Prevalence rates for both types of care and for the different types of sexual abuse were calculated with the following formula:

$$X = \frac{C}{Tot_s} * Tot_{pop}$$

In this formula, X represents the prevalence estimate, C is the number of cases of CSA, Tot_s is the number of children observed by the sentinels and Tot_{pop} represents the total number of children in the population (see Table 1). Summation of the absolute prevalence estimates for foster care and residential care leads to the total prevalence rate of CSA in the Dutch youth care system.

The same procedure was used to estimate the prevalence of CSA in the self-report study. In this case, the total number of observed children is equal to the number of adolescents who filled out the questionnaire. However, the proportion was not multiplied by the total population to obtain an absolute prevalence estimate, since we were not able to calculate the total number of children between 12 and 17 years of age who stay in Dutch youth care facilities. To calculate the overall prevalence estimate based on self-report, all 24 items about sexual abuse were taken into account. However, when comparing the prevalence rate in youth care with that found in the NPM-2010, only the four questions used in the NPM-2010 were used. Furthermore, the sample of the NPM-2010 was matched with the sample of the current study based on educational level and ethnicity.

Table 1

Total Number of Participating Sentinels, Number of Reported Children, Sample Size of Children Observed by the Sentinels and Total Population of Children in Dutch Youth Care Facilities, per Type of Facility

Type of facility	Total number of sentinels ¹	Number of reported children	Sample size of observed children	Total population of children in Dutch facilities ²
Foster care	117	8	3,466	24,150
Residential care	153	18	2,815	22,677
Total		26	6,281	46,827

¹ The sentinels from foster care and residential care cannot be summed, because some sentinels reported on both types of care. A total number of 264 sentinels reported on foster care and/or residential care.

² Derived from Jeugdzorg Nederland (2011) and Pleegzorg Nederland (2011).

Confidence intervals

To determine whether prevalence rates were significantly different, Wilson estimates for the 84% confidence interval (84% CI) were calculated around each prevalence estimate (Wilson, 1927; Alink et al., 2011; Euser, Van IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2010; U.S. Department of Justice, 2010; Van IJzendoorn et al., 2007; Moore & McCabe, 1996). Because the data from the sentinels might be clustered, a correction for design effect was applied to the confidence intervals of the sentinel study (Hox, 2002; Kish, 1965). If confidence intervals of two estimates (partly) overlap, the prevalence rates are assumed to be not significantly different (Goldstein & Healy, 1995; Julious, 2004; Payton, Greenstone, & Schenker, 2003).

Results

Sentinel Study

Prevalence rates

The overall prevalence estimate for 2010 and the estimates for the different types of CSA are shown in Table 2. In total, the sentinels reported 26 cases of CSA. Based on the number of observed children and the total population of children in Dutch youth care facilities, the overall prevalence estimate of CSA in youth care facilities (residential and foster care) in 2010 was 201 children or 4.3 (84% CI 2.3 ~ 8.5) per 1000 children.

The overall prevalence estimate of CSA in foster care was 56 children or 2.3 (1.0 ~ 5.6) per 1000 children. In residential care the overall prevalence of CSA was 145 children or 6.4 (4.9~9.3) per 1000 children. Children in residential care were on average somewhat older (89% were 12 years or older) than children in foster care (32% were 12 years or older). To prevent a possible age effect when comparing the two populations, the prevalence estimates were recalculated for children aged 12 years or older. For this age group, the overall prevalence estimate of CSA in foster care (4.6 [1.7~13.9] per 1000) was not significantly different from the estimate in residential care (5.8 [3.1~11.4] per 1000).

Table 2

Prevalence Estimates of CSA in 2010, based on Sentinel Reports: Overall Number of Children Reported by the Sentinels, Prevalence Estimates with 84% Confidence Intervals, and Estimated Absolute Numbers of Abused Children

Type of CSA	Number of reported children ¹	Prevalence estimate (%) ¹	84% CI ²	Estimated number of abused children
Overall prevalence	26	4.3	2.3~8.5	201
Physical contact	20	3.0	1.4~6.8	138
Penetration	7	1.2	0.4~4.2	54
Touch (genitals)	10	1.6	0.6~4.9	76
Touch (not the genitals)	3	0.5	0.2~2.1	24
No physical contact	3	0.5	0.2~2.1	24
Other	5	0.8	0.2~3.7	38

¹ The numbers of children and the prevalence estimates within Overall prevalence (Physical contact, No physical contact, and Other) and within Physical contact (Penetration, Touch [genitals], and Touch [not the genitals]) do not sum to the total, since children can have experienced multiple types of sexual abuse.

² The reported CI is corrected for possible design effect.

Comparison with the general population (NPM-2010)

The second Dutch Prevalence Study of Maltreatment of youth (NPM-2010; Alink et al., 2012) showed that on the basis of sentinel reports 2,796 children or 0.8 (84% CI 0.4 ~1.2) per 1000 children between 0 and 17 years of age had experienced CSA in the Netherlands in 2010. The confidence interval did not overlap with the confidence interval of overall CSA in youth care (2.3~8.5 per 1000), indicating that the prevalence estimate of CSA in Dutch youth care facilities was significantly higher than the prevalence in the entire Dutch population (see Figure 1a). The confidence interval for foster care (1.0~5.6) was partly overlapping with that for the Dutch population; children in foster care did not experience CSA more frequently than children in the general Dutch population in 2010 (Figure 1b). Since in our sample most children in residential care had a minimum age of 12, the prevalence estimates for children aged 12 years or older were compared with that of same age category of the NPM-2010. The prevalence rate of CSA in the general Dutch population was 0.7 (0.4~0.9) per 1000 children aged 12 years or older. The prevalence estimate in residential care (5.8 [3.1~11.4] per 1000) was significantly higher (Figure 1c); children in residential care more frequently experienced CSA in 2010 than children aged 12 years or older in the general Dutch population.

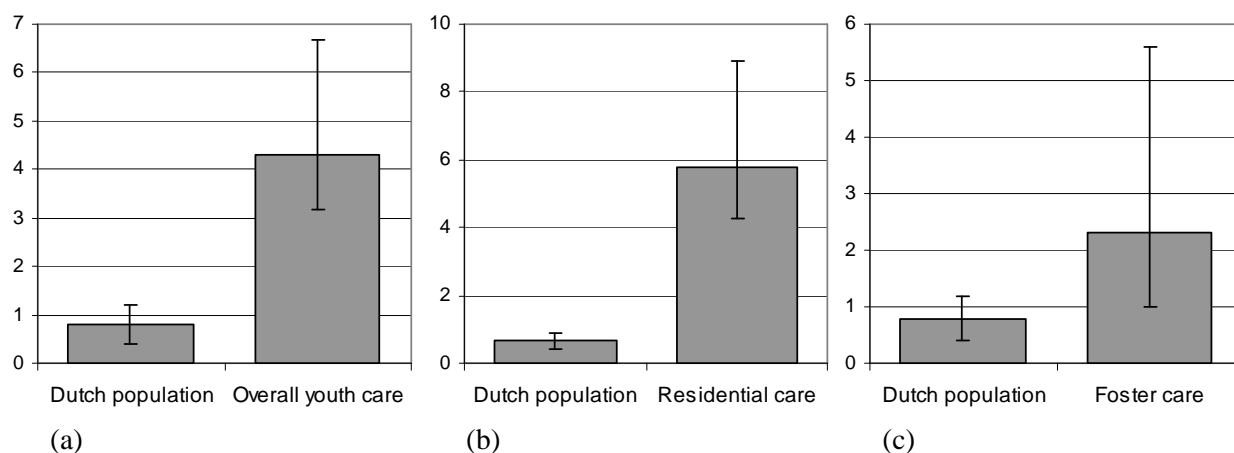


Figure 1. (a) Prevalence estimates (%) of child sexual abuse in 2010 based on sentinel reports in the general Dutch population and overall youth care. (b) Prevalence estimates (%) of child sexual abuse of children with a minimum age of 12 years based on sentinel reports in the general Dutch population and in residential care. (c) Prevalence estimates (%) of child sexual abuse in 2010 based on sentinel reports in the general Dutch population and foster care.

Child characteristics

The sexually abused children reported by the sentinels were between 4 and 17 years of age, 72% were 12 years of age or older, 92% of the reported children were female, 24% had an intellectual disability, and 80% were born in the Netherlands. In the sample of observed children, slightly more than half (52%) were female. A proportion test showed that females more frequently experienced CSA than males ($\chi^2 [1,26] = 21.43; p < .01$).

Perpetrator characteristics

In 60% of the cases of CSA one perpetrator was involved and in all other cases two or more perpetrators were reported by the sentinel. Perpetrators were foster parents (19%), adolescents who stayed in the same residential facility (29%) or foster home (10%), other adolescents (10%), or people who were unknown to the sentinel (32%). Of all perpetrators, 82% were male, 11% were female, and of 7% of the perpetrators the gender was unknown. In 34% of the cases the perpetrator was 21 years old or younger, in 22% of the cases the perpetrator was older than 21 years and in 44% of the cases the age of the perpetrator was unknown.

Self-report study

Prevalence rates

In total 78 adolescents reported at least one type of CSA. This leads to an overall prevalence estimate of sexual abuse in youth care facilities in 2010 or 248 (84% CI 217~286) adolescents per 1000 (see Table 3).

More than half of the adolescents (51%) stayed in residential care, 35% stayed in foster care, and 14% of the adolescents reported that they stayed in both residential and foster care in 2010. There was a significant difference between the overall prevalence estimate of CSA in foster care and residential care (Table 3). Adolescents in foster care (168 [129~230] per 1000) experienced CSA less frequently than adolescents in residential care (280 [236~336] per 1000) or adolescents in both residential and foster care (341 [257~452] per 1000). The difference between residential care and both residential and foster care was not significant.

Table 3

Prevalence Estimates of CSA in 2010 per Type of Sexual Abuse, based on self-report: Sample Size, Overall Number of Adolescents that Reported Sexual Abuse, and Prevalence Estimates with 84% Confidence Intervals

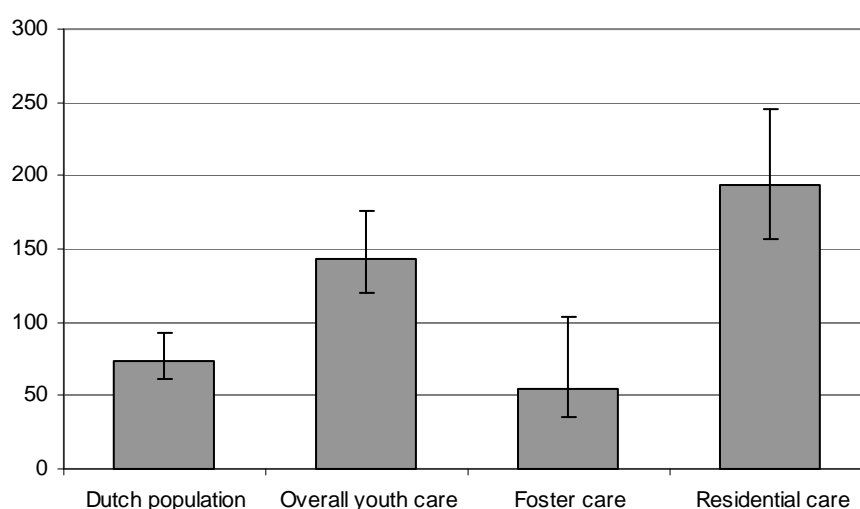
Type of CSA	N ¹	Number of adolescents that report CSA ²	Prevalence estimate (‰) ²	84% BI
Overall prevalence	314	78	248	217~286
Physical contact	314	59	188	161~223
Penetration	315	27	86	68~114
Touch (genitals)	316	39	123	102~154
Touch (not the genitals)	319	27	85	67~112
No physical contact	316	53	168	142~202
Other	312	9	29	20~49

¹ Participants who did not want to answer specific questions are considered missing.

² The numbers of children and the prevalence estimates within Overall prevalence (Physical contact, No physical contact, and Other) and within Physical contact (Penetration, Touch, genitals, and Touch not the genitals) do not sum to the total, since children can have experienced multiple types of sexual abuse.

Comparison with the general population (NPM-2010)

The prevalence estimates based on self-reports from the current study were compared with those from the NPM-2010. To control for possible effects of educational level and ethnicity, a random NPM-sample was selected ($n = 543$) with equal percentages of highly educated adolescents (13%) and adolescents born in the Netherlands (87%) as in the sample of the current study. In this NPM-2010 sample, the prevalence estimate of CSA was 74 (84% CI 61~93) per 1000 adolescents. On the basis of the four items used in the NPM questionnaire, the prevalence of CSA in youth care facilities was 143 (120~176) per 1000 adolescents. Based on self-report measures, the prevalence estimate of CSA in Dutch youth care facilities was significantly higher than in the matched Dutch population (see Figure 2). Similar to the sentinel study, the prevalence estimates in the Dutch population and in foster care (55 [36~104] per 1000; based on the four NPM-items) were not significantly different (Figure 3). However, the prevalence estimate of CSA in residential care (194 [157~245] per 1000 adolescents) was significantly higher than in the Dutch population (Figure 3).



Note. The NPM-2010 and youth care sample are matched on educational level and ethnicity for comparison.

Figure 2. Prevalence estimates (‰) of child sexual abuse in 2010 based on self-report in the Dutch population, youth care, foster care, and residential care.

Adolescent characteristics

Adolescents who reported CSA were between 12 and 19 years of age at the time of participation in the study ($M = 15.73$, $SD = 1.47$), 60% were female, and 49% had at least one parent of non Dutch origin. It should be noted that only adolescents of 12 years or older were selected to participate. Girls reported experiences of overall CSA more frequently than boys ($\chi^2 [1,314] = 10.32$; $p < .01$). No differences were found for age ($F [1,314] = .21$; $p = .65$) or ethnicity ($\chi^2 [2,314] = .83$; $p = .66$) between adolescents who did and who did not report CSA.

Perpetrator characteristics

Nearly half of the adolescents who reported CSA (46%) did not want to report on their relationship with the perpetrator. Furthermore, 13% of the adolescents reported to be sexually abused by their foster parent or another adult member of the foster family, 6% by an employee of the residential facility, 12% by an adolescent from the same foster home, 29% by an adolescent from the same residential facility, 28% by some other adult, and 15% by some other adolescent. Of the adolescents who did report about the perpetrator, 77% reported that at least one of the perpetrators was 21 years of age or younger and 41% reported that at least one of the perpetrators was older than 21 years of age. 72% of the victims of CSA reported that at least one of the perpetrators was male, 32% of the CSA victims reported that at least one of the perpetrators was female, and the gender of at least one of the perpetrators was not reported by 22% of the victims.

Discussion

Children who are placed in youth care experience CSA more frequently than children in the general Dutch population. Based on sentinel reports, a total number of 201 children or 4.3 per 1000 children experienced CSA in youth care in 2010. The separate year prevalence rates for residential care and foster care were 6.4 per 1000 and 2.3 per 1000, respectively. These prevalence rates did not differ significantly. The prevalence estimates based on self-report were considerably higher than those based on sentinel reports: 248 per 1000 children in overall youth care, 168 per 1000 children in foster care, and 280 per 1000 children in residential care. In contrast to the results based on sentinel reports, adolescents in residential care reported significantly more CSA than adolescents in foster care.

To test whether the prevalence of CSA in foster and residential care is different from the prevalence rate in the general population, the findings were compared with the prevalence

rates of CSA found in the NPM-2010 (Alink et al., 2012). As expected, CSA occurs more frequently in youth care, and residential care in particular, than in the general population. There was no difference between the prevalence of CSA in foster care and in the general population. Similar results were found for the sentinel and self-report studies.

The current findings cannot provide any causal explanation for the divergence between residential and foster care so we can only speculate about this. As discussed before, the characteristics of residential care settings may be responsible for a higher prevalence of CSA. It has been suggested that the absence of a biological relationship between the child and the caregiver can increase the risk for CSA (Daly & Wilson, 1994). However, since we only found an elevated risk for children in residential care and not for children in foster care, the absence of a biological relationship cannot be the only risk factor for CSA. Residential care settings have previously been associated with ‘structural neglect’ (Van IJzendoorn et al., 2011). In a care arrangement with a large flow in both caregivers and children, it is difficult for a child to develop and maintain stable relationships with their caregivers and peers. Moreover, children in residential care live in large groups of children that often consist of both boys and girls and children with the most severe problem behaviors are frequently placed together in the same group. This may increase the risk of CSA, also by peers, who were the perpetrator in about half of the cases in the current study.

Based on sentinel reports and self-report of adolescents, girls were more frequently victims of CSA. Since relatively more boys than girls are staying in residential care as compared to foster care, the gender difference cannot account for the higher prevalence rates in residential care. Other studies also found a gender difference in prevalence rates of CSA. A comprehensive meta-analysis on the worldwide prevalence of CSA showed that girls reported CSA more frequently than boys (Stoltenborgh et al., 2011).

The same meta-analysis also reported a large discrepancy between sentinel and self-report prevalence rates (Stoltenborgh et al., 2011). Because of these expected differences between sentinel and self-report both approaches were included in the current study. Indeed, we found large differences between prevalence estimates based on sentinel reports and self-report, with adolescents reporting considerably more CSA than sentinels. One of the explanations for the different prevalence rates is that sentinels only report about cases of CSA that are known to them. CSA is a great taboo and therefore children may not always disclose their experiences to the youth care professionals. The fact that more than half of the

adolescents in our study did not want to report who the abuser was shows that victims of CSA are reluctant to talk about their experiences, even in an anonymous questionnaire. Therefore, it is likely that the cases of CSA reported by professionals are only the top of the iceberg (Creighton, 2002; Stoltenborgh et al., 2011). Furthermore, the prevalence estimate based on adolescent self-report may be an over- or underestimation, since adolescents might interpret questions about different types of sexual abuse differently from what was meant by the researchers (Stoltenborgh et al., 2011). Therefore, the prevalence rates in the current study based on sentinel reports should be considered as a lower bound and those based on self-report as an upper bound; the actual prevalence rate of CSA in residential and foster care may be somewhere in between.

It should also be noted that the current study assessed year prevalence and not life-time prevalence of CSA. The former is generally associated with lower prevalence rates compared to life-time prevalence (Stoltenborgh et al., 2011). This should be kept in mind when interpreting the high year prevalence estimates found in the current study. Only in one year and based on sentinel reports, already over 200 Dutch children placed out of the home experienced CSA. Lifetime prevalence of CSA in residential and foster care would show even higher rates.

Because of the large differences based on methodology, it is not possible to give a reliable absolute number of victims of CSA in residential and foster care. However, and more importantly, we were able to compare our results with those in the general population (Alink et al., 2012), because of similar methods. Comparisons between youth care prevalence rates based on sentinel and self-report on the one hand and general population rates on the other converged. Both approaches showed a higher prevalence of CSA in youth care compared to the general population, and in both approaches this difference was mainly accounted for by the high prevalence estimate in residential care.

The definition used in the current prevalence study included sexual acts by both adults and peers. In about half of the reported cases of CSA by both sentinels and adolescents, the perpetrator was a peer who did or did not stay in the same residential facility or foster home as the victim. Perpetrators in the other cases of CSA were foster parents, employees from residential facilities, or other, unknown adults. Other studies examining CSA in youth care facilities also found that CSA is not only perpetrated by adults (e.g. Hobbs, Hobbs, & Wynne, 1999). An important implication of this finding is that not only child-caregiver relationships in residential and foster care should be closely examined, but peer relationships in residential and foster care need more supervision to prevent CSA.

Some limitations of the current study should be considered. First, branch organizations and management teams of youth care facilities were at first reluctant to participate, which has led to a delay in data collection. This increased the time interval between participation and the period about which the sentinels and adolescents reported CSA, leading to a possible underestimation of the prevalence of CSA. A second limitation pertains to the measurement of CSA. On the one hand, sentinel reports provide valuable information, but it is likely that sentinels are not aware of all cases of CSA. On the other hand, retrospective self-report of children may have limited reliability and validity. Nevertheless, the comparisons with the general population still hold, because the two approaches of the current study were similar to those used to assess CSA in the general population. Results from both approaches converge in that they indicate higher prevalence rates in residential care as compared to the general population.

In light of the current findings we return to the renewed debate about residential and foster care. It has been argued that residential care is a good alternative to foster care and might even be better for the development of children than community rearing (Allen & Vacca, 2011; Whetten et al., 2009). For example Allen and Vacca (2011) state that children in foster care would lag behind in their academic achievements due to the frequent placement changes and the system would fail to prepare children for life after they have aged out of foster care. Instead of the current foster care system, it is proposed to look at properly working residential care settings and implement these as an alternative to foster care (Allen & Vacca, 2011). However, these arguments for residential care as a better alternative to foster care do not hold in light of the increased prevalence of CSA in residential care. Based on our results we can conclude that children are better off in foster care. However, because we have shown that CSA still occurs in foster families, policy should also be directed at improving foster care, such as reducing the number of placements, and optimal support for foster parents taking care of these vulnerable children.

In conclusion, the current findings show that children in residential care are at increased risk for CSA, compared to children growing up in (foster) families. The prevalence of CSA in foster care is not different from the general population. Placement in foster care should therefore be preferred, but not without improvements of its quality. Residential care should be reduced in quantity and only be used as a last resort. Together, these recommendations may result in a safer environment for children who have been removed from their homes.

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