Consequences of Child Maltreatment and Witnessing Domestic Violence and the role of Attachment in Young Children

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Abstract

Background: Child maltreatment and witnessing domestic violence (WDV) can have far-reaching consequences for the child. As a consequence of the violence, the child might experience post-traumatic stress symptoms (PTS symptoms) such as post-traumatic stress, anxiety, sexual concerns, dissociation and anger. First, the present study examined the prevalence of trauma symptoms in a sample of families in The Netherlands. Then differences in age, gender, education and income for child maltreatment, WDV, attachment, and trauma symptoms were examined. It also examined the relationship between child maltreatment and WDV and severity of trauma symptoms and whether attachment between parent and child mediates the relationship between both child maltreatment and WDV and PTS symptoms. Lastly, the study examined whether age and gender differences exist within these relationships.

Method: A group of parents (N = 267), derived from a large-scale study with participants who were suspected of child maltreatment or WDV, completed questionnaires about their children (N = 321). The questionnaires were about child maltreatment between parent and child, domestic violence between parent and partner, attachment between parent and child and PTS symptoms of the child.

Results: As expected, within this sample the amount of post-traumatic stress (29%) was higher compared to the general population (7.4% PTSD in the Dutch population, for children this number is lower, de Vries & Olff, 2009). Overall attachment between parent and child was found to be low; in 78.3% of the score below 4.5. According to Kerns et al. (1996) this reflects an insecure attachment style. Just a few group differences were found. The youngest group of children had a higher level of attachment, the group of 9-12 years old showed more PTS symptoms than the group of 5-8 years old and sexual concerns were found more in girls and in older children. No direct and indirect effects of attachment on the relationship of child maltreatment and WDV with post-traumatic stress has been found. Attachment significantly predicted post-traumatic stress: the lower the attachment, the more post-traumatic stress. Age and gender had no effects on these relationships.

Conclusion: It can be concluded that this study confirms previous findings that child maltreatment or WDV may lead to serious PTS symptoms in children. The study also confirms that children who experience violence at home have a higher risk on developing an insecure attachment with their parents. Future longitudinal research on the consequences of child maltreatment is needed in order to capture developmental changes as they emerge in these children who experience child maltreatment and/or WDV.

Keywords: child maltreatment, witnessing domestic violence, attachment, post-traumatic stress symptoms
Introduction

Children have the right to be protected from being hurt and mistreated, physically, or mentally. Governments should ensure that children are properly cared for and protect them from violence, abuse and neglect by their parents, or anyone else who looks after them (Article 19, International Convention on the Rights of the Child, IRKV, 1989). Child abuse still occurs frequently worldwide, also in The Netherlands. It is estimated that nearly 119,000 children in The Netherlands are victims of abuse each year (Alink et al., 2011). Many researchers define the concept of child abuse in a different way. Moreover, these definitions are constantly adjusted and specified. Defining child abuse is difficult because it is a time-, place-, and culture-related concept. In the Youth Care Act of The Netherlands, the following definition is used, which will be the definition used in this study. Child abuse is: “Any threatening or violent interaction of physical, psychological or sexual nature with a child imposed actively or passively by the parents or other persons with whom the child is in a relationship of dependency or constraint, which causes or is liable to cause serious harm” (as described in Article 1.1 of the Youth Care Act of the Netherlands, 2015). So, this means that child abuse occurs to children under 18 years of age who have a dependent relationship and/or lack of freedom towards those by whom they are maltreated. It can also be a form of domestic violence when the offender is someone from the domestic circle. According to a study from Lammers-Winkelman, Slot and Bijl (2007), more than 100,000 children in The Netherlands are witnessing domestic violence (WDV). As with the definition of child abuse, what defines WDV also differs from one study to another, although common criteria include a child’s visual or auditory witnessing of domestic violence; his or her witnessing of consequences such as injuries, household damage, and police involvement; or the child being otherwise aware of violence in the home (Guterman, 2004; Holden, 1998). This includes witnessing violence that is aimed at the partner, where the minor child is witness to the violence, such as hostility, physical aggression, and extreme anger (McCoy, Cummings, & Davies, 2009; Tierolf, Lünnemann, & Steketee, 2014). WDV can be auditory, visual, or inferred, including cases in which the child perceives the aftermath of violence, such as physical injuries to family members or damage to property. Earlier findings show that even when children are not directly targets of violence in the home, they can be harmed by WDV (Holt, Buckley & Whelan, 2008).

Child-maltreatment and WDV can have far-reaching consequences for the child. A study conducted in the Netherlands, shows that child maltreatment and WDV in the short-term lead to severely disturbed attachment relationships, long-term psychiatric symptoms, and cognitive and neurobiological changes. Child maltreatment is associated with an increased risk of developing depression and anxiety, but also decreased functioning of the working memory (Alink et al., 2011; Baer & Martinez, 2006; Van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Child maltreatment
and WDV is a growing societal issue and has been shown to increase the chance of developing Post-traumatic stress symptoms (PTS symptoms) (Evans, Davies & DiLillo, 2008; Lamers-Winkelman, Willemen, & Visser, 2012; Levendosky, Bogat, & MartinezTorteya, 2013). Symptoms may include avoiding trauma-related places, situations, or people, reliving the traumatic event, sleep problems, attention, and concentration problems (Tierolf et al., 2014), hyperarousal or an exaggerated startle response, and emotional withdrawal (Graham-Bermann & Levendosky, 1998; Kilpatrick & Williams, 1998; Vickerman & Margolin, 2007). Child maltreatment can also lead to anxiety, depression (Nelson et al., 2002), sexual concerns (Briere & Elliott, 2003), dissociation (Neuman, Houskamp, pollock, & Briere (1996) and anger (Briere & Elliott, 2003). Children who witness domestic violence can suffer severe emotional and developmental difficulties that are similar to those of children who are direct victims of child maltreatment (Schecter & Edelson, 1999).

Not all children that face child maltreatment develop PTS symptoms. As with other traumatic events, only a portion of children who experience child maltreatment will develop PTS symptoms and eventually PTSD. In a clinical setting, 26% of physically abused children qualified for PTSD diagnoses; the percentage was higher for girls (50%) than for boys (18%) (Ackerman, Newton, McPherson, Jones, & Dykman, 1998). Interviews with over 4000 adolescents showed lifetime PTSD rates of 15.2% for boys and 27.4% for girls who experienced either physically abusive punishment or physical assault (Kilpatrick, Saunders, & Smith, 2003). Although both males and females experience direct consequences of abuse and domestic violence, they might express it in different ways. Some research shows that boys are more prone to develop externalizing behaviors such as aggression, impulsivity, and defiance in response to abuse, whereas girls are at risk for internalizing problems, including depression, low self-confidence, and social withdrawal (Widom, 1998). Some research suggests that boys are more sensitive than girls to the effects of family violence, although other research contradicts this conclusion (Yates, Dodds, Sroufe, & Egeland, 2003). Relatively few studies have examined gender differences in the long-term outcomes of violence exposure in children. Other research suggests that girls display more PTS symptoms than boys (Green et al., 1992; Telman et al. 2016). Systematic investigations into gender differences in long-term outcomes related to child abuse and WDV are needed (Herrenkohl, Sousa, Tajima, Herrenkohl & Moylan, 2008).

These numbers show that vulnerability to PTS symptoms in victims of violence differs from person to person depending on a variety of factors, for example gender, but also age, parents income level and parental education. The younger the child, the more likely he/she is to be overwhelmed by common occurrences (such as child maltreatment or WDV) that might not affect an older child or adult (Levine & Kline, 2006). Dunn, Nishimi, Powers & Bradley (2017) examined whether age plays a role in the amount of PTS symptoms. They used age groups classified as early childhood (ages 0-5), middle childhood (ages 6-10), adolescence (ages 11-18), and adulthood (ages 19+), on adult psychopathology
in 2892 individuals. They found that participants first exposed to child maltreatment during early childhood had PTS symptoms that were about twice as high as those exposed during later developmental stages. This association was detected even after controlling for sociodemographic characteristics, exposure to other trauma types, and frequency of exposure.

For parental income levels and parental education, research found that the lower the income, and the lower the parental level of education, the more PTS symptoms might occur (Delahanty, Nugent, Christopher & Walsh, 2005).

The current study will focus on to what extent child maltreatment and WDV lead to PTS symptoms and examine whether attachments plays a role in the development of PTS symptoms. It is therefore important to give more information about child maltreatment, WDV, PTS symptoms and attachment.

**Child maltreatment, witnessing domestic violence and trauma in previous research**

Studies that have been done in youth typically focus on child maltreatment apart from childhood exposure to WDV. It is known that child maltreatment and WDV often co-occur; that is, in families in which one form of violence is present, there is an increased risk for the other (Appel & Holden, 1998; Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997; McCloskey, Figueredo, & Koss, 1995; Moffitt & Caspi, 2003; Straus, 1990). Exposure to domestic violence may lead to PTS symptoms in the form of intrusive re-experiencing of the events in dreams or flashbacks, hyperarousal or an exaggerated startle response, and emotional withdrawal (Graham-Bermann & Levendosky, 1998; Kilpatrick & Williams, 1998; Vickerman & Margolin, 2007).

Research done in the Netherlands found that, 5% to 8% of the children out of the Dutch population have a chance of developing PTS symptoms (Tierolf, 2010). A study found that for children who witness domestic violence and/or child maltreatment, this percentage is around 21% (Telman, Overbeek, de Schipper, Lamers-Winkelman, Finkenauer & Schuengel, 2016). Telman and colleagues assessed children’s trauma-related symptoms with the Dutch version of the Trauma Symptom Checklist for Young Children (TSCYC, Tierolf et al. 2013). Children’s PTS symptoms correlated significantly and positively with WDV severity. They did not find that severity of witnessing domestic violence uniquely increased the likelihood of children’s PTS symptoms. According to research done by Lamers-Winkelman and colleagues (2012), this was even 57% in the group of young children, compared with 8% in adolescents.

The extent of overlap in child abuse and children’s exposure to domestic violence makes it difficult to determine whether their longitudinal effects on youth development are distinguishable. Little research has tried to tease out their unique and combined effects, particularly given the range of adverse outcomes known to relate to these forms of early trauma. In addition, few studies have
examined whether abuse and exposure to WDV affect boys and girls in the same way, despite the interest in gender differences (Edleson, 1999; Herrenkohl, Sousa, Tajima, Herrenkohl & Moylan, 2008; Maughan & Cicchetti, 2002). Therefore, this study aims to address this gap and examines to what extent gender differences occur.

Child maltreatment, witnessing domestic violence and attachment

Bowlby’s (1969) Theory of Attachment emphasizes the foundational role of healthy parent–child relationships and the importance of these relationships for children’s healthy development over the long term (Bowlby, 1969). Children who experience child maltreatment and/or WDV are likely to form insecure attachment with their caregivers and maintain insecure attachment styles in adulthood (Morton and Browne, 1998). Muller, Sicoli, and Lemieux (2000) observed that 76% adult survivors of childhood violence (including WDV and child maltreatment) were insecurely attached (compared to 42% and 53% in nonclinical samples; Bartholomew & Horowitz, 1991; van IJzendoorn & Bakermans-Kranenburg, 1996). In a 20-year longitudinal study, Waters, Merrick, Treboux, Crowell, and Albersheim (2000) found that negative life events such as child maltreatment and WDV significantly explained changes from a secure to an insecure attachment classification.

According to Bowlby and other attachment researchers, early (secure) attachments allow children to explore the surrounding environment, to learn skills of engagement, and to develop confidence in their own ability to thrive independent of others (Davies & Martin, 2014). Strong, secure attachments aid in the development of internal working models of the self and others that provide a young child with current and future relationship goals and expectancies. Experiencing child maltreatment and/or WDV might threaten a secure attachment. As a result, a child might lack a feeling of safety and security at home. When witnessing domestic violence, children might feel very insecure. Children might feel intense emotional responses when seeing the violence, such as intense terror, fear of death, and fear of loss of a parent, which leads to negative feelings. Children may feel rage, guilt, and a sense of responsibility for the violence (Groves, Zuckerman & Marans, 1993). Child maltreatment and WDV violence may invoke in children feelings of helplessness and they may come to see the world as unpredictable, hostile, and even threatening (Groves, Zuckerman & Marans, 1993). Children who experienced violence have a higher chance of having a poor attachment with their caregiver(s) and are also more vulnerable to experiencing PTS symptoms (Bowlby, 1969). Earlier research in the Netherlands has focused on the role of attachment in the relationship between childmaltreatment/WDV and PTS symptoms and this study also aims to address this gap.
Aims and research question of the study
Past research has provided initial support for the impact of child maltreatment and WDV on post-traumatic stress, but to the best of our knowledge no studies have examined the combined effects. Nor have they investigated whether attachment is a potential mediator and age and gender a potential moderator on the relationship between child maltreatment and post-traumatic stress, especially in The Netherlands. In this study we therefore extend prior research in this area and examine the impact child maltreatment and WDV have on trauma symptoms, while looking at attachment as a mediator and age and gender as moderators. In this study, the main question is about the post-traumatic stress, but explorative relationships with other trauma symptoms will also be analyzed. Specifically, the aims of the study are to: 1) examine the prevalence of trauma symptoms in a sample of families in The Netherlands who were registered for suspicions of child abuse or WDV; 2) examine differences in age, gender, education and income for child maltreatment, WDV, attachment, and trauma symptoms; 3) examine the relationship between child maltreatment and WDV and severity of trauma symptoms; 4) examine whether attachment is a potential mediator for the relationship between child maltreatment and trauma symptoms or WDV and trauma symptoms; 5) examine whether age and gender are potential moderators for the relationships between child maltreatment and trauma symptoms or WDV and trauma symptoms.

Figure 1. Expected mediation model of attachment on the relationship of child maltreatment and witnessing domestic violence and post-traumatic stress.
**Method**

**Sample**

Data for the current study was derived from a large-scale longitudinal study by the Verwey-Jonker Institute. This longitudinal study aims to gain more insight into how the intergenerational transmission of violence can be prevented. Eligibility criteria for study participants includes people who were in the database of the organization ‘Veilig Thuis’ and had at least been reported in that database once for partner violence or child abuse. ‘Veilig Thuis’ is the advice and reporting center for domestic violence and child abuse in The Netherlands. These are regional organizations where victims, perpetrators and bystanders can turn to receive help and advice. All cases in the database that met the inclusion criteria, were selected if they: 1) belonged to a family in which partner violence or child maltreatment has occurred; 2) belonged to a family with at least one child between 3 and 18 years old and 3) both child(ren) and parent(s) had a good level of Dutch language to fill in the questionnaires themselves. Participants and possibly their partner and/or children who participated were followed for a year and a half from the moment of registration. The study has three waves: T0, T1 and T2. T0 takes place at the start of the process, T1 takes place after one year and T2 after one and a half year. The families are asked to complete a questionnaire at these three measurement moments. The parent that takes care of the children, completes questionnaires for their children. From eight years on, children and young adolescents are asked to fill in a questionnaire themselves.

For this study, data was used from wave T0, because data from T1 and T2 is not complete at the time of writing this paper. In addition, only data from the young children (3-12 years old) was used, due to two reasons. First, the children older than 12 years old filled in other questionnaires than the group of young children, which made it hard to compare these data. Second, more than 50 percent of the answers in the older group were missing. T0 participants consisted of 267 parents who filled in the
questionnaires for 321 children. This study has been ethical approved by the ethical review board of the Verwey-Jonker institute.

**Procedure**
After a participant decided to participate, an appointment was scheduled. During the appointment the researcher went to the house of the participant where the participant and the partner completed the questionnaires via the laptop of the researcher. Participants got access to the questionnaires by entering a website and using a code and password provided by the researcher. The data was only accessible to the researchers. After logging in, all the questionnaires appeared on the screen and the participants could fill in the questionnaire independently. The participant was told that the questions could be very personal but that it is important that the participant fills it in honestly. Filling in the questionnaires took approximately 1.5 hours. While the participant was filling in the questionnaires, the researcher was sitting in the room in case the participant had questions. After completion of the questionnaires the participant received a fee of 20 euro’s.

**Materials/Measures**
The large-scale longitudinal study by the Verwey-Jonker Institute contained several questionnaires. For current research, only questionnaires related to the research question were analyzed. Specifically, all data regarding child maltreatment, domestic violence, trauma, and attachment.

**Prevalence of Child maltreatment according to the parent — The Parent-Child Conflict Tactics Scale (CTSPC; Straus et al., 1998)** is a revision of an epidemiological survey of family violence, the Conflict Tactics Scale and was used to measure the extent to which caregivers use reasoning and nonviolent discipline, verbal aggression, or physical aggression in response to the behavior of the child/adolescent. There are 22 items where parents are asked how often they have carried out various specific nonviolent and violent parent-child interactions in the past year. Response options ranged from “this has never happened (0)”; “once in the past year (1)”; “twice in the past year (2)”; “3–5 times in the past year (3)”; “6–10 times in the past year (4)”; “11–20 times in the past year (5)”; “more than 20 times in the past year (6)”; “not in the past year, but it happened before (7)”. Responses are scored based on the frequency range reported by the parent: responses of 0, 1, and 2 correspond to scores of 0, 1, and 2, respectively; a score of 4 (the midpoint) is assigned for a parent selecting the 3–5 times category; a score of 8 is assigned to the 6–10 times category; a score of 15 is assigned for the 11–20 times category; and a score of 25 is given for the final category, 20 or more times in the past year. Thirteen of the 22 CTSPC items directly address varying levels of physical tactics applied toward children, comprising a subscale entitled Physical Assault (with subcategories of corporal punishment, severe abuse, and extreme abuse). The Physical Assault subscale taps behaviors that range from spanking, slapping, or pinching up to beating or burning. In addition to the Physical Assault subscale, four items of the CTSPC comprise the Non-Violent Discipline subscale (including such actions as
removal of privileges and “time-out”) and five items contribute to the Psychological Aggression subscale (involving such behaviors as verbal threats and yelling). When scored these items are broken down into 3 scales (Non-Violent Discipline, Psychological Aggression, and Physical Assault). For this study only the Physical Assault (13 items) and Psychological Aggression (5 items) scales will be used. The combination of the two scales (physical assault and psychological aggression) will provide a total score for physical and psychological abuse taken together. The total score consists of the sum of the scores on the 18 items and the range is from 0 to 450. In this study the Cronbach’s alpha for the scale physical assault was .71 and for psychological aggression .81.

Degree of Witnessing domestic violence according to parents– The Revised Conflict Tactics Scale (CTS2) was used to measure the degree of domestic violence. CTS2 measures the extent to which partners are involved in physical and psychological violence against each other in the year prior to completing date, from the perspective of the respondent. The CTS2 was developed by Straus, Hamby, Boney-McCoy, & Sugarman (1996) and translated into Dutch by Lamers-Winkelman (2005). The questionnaire consists of different scales: negotiation, psychological violence, physical violence, sexual coercion, and injury. The subscales physical violence and psychological violence were used in the current study. The used subscales consisted of 20 items. This concerns both the violence that the respondent has used himself and the violence of the partner. There are eight items about psychological violence and twelve items about serious and less serious physical violence. An example of a question from the physical violence subscale is: ‘I kicked my (ex-) partner’ or ‘My (ex-) partner kicked me’. An example of a question from the subscale psychological violence is: ‘I have offended my (ex-) partner or cursed him / her’ or ‘My (ex-) partner insulted me or swore against me’. The questionnaire uses a Likert scale from 1 (this never happened) to 8 (more than 20 times in the past year). The responses are scored the same way as the CTSPC; responses of 0, 1, and 2 correspond to scores of 0, 1, and 2; a score of 4 (the midpoint) is assigned for a parent selecting the 3–5 times category; a score of 8 is assigned to the 6–10 times category; a score of 15 is assigned for the 11–20 times category; and a score of 25 is given for the final category, 20 or more times in the past year. To sum up the total scores, the items of each subscale were summed up and then the two total scores of the two subscales were also summed up. The summed scale scores (psychological and physical violence) show the degree of violence. The range of total scores is from 0 to 500. The total scale of violence has a Cronbach’s alpha of .90 (O’Leary, Malone and Tyree, 1994). In this study the Cronbach’s alpha for psychological violence was .73 and for physical violence .76. For the subscales together, the Cronbach’s alpha was .78.

PTS symptoms – The Trauma Symptom Checklist for Young Children (TSCYC) was used to assess PTS symptoms in young children (3-12 years), which was filled in by parents. The Dutch translated version was used (Tierolf & Lamers-Winkelman, 2014). The questionnaire consists of 90 items in which
the parents are asked to indicate on a Likert scale from 0 (not) to 4 (very often) how often something happened in the previous month. In the questionnaire, symptoms are discussed that may be possible reactions children display after a traumatic event. An example of an item is: “has bad dreams or nightmares”, ”lives in one fantasy world “,” intensely destroys things”. The questions are broken down into six clinical subscales: Anxiety (9 items), Depression (9 items), Post-traumatic stress total (27 items), Sexual concerns (9 items), Dissociation (9 items) and Anger (9 items). These clinical subscales are all symptoms children might experience after a trauma. In this study the sum of each subscale will be used, where a higher score on the clinical scales indicates more trauma symptoms. T-scores were calculated for all the trauma scales. A cut-off point of 65 is used for all the trauma scales, with T-scores starting at 65 indicating a clinical score for trauma symptoms (Lamers-Winkelman et al., 2012). The cut-off point was retrieved by first calculating sum scores of the total scores, then distributions of scores were compared between clinical and non-clinical groups. The mean score of the norm population was 50 with a standard deviation of 10 for all scales based on the differences between age and gender groups and the distribution of raw scores (Briere, 2005). All the scores above 65 therefore indicate a clinical score. For this study the subscale Post-traumatic stress is used as main scale to answer the main research questions and to get more insights in the other PTS symptoms, the other scales were also analyzed.

The Cronbach’s alphas of the Post-traumatic stress scale in a Dutch sample was .92, for the scale Anxiety .78, for Depression .85, for Sexual concerns .90, Dissociation .86 and Anger .86. (Tierolf, Schuengel & Lamers-Winkelman, 2018). In the current study the alpha of the Post-traumatic stress scale was .94. The Cronbach’s alpha for the scale Anxiety was .81, for Depression .89, for Sexual concerns .80, Dissociation .88 and Anger .91.

Attachment according to the parent – The Kerns Security Scale (KSS; Kerns, Klepac & Cole, 1996) has been used to assess the level of attachment between parent and child. The KSS was filled in by parents. The scale is based on the attachment theory and focuses on (a) the extent to which children experience the attachment to the parent as responsive and available, (b) the extent to which the child tends to seek support from the parent in times of stress; and (c) the extent to which the child enjoys and appreciates communication with the parent. Bowlby (1982) identified these as three key components of attachment in middle childhood. The KSS has been translated to Dutch by Verschueren and Marcon (2002) and consists of 15 items. An example of such an item is ‘My child trusts me’. The items are rated on a 5-point scale and parents must indicate to what extent they agree with the sentence by choosing the 5 options from ‘totally disagree’ to ‘totally agree’. Responses are summed up, and the mean calculated so that children receive a score on a continuous dimension of security, with higher scores indicating more secure attachment. Also, Kerns et al. (1996) suggested a cut off
score of 4.5 for the differentiation of secure and insecure attachment style. A score of 4.5 and below reflects an insecure attachment style, whereas a score above 4.5 reflects a secure attachment style.

In studies examining children ranging in age from 10 to 12, the KSS showed a Cronbach’s alpha of .93 (Lieberman, Doyle & Markiewicz, 1999). In the current study the alpha was .75.

**Statistical analyses**

Statistical analyses were performed using IBM SPSS 20 (2012).

First, descriptive statistics were computed in order to see what the general results were and what the sample consists of. This was done by retrieving the minimum, maximum, mean and standard deviation for each questionnaire.

Descriptive statistics for gender, age, education, and income were provided for child maltreatment, WDV, attachment and all trauma symptoms. Differences between those groups were tested with ANOVAs. Bonferroni post hoc tests were used to test whether the differences between the groups were significant.

Univariate correlations were computed between all the relevant variables (child maltreatment, domestic violence, trauma and attachment). To test whether attachment is a mediator on the relationship of child abuse and WDV and all trauma symptoms, the PROCESS model of Preacher and Hayes (2008) was used. First *child maltreatment* was inserted as independent variable, the PTS symptom as dependent variable and *attachment* as mediator. After that, the same analysis was performed however in this analysis *WDV* was inserted as independent variable, the PTS symptom as dependent variable and *attachment* as mediator. Finally, the combination of the two independent variables was inserted with *WDV* and *child maltreatment* as independent variables, the PTS symptom as dependent variable and *attachment* as mediator. The same analyses were performed for each of the trauma symptom.

To test whether age and gender are moderators on the relationship of child abuse and WDV and post-traumatic stress symptoms, the PROCESS model of Preacher and Hayes (2008) was used. This was done by looking at the interaction effect between *child maltreatment* (predictor) and *age/gender* (moderator) and whether that effect significantly predicted post-traumatic stress (outcome variable). The same regression was computed for WDV, by replacing *child maltreatment* with WDV. The analyses were done by again using PROCESS (Preacher and Hayes, 2008), because it standardized all variables to avoid multicollinearity and it also does the centering and interaction terms automatically.
Results

Descriptive statistics

To participants consisted of 276 parents who filled in the questionnaires for 321 children. To get a better perception of the sample, the means, standard deviations, frequencies, and percentages were calculated. The mean age of the children was 7.09 (range 3 – 12). Most children had Dutch parents (74.1%). The majority of the participants who filled in the questionnaires were mothers (77.5%). Participant characteristics, both from children and parents are presented in Table 1.

Then descriptive statistics of all dependent variables were computed. Table 2 shows the results. When looking at the total scores, the results show that 29.3% of the children had clinical post-traumatic stress (T-score > 65 on the TSCYC). For the other trauma symptoms normal to low levels of clinical anxiety, depression, sexual concerns, dissociation and anger were found.

A noteworthy finding is that in 47% of the cases child maltreatment at least once was reported. For WDV, all the parents reported that their children witnessed domestic violence more than once (no 0 results were found within this sample), and a mean score of 96.90 was found. In this sample the mean score on attachment is 4.1. Moreover, 78.2% of the scores for the attachment between parent and child was below 4.5. According to Kerns et al. (1996) this reflects an insecure attachment style.

Table 1. Characteristics sample cohort (N = 267 for parents and N = 321 for children)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Children</th>
<th>Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (M, SD)</td>
<td>7.09 (7.0)</td>
<td>-</td>
</tr>
<tr>
<td>Age (n, %)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>&lt;18 years</td>
<td>-</td>
<td>4 (1.5%)</td>
</tr>
<tr>
<td>18-24 years</td>
<td>-</td>
<td>10 (3.7%)</td>
</tr>
<tr>
<td>25-34 years</td>
<td>-</td>
<td>101 (37.8%)</td>
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<td>35-44 years</td>
<td>-</td>
<td>107 (40.1%)</td>
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<tr>
<td>45-54 years</td>
<td>40 (15.0%)</td>
<td>5 (1.9%)</td>
</tr>
<tr>
<td>55+ years</td>
<td>5 (1.9%)</td>
<td>-</td>
</tr>
<tr>
<td>Gender (n, %)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>156 (48.6%)</td>
<td>60 (22.5%)</td>
</tr>
<tr>
<td>Female</td>
<td>165 (51.4%)</td>
<td>207 (77.5%)</td>
</tr>
<tr>
<td>Income, SES (n, %)</td>
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<td></td>
</tr>
<tr>
<td>&lt;1.500</td>
<td>-</td>
<td>149 (55.8%)</td>
</tr>
<tr>
<td>1.500 – 3.100</td>
<td>-</td>
<td>95 (35.6%)</td>
</tr>
<tr>
<td>&gt; 3.100</td>
<td>-</td>
<td>23 (8.6%)</td>
</tr>
<tr>
<td>Education (n, %)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>-</td>
<td>28 (10.5%)</td>
</tr>
<tr>
<td>Mavo, Lbo</td>
<td>-</td>
<td>61 (22.8%)</td>
</tr>
<tr>
<td>Havo, vwo</td>
<td>-</td>
<td>110 (41.2%)</td>
</tr>
<tr>
<td>Hbo, wo</td>
<td>-</td>
<td>51 (19.1%)</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>17 (6.4%)</td>
</tr>
</tbody>
</table>

Table 2. Minimum, maximum, mean and standard deviation of child maltreatment, witnessing domestic violence, attachment, and PTS symptoms (N = 298)

<table>
<thead>
<tr>
<th>Variable</th>
<th>T-score &gt; 65 (%)</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
</table>

13
Consequences of Child Maltreatment and Witnessing Domestic Violence and the role of Attachment in Young Children

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of child maltreatment</td>
<td>0.00</td>
<td>114.00</td>
<td>6.89</td>
<td>14.85</td>
</tr>
<tr>
<td>Witnessing domestic violence</td>
<td>8.00</td>
<td>341.00</td>
<td>96.90</td>
<td>64.27</td>
</tr>
<tr>
<td>Attachment</td>
<td>1.67</td>
<td>5.00</td>
<td>4.1</td>
<td>0.49</td>
</tr>
<tr>
<td>Post-traumatic stress</td>
<td>29.3</td>
<td>41.00</td>
<td>110.00</td>
<td>56.55</td>
</tr>
<tr>
<td>Anxiety</td>
<td>12.1</td>
<td>40.00</td>
<td>110.00</td>
<td>55.14</td>
</tr>
<tr>
<td>Depression</td>
<td>11.5</td>
<td>43.00</td>
<td>110.00</td>
<td>54.80</td>
</tr>
<tr>
<td>Sexual concerns</td>
<td>1.2</td>
<td>46.00</td>
<td>110.00</td>
<td>49.33</td>
</tr>
<tr>
<td>Dissociation</td>
<td>8.4</td>
<td>42.00</td>
<td>110.00</td>
<td>52.49</td>
</tr>
<tr>
<td>Anger</td>
<td>6.9</td>
<td>41.00</td>
<td>110.00</td>
<td>52.37</td>
</tr>
</tbody>
</table>

Group differences

For groups based on gender, age, education and income, differences in mean scores are reported for child maltreatment, WDV, attachment and trauma symptoms in tables 3 and 4. Differences between those groups were tested with ANOVAs. Just a few significant differences were found. Significant differences were found for age and attachment; post hoc tests using the Bonferroni correction revealed that attachment in the youngest age group (<5 years old) was higher than attachment in the oldest group (9-12 years old).

Results for trauma symptoms are reported in table 4. For post-traumatic stress, significant differences were found for age; post hoc tests using the Bonferroni correction revealed that the age group of 9-12 years old showed more post-traumatic stress than the group of children younger than 5 years old.

A few differences were found in age, gender, education and income for child maltreatment, WDV, attachment, and trauma symptoms. Only significant results were found for age and sexual concerns, post hoc tests using the Bonferroni correction revealed that the oldest group (9-12 years old) reported more sexual concerns than the middle group (5-8 years old). Lastly, a significant difference was found for gender and sexual concerns, with girls reporting more sexual concerns than boys.

Correlations between variables

Next, univariate correlations were calculated to examine relationships among child maltreatment, WDV, trauma and attachment, presented in Table 5. Child maltreatment showed no significant correlation with post-traumatic stress, but only shows a significant weak negative correlation with attachment and a weak positive correlation with anger. For WDV, only a significant low correlation was found between WDV and anxiety. No other significant correlations were found between WDV and other variables. Low significant correlations were found between attachment and all the trauma scales. Lastly, moderate to high significant correlations were found between post-
traumatic stress and all the other trauma symptom scales (anxiety, depression, sexual concerns, dissociation and anger).
Table 3. Mean scores for gender, age, education and income among child maltreatment, witnessing domestic violence and attachment

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Child maltreatment M (SD)</th>
<th>p</th>
<th>Witnessing domestic violence M (SD)</th>
<th>p</th>
<th>Attachment M (SD)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>149</td>
<td>7.66 (16.21)</td>
<td>.93</td>
<td>93.15 (62.15)</td>
<td>4.12 (0.45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>154</td>
<td>6.14 (13.40)</td>
<td>.37</td>
<td>100.50 (66.25)</td>
<td>.33</td>
<td>4.12 (0.53)</td>
<td>.97</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>115</td>
<td>8.99 (18.57)</td>
<td>.37</td>
<td>106.76 (62.02)</td>
<td>.33</td>
<td>4.12 (0.44)</td>
<td></td>
</tr>
<tr>
<td>5-8 years</td>
<td>92</td>
<td>5.17 (10.19)</td>
<td></td>
<td>93.39 (65.37)</td>
<td></td>
<td>4.12 (0.55)</td>
<td></td>
</tr>
<tr>
<td>9-12 years</td>
<td>96</td>
<td>6.01 (13.36)</td>
<td>.14</td>
<td>89.56 (64.99)</td>
<td>.13</td>
<td>4.03 (0.48)</td>
<td>.04</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>28</td>
<td>6.32 (16.10)</td>
<td></td>
<td>83.92 (48.67)</td>
<td></td>
<td>4.25 (0.39)</td>
<td></td>
</tr>
<tr>
<td>Mavo, LBO</td>
<td>59</td>
<td>2.73 (4.49)</td>
<td></td>
<td>78.38 (54.42)</td>
<td></td>
<td>4.11 (0.46)</td>
<td></td>
</tr>
<tr>
<td>Havo, vwo, mbo</td>
<td>108</td>
<td>9.37 (18.88)</td>
<td></td>
<td>104.12 (72.47)</td>
<td></td>
<td>4.10 (0.53)</td>
<td></td>
</tr>
<tr>
<td>Hbo, wo</td>
<td>49</td>
<td>5.59 (9.49)</td>
<td>.07</td>
<td>103.78 (57.71)</td>
<td>.06</td>
<td>4.16 (0.41)</td>
<td>.49</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; €1.500</td>
<td>142</td>
<td>7.66 (17.34)</td>
<td>.34</td>
<td>99.80 (70.43)</td>
<td></td>
<td>4.16 (0.44)</td>
<td></td>
</tr>
<tr>
<td>€1.500 - €3.100</td>
<td>94</td>
<td>5.11 (9.89)</td>
<td></td>
<td>84.13 (52.58)</td>
<td></td>
<td>4.13 (0.48)</td>
<td></td>
</tr>
<tr>
<td>&gt;€3.100</td>
<td>23</td>
<td>5.83 (8.63)</td>
<td>.40</td>
<td>102.10 (50.80)</td>
<td>.16</td>
<td>4.06 (0.63)</td>
<td>.64</td>
</tr>
</tbody>
</table>

Note. For gender male = 0 and female = 1.
For education the option other is deleted.
Distributions between groups were tested with ANOVA.
### Table 4. ANOVA results for gender, age, education and SES among post-traumatic stress, anxiety, depression, sexual concerns, dissociation and anger

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Post-traumatic stress</th>
<th>p</th>
<th>Anxiety</th>
<th>p</th>
<th>Depression</th>
<th>p</th>
<th>Sexual concerns</th>
<th>p</th>
<th>Dissociation</th>
<th>p</th>
<th>Anger</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>143</td>
<td>55.18 (15.44)</td>
<td>54.72</td>
<td>(13.57)</td>
<td>53.91</td>
<td>(14.71)</td>
<td>48.02</td>
<td>(3.87)</td>
<td>51.70</td>
<td>(12.20)</td>
<td>52.68</td>
<td>(12.71)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>154</td>
<td>57.82 (15.90)</td>
<td>55.53</td>
<td>(14.86)</td>
<td>55.66</td>
<td>(14.63)</td>
<td>50.58</td>
<td>(10.81)</td>
<td>53.24</td>
<td>(14.18)</td>
<td>52.08</td>
<td>(13.90)</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>114</td>
<td>54.04 (13.42)</td>
<td>54.57</td>
<td>(13.52)</td>
<td>53.23</td>
<td>(12.81)</td>
<td>49.06</td>
<td>(8.69)</td>
<td>50.71</td>
<td>(12.11)</td>
<td>52.41</td>
<td>(13.06)</td>
<td></td>
</tr>
<tr>
<td>5-8 years</td>
<td>93</td>
<td>55.72 (14.55)</td>
<td>53.99</td>
<td>(13.66)</td>
<td>53.81</td>
<td>(13.61)</td>
<td>48.03</td>
<td>(3.99)</td>
<td>53.14</td>
<td>(13.53)</td>
<td>51.10</td>
<td>(11.49)</td>
<td></td>
</tr>
<tr>
<td>9-12 years</td>
<td>90</td>
<td>60.60 (18.65)</td>
<td>57.02</td>
<td>(15.57)</td>
<td>57.84</td>
<td>(17.39)</td>
<td>50.99</td>
<td>(10.53)</td>
<td>54.05</td>
<td>(14.19)</td>
<td>53.62</td>
<td>(15.24)</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>28</td>
<td>54.39 (14.77)</td>
<td>51.53</td>
<td>(9.75)</td>
<td>50.46</td>
<td>(10.08)</td>
<td>48.73</td>
<td>(6.76)</td>
<td>49.75</td>
<td>(9.50)</td>
<td>48.54</td>
<td>(7.21)</td>
<td></td>
</tr>
<tr>
<td>Mavo, LBO</td>
<td>56</td>
<td>54.27 (15.70)</td>
<td>53.12</td>
<td>(14.08)</td>
<td>53.88</td>
<td>(15.17)</td>
<td>49.71</td>
<td>(6.75)</td>
<td>50.79</td>
<td>(13.41)</td>
<td>50.38</td>
<td>(8.70)</td>
<td></td>
</tr>
<tr>
<td>Havo, vwo, mbo</td>
<td>109</td>
<td>56.39 (14.67)</td>
<td>55.16</td>
<td>(14.22)</td>
<td>53.40</td>
<td>(12.89)</td>
<td>49.34</td>
<td>(9.18)</td>
<td>52.69</td>
<td>(13.90)</td>
<td>52.33</td>
<td>(13.02)</td>
<td></td>
</tr>
<tr>
<td>Hbo, wo</td>
<td>51</td>
<td>55.35 (14.89)</td>
<td>55.16</td>
<td>(12.62)</td>
<td>55.82</td>
<td>(15.05)</td>
<td>47.39</td>
<td>(2.41)</td>
<td>52.80</td>
<td>(13.68)</td>
<td>51.33</td>
<td>(12.61)</td>
<td></td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1.500</td>
<td>144</td>
<td>57.24 (15.87)</td>
<td>55.04</td>
<td>(14.66)</td>
<td>53.90</td>
<td>(13.74)</td>
<td>49.52</td>
<td>(9.18)</td>
<td>52.14</td>
<td>(14.22)</td>
<td>51.43</td>
<td>(12.44)</td>
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<tr>
<td>1.500 - 3.100</td>
<td>94</td>
<td>54.20 (14.21)</td>
<td>53.86</td>
<td>(11.73)</td>
<td>53.71</td>
<td>(14.26)</td>
<td>48.12</td>
<td>(3.79)</td>
<td>52.68</td>
<td>(12.59)</td>
<td>51.49</td>
<td>(10.44)</td>
<td></td>
</tr>
<tr>
<td>&gt;3.100</td>
<td>23</td>
<td>50.04 (7.06)</td>
<td>49.61</td>
<td>(7.82)</td>
<td>50.61</td>
<td>(7.49)</td>
<td>48.50</td>
<td>(2.50)</td>
<td>47.26</td>
<td>(5.55)</td>
<td>49.09</td>
<td>(7.64)</td>
<td></td>
</tr>
</tbody>
</table>

Note. For gender male = 0 and female = 1.

*For education the option other is deleted.*
Table 5. Correlations among child maltreatment, domestic violence, trauma, attachment, anxiety, depression, sexual concerns, dissociation and anger (N = 298)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Child Maltreatment</th>
<th>Witnessing Domestic Violence</th>
<th>Attachment</th>
<th>Post-traumatic stress</th>
<th>Anxiety</th>
<th>Depression</th>
<th>Sexual concerns</th>
<th>Dissociation</th>
<th>Anger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Maltreatment</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Witnessing Domestic Violence</td>
<td>.092</td>
<td></td>
<td></td>
<td></td>
<td>.023</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment</td>
<td>-1.178**</td>
<td></td>
<td>-0.23</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-traumatic stress</td>
<td>.072</td>
<td>.106</td>
<td>-.350**</td>
<td>1</td>
<td>.798**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.017</td>
<td>.147*</td>
<td>-.209**</td>
<td>.794**</td>
<td>.629**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>.078</td>
<td>.097</td>
<td>-.391**</td>
<td>.794**</td>
<td>.629**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual concerns</td>
<td>-.018</td>
<td>-.021</td>
<td>-.275**</td>
<td>.470**</td>
<td>.376**</td>
<td>.429**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dissociation</td>
<td>.071</td>
<td>.028</td>
<td>-.320**</td>
<td>.693**</td>
<td>.572**</td>
<td>.648**</td>
<td>.409**</td>
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<td>Anger</td>
<td>.186**</td>
<td>.070</td>
<td>-.364**</td>
<td>.597**</td>
<td>.443**</td>
<td>.623**</td>
<td>.467**</td>
<td>.550**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note.
* p < 0.05
** p < 0.01
**Attachment as mediator of the relationship between witnessing domestic violence, child maltreatment and post-traumatic stress**

To test the mediation hypothesis for WDV and child maltreatment, PROCESS macro by Hayes was used and the results are shown in figure 3 and table 6. In this model, child maltreatment significantly predicted attachment, $b = -0.01$, $t = -3.34$, $p = .001$. Attachment significantly predicts post-traumatic stress, $b = -12.14$, $t = -6.09$, $p < .01$. This means that a higher amount of child maltreatment leads to less attachment and the lower the attachment, the higher the post-traumatic stress. WDV does not significantly predict attachment, $b = -0.00$, $t = -0.15$, $p = .08$. There are no direct effects of child maltreatment and WDV on PTS. Also, no mediating indirect effect of attachment on the relationship between child maltreatment and WDV and post-traumatic stress was found.

*Figure 3. Mediator effect of attachment for the relationship of both child maltreatment and witnessing domestic violence and post-traumatic stress.*

*Table 6. Linear model of predictors of post-traumatic stress*

<table>
<thead>
<tr>
<th></th>
<th>$b$</th>
<th>SE $B$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>104.43</td>
<td>8.495</td>
<td>12.29</td>
<td>$p &lt; .001$</td>
</tr>
<tr>
<td></td>
<td>[87.69, 121.15]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child maltreatment</td>
<td>-0.02</td>
<td>0.061</td>
<td>-0.34</td>
<td>$p = .73$</td>
</tr>
<tr>
<td></td>
<td>[-0.14, 0.10]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Witnessing Domestic violence</td>
<td>0.03</td>
<td>0.015</td>
<td>1.78</td>
<td>$p = .08$</td>
</tr>
<tr>
<td></td>
<td>[-0.00, 0.06]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment</td>
<td>-12.14</td>
<td>1.994</td>
<td>-6.09</td>
<td>$p &lt; .01$</td>
</tr>
<tr>
<td></td>
<td>[-16.06, -8.21]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.  
$R^2 = 0.137$
Attachment as mediator of the relationship with other trauma symptoms

The same mediation analysis was performed for every symptom apart by replacing post-traumatic stress with the other trauma symptoms. A significant mediator effect was found for WDV and anxiety, $b = 0.03, 95\% \text{CI} \ [0.01, 0.06], t = 2.35, p = 0.01$. This means that attachment is mediating the relationship between WDV and anxiety. No other significant mediator effects were found here.

Moderators age and gender for the relationship between child maltreatment and WDV and post-traumatic stress

PROCESS showed no significant moderator effect of gender for both child maltreatment $b = -0.03, 95\% \text{CI} \ [-0.27, 0.22], t = -0.22, p = 0.82$, as for WDV, $b = 0.03, 95\% \text{CI} \ [-0.33, 0.09], t = 0.91, p = 0.36$.

Also no significant moderator effects of age were found for both child maltreatment, $b = -0.01, 95\% \text{CI} \ [-0.03, 0.04], t = -0.22, p = 0.66$, as for WDV $b = -0.01, 95\% \text{CI} \ [-0.01, 0.01], t = -0.22, p = 0.46$.

Moderators age and gender for the relationship with other trauma symptoms

Only a significant effect was found for the relationship between WDV and anxiety for the moderator gender, $b = -0.05, 95\% \text{CI} \ [0.00, 0.11], t = 2.14, p = 0.03$. This means the relationship between WDV and anxiety is stronger for girls than for boys, meaning girls are more vulnerable for anxiety when they have witnessed domestic violence. This is shown in figure 4.

![Figure 4](image-url)

*Figure 4*. Relationship between witnessing domestic violence and anxiety for boys and girls.
Discussion

The current study aimed to assess the relationships between post-traumatic stress and both child maltreatment and WDV in a sample of families who were registered at ‘Veilig Thuis’, because there were suspicions of either child abuse or WDV. Consistent with previous research (Ackerman and colleagues, 1998) on post-traumatic stress, rates of clinical post-traumatic stress (29%) were higher in the current sample compared to the general population (7.4% PTSD in the Dutch population, for children this number is lower, de Vries & Olff, 2009). The level of attachment in this sample appeared to be low, suggesting an insecure attachment between parent and child. According to the results, just a few group differences were found in age, gender, education and income for child maltreatment, WDV, attachment, and trauma symptoms. The youngest group of children had a higher level of attachment, the group of 9-12 years old showed more PTS symptoms than the group of 5-8 years old and sexual concerns were found in girls and in older children. In contrast with previous research, no strong relationships were found between child maltreatment and post-traumatic stress, only weak relationships were found between child maltreatment and attachment and anger. For WDV, only a weak relationship was found between WDV and anxiety.

Previous research has also found high prevalence of post-traumatic stress within samples of children that were maltreated or witnessed domestic violence. Ackerman and colleagues (1998) found that in a clinic setting, 26% of physically abused children were qualified for PTSD diagnoses. In a British sample, researchers found that 33% of maltreated children or children who witnessed domestic violence had post-traumatic stress (Alisic et al., 2014). It is therefore not surprisingly that this sample shows a higher degree of children with post-traumatic stress than a general sample. This study confirms previous findings that child maltreatment or WDV may lead to serious PTS symptoms in children.

In the families that participated, the level of attachment between parent and child was low in more than 70% of the participants. This is a lot, but is in line with previous research. It was found that in a sample of adults who reported having experiences of child maltreatment in the past, 76% of those individuals had an insecure attachment style with their parent. Alexander et al., 1998 also found that within an abused population, insecure attachments are more likely present. Maltreated children are especially at risk for developing insecure/disorganized attachments with their caregiver (Cyr, Euser, Bakermans-Kranenburg, Van IJzendoorn, 2010). Child maltreatment and WDV might be perceived by the child as frightening behaviors, placing children in an irresolvable paradox in which their attachment figure is simultaneously their source of safety and their source of fear. It is therefore not surprising that the children in the current sample have low attachment with their parent, indicating that child maltreatment and WDV might lead to insecure attachment between parent and child. This study also
shows there is a relationship between child maltreatment and attachment, with more child maltreatment leading to a lower level of attachment.

The findings from this study also suggest there is a relationship between attachment and post-traumatic stress, with attachment predicting post-traumatic stress. This means that the lower the attachment, the higher the amount of post-traumatic stress. Aspelmeijer, Elliot & Smith (2007) found that negative interpersonal interactions such as having violent parents is a predictor for trauma-related symptoms. A possible explanation for this relationship might be that the stress those children experience because of the violence may not be coped with in an adequate way and they therefore have a higher risk of developing PTS symptoms. Current research suggests that children who have experienced violence at home are at high risk for an insecure attachment and moreover, the lower the attachment the higher the chance of developing PTS symptoms. Future research can look at attachment as a potential risk factor for developing PTS symptoms.

This study also examined some group differences, but only a few differences were found. For the group of children younger than 5 years old, higher attachment scores were found compared to the group of 9-12-year-olds. Bowlby’s theory of attachment might explain the differences found here. Younger children are more dependent on their caregivers and seek for protection and support from the people who are closest to the child, most of the time the parents. When child maltreatment or WDV takes place, parents may lack in providing protection and safety. A younger child might put a lot of effort in connecting with the parent. As it grows older it learns that it can’t depend on its parent and stops connecting with the parent. It therefore might be that parents perceive the attachment with younger children as more secure than with older children.

Another difference in age was found for post-traumatic stress, surprisingly, the age group of 5-8 years old showed less post-traumatic stress than the group of 9-12 years old. This is not in line with previous research, since it is found that the earlier the maltreatment or WDV takes place, the more impact it has on the development. This is because the younger the child, the more protection and safety it seeks (HuthBocks, Levondosky, & Semel, 2001). A possible explanation for not finding this relation is that young children less likely show post-traumatic stress, but instead may express their symptoms through play (American Psychiatric Association, 2013). It therefore might be that parents do not notice the post-traumatic stress in young children and they do not match it with the stress items that are used in the questionnaires. On the other hand, the young children might display post-traumatic stress at a later age. Longitudinal studies are needed to measure the impact of child maltreatment and WDV over the life span.

For sexual concerns, gender showed to play a role; girls showed more sexual concerns than boys. This might be due to the fact that girls show more symptoms of sexual concerns than boys in general (Banyard, Williams & Siegel, 2004). Gender differences may be the result of reporting bias,
with women more willing to report a greater degree of symptoms. Such reporting may result in women’s raw scores appearing higher than men’s. However, studies on sexual abuse specifically have found that female survivors of sexual abuse reported higher levels of sexual concerns than male survivors (Banyard, Williams & Siegel, 2004). In addition, within this study, the group of 9-12-year-old children reported more sexual concerns than the group of 5-8-year-old children. A possible explanation might be that young children do not show any signs of sexual concerns yet but might develop sexual concerns when they grow older. According to the developmental phases within the group of 9-12 years old, some children already hit puberty. During that age, teens begin to have concerns about their appearance and therefore might also be more vulnerable to having sexual concerns (Christie, Viner, 2005).

The last difference found was that the relationship between WDV and anxiety is stronger for girls than for boys, meaning that girls are more vulnerable for anxiety when they have experienced WDV. This might be explained by the fact that girls are more likely to internalize their emotions and develop anxiety, whereas boys develop more externalizing behaviors such as aggression (Al Odhayani, Watson & Watson, 2013). Furthermore, girls are shown to be more anxious than boys even without having experienced WDV and child maltreatment. Girls faced with life stressors are more likely to ruminate about them, which can increase their anxiety, while boys engage more in active, problem-focused coping (McLean & Anderson, 2009).

In contrast with previous research, this study did not find a relationship between either child maltreatment and WDV with post-traumatic stress. Associations between physical/sexual abuse or WDV and PTSD in adolescents and adults have been found in prospective and retrospective studies, even after controlling for family and child characteristics that are found to be correlated with maltreatment (Lansford et al., 2002; Banyard, Williams & Siegel, 2001; Widom, 1999; Brewin, Andrews & Valentine, 2000). One prospective study (Widom, 1999) of children who were maltreated before 12 years of age and assessed at 29 years reported that 23% of people who were sexually abused, 19% of those physically abused, and 17% of those neglected, had a present diagnosis of PTSD (with use of DSM-III criteria) compared with 10% of controls, and lifetime risks of this disorder were much higher in cases than in controls. Given the potential distortion of the amount of post-traumatic stress, because only parent reports were used and the lack of child reports may explain the difference in result found in the current study and previous research. Post-traumatic stress as a consequence of child maltreatment and WDV needs further research including reports of both parent and child and possibly other informants such as teachers. In order to understand the course of post-traumatic stress symptoms in the long-term, future research should also focus on longitudinal measures.

Furthermore, no mediating effect of attachment on the relationship between child maltreatment and WDV together and post-traumatic stress was found. Previous research has found
that those young children raised in stressful home environments appear less able to bond to their adult caregivers and others in the home, thereby making them susceptible to ongoing relationship problems (Gewirtz & Edleson, 2007). It is surprisingly that in this study this relationship has not been found. This might be explained by the fact that there was no significant relationship of child maltreatment and WDV with post-traumatic stress. Therefore, the outcomes of this analysis should be interpreted with caution and future research is needed to get more insight into these relationships.

No significant moderator effect was found for gender, meaning no differences were found between boys and girls on post-traumatic stress. This is surprisingly, because women were found to develop more post-traumatic stress when experiencing trauma in early childhood (Brewin, Andrews & Valentine, 2000). The type of trauma has been found to influence the differences between females and males. For example, Tolan & Foa (2006) found that the highest level of gender differences in post-traumatic stress was disaster and accident, whereas violence showed the lowest level of gender difference in post-traumatic stress. It may therefore be that for child maltreatment and WDV the differences in post-traumatic stress do not exist within this sample. This study therefore did not confirm previous findings that there is a gender difference for the relationship between either child maltreatment or WDV and post-traumatic stress.

Also, no significant effect was found for age, no differences were found between the younger and older children in the relationship between child maltreatment/WDV and post-traumatic stress (Dunn, Nishimi, Powers & Bradley, 2017). In previous research, younger children were found to be more susceptible to post-traumatic stress when having experienced child maltreatment and/or WDV. A possible explanation for not finding effect for age in the current study, is that within this study only children from 3-12 years were included. It might be that the difference between children of 3 and older than 12 might be significant. Famularo and colleagues (1994) found within their retrospective study that early age of abuse onset is a factor in development of post-traumatic stress, but it can be that the development of post-traumatic stress might occur when the child has grown older. Future research should use longitudinal studies in order to capture these changes.

Lastly, not in line with previous findings, no significant relationships were found between child maltreatment and WDV. Appel and Holden (1998) found that in a sample of battered women, there was a median rate of co-occurrence between child maltreatment and WDV of 41%, although in some studies included in the review, rates of overlap were even higher. Renner and Slack’s (2006) recent examination of retrospective data on childhood physical abuse and exposure to intimate partner violence for a sample of welfare families showed a significant correlation between child maltreatment and WDV. In their study of a birth cohort Moffitt and Caspi (2003) found that the risk for abuse among children in homes in which parents physically fought was 3 to 9 times higher than for other children in the study. However, in the current study this effect has not been found. A possible explanation might
be that in this study all questionnaires were completed by the parents, although previous research used both parents and children’s reports. Parents might feel ashamed or have the fear of being assaulted for child maltreatment and as a result be subject to an investigation to find out whether or not child maltreatment is occurring. Moreover, parents might feel more ashamed to report child maltreatment than domestic violence, because with child maltreatment the violence is directly directed towards the child. The current study did not find significant relationships were found between child maltreatment and WDV, but future research can use other research methods to find out whether this is true. Future research can consider distinguishing the sample in groups of children who experienced only child maltreatment, only WDV or a combination of it. And compare it with a sample of children who did not experienced violence at all. This way comparisons between groups can be made.

**Limitations and strengths**

This study has some limitations. First, only parent reports were used. To enhance validity of the results, the use of multiple informants would have provided more reliable data. Not having data from children about the maltreatment or violence, makes it impossible to draw conclusions about the child own’s perspective on PTS symptoms. It might also be that children exhibit adapted behavior at home, for fear of violence or not to be a burden to the parents. In other surroundings, for example at school, the behavior might be different. This sample also included reports from the majority of mothers. Mothers might report child abuse and WDV differently from fathers. It is therefore important to include other informants as well in future research and also include more fathers if possible.

Second, this study did not include a control group to compare the results with. The possibility of comparing children with children from a general population could shed light on the underlying causes of developing post-traumatic stress. Moreover, within this study the time of onset of the maltreatment was not measured. The developmental period of trauma occurrence is considered as an important dimension of defining maltreatment, finding that age at onset to maltreatment may influence the etiology of mental health problems (Dunn, Nishimi, Powers & Bradley, 2017). Currently there is a lack of information in the literature about the existence of “sensitive periods”. It is important to know whether, and when, sensitive periods exist across the lifespan in order to interventions could offer their greatest benefit.

Despite these limitations, this study also had some strong points. First, this study included a large sample size. The larger the sample size, the more information is gathered and the more reliably the results can be generalized to the population. Furthermore, the sample was derived from the database of ‘Veilig Thuis’, which is based throughout the Netherlands and has access to all families that are suspected from child abuse. Another strength is that both child maltreatment and WDV as
well as attachment are included in the study and different trauma symptoms are measured. This study is at the time of writing the first Dutch study that looked at child maltreatment and WDV in relationship to PTS symptoms with attachment as a mediator.

**Conclusion**

The current study included a sample of families who were registered at 'Veilig Thuis' because there were suspicions of child abuse or WDV. It can be concluded that within this sample high amounts of post-traumatic stress exist which is associated with the level of attachment. Low attachment levels exist in this sample, suggesting that children who are maltreated or witnessed domestic violence have a higher chance of having insecure attachments with their parents. Age seemed to play a role in the amount of attachment, with younger children having a higher level of attachment than the older ones. It was also found that post-traumatic stress levels were the highest in oldest children (9-12 years). And lastly, girls showed more sexual concerns than boys. To be able to track long-term effects of child maltreatment and WDV, future research is needed. Future research can focus on prospective, longitudinal studies to capture developmental changes as they emerge in maltreated children. It is important to consider different perspectives when doing research on child maltreatment and WDV: both the perspective of the parents as well as of the child are needed. It is important to gain more knowledge into the consequences of child maltreatment and WDV in order to understand and treat maltreated children.
References


Consequences of Child Maltreatment and Witnessing Domestic Violence and the role of Attachment in Young Children

MASTERTHESIS BY TALIN YAKOB


Youth Care Act , Article 1.1 (2015). Retrieved from:  
http://wetten.overheid.nl/BWBR0034925/2018-01-01
A - INFORMATIE DEELNEMERS ONDERZOEK

Inleiding

U bent met uw gezin aangemeld bij Veilig Thuis. De reden hiervoor was dat er in uw gezin sprake is geweest van een incident waarbij ofwel de politie is langs geweest ofwel een andere hulporganisatie u heeft verwezen. De gemeente waarin de Veilig Thuis organisatie gevestigd is doet mee aan dit onderzoek.

Doel van het onderzoek is om na te gaan op welke manier ouders en kinderen nu en in de toekomst het beste geholpen kunnen worden om de ervaringen te verwerken.

Om dit onderzoek te kunnen uitvoeren hebben wij uw hulp nodig. U weet als geen ander wat voor u, uw kind(eren), uw gezin goede hulp zou kunnen zijn, en waar u behoefte aan hebt. Maar u weet ook welke problemen er in uw verleden en in uw gezin gespeeld hebben of spelen die hebben geleid tot de huidige situatie. Daarom zouden wij u willen vragen aan het onderzoek mee te doen.

Wat vragen wij van u?

Als u besluit mee te doen aan het onderzoek, vragen wij u op drie momenten een internetvragenlijst in te vullen. Deze vragenlijst gaat over uw situatie, over uw relatie met uw partner, over uw relatie met uw kinderen, en over de wijze waarop uw kinderen op een aantal situaties reageren.

En wij vragen u om toestemming om ook aan uw kinderen, in de leeftijd van 8-18 jaar, een internetvragenlijst voor te mogen leggen.

Wanneer worden de vragenlijsten afgenomen?

Nu wordt voor de eerste keer de vragenlijst ingevuld, of anders zo snel mogelijk.

Zowel u als uw kind(eren) van 8 tot 18 jaar vullen de vragenlijst in. Een jaar na de eerste keer wordt u door de onderzoekers opnieuw benaderd om de vragenlijst in te vullen.

Een half jaar na de tweede keer wordt u voor de derde keer benaderd door de onderzoekers om de vragenlijst in te vullen. In totaal komen we in anderhalf jaar dus drie keer bij u om de vragenlijst in te vullen.

Hoe gaat dat dan gebeuren?

Als u mee wilt doen met dit onderzoek, dan gaat u de vragenlijst invullen via de computer. U krijgt van de onderzoekers een eigen code en een internetadres. Ook uw kind(eren) krijgt een eigen code en vult (vullen) de vragenlijst in via de computer.

In het algemeen zal een van de onderzoekers bij u langskomen met een laptop waarop u en uw kind(eren) de vragenlijsten kunnen invullen. Dat wordt gedaan omdat u dan meteen de vergoeding voor het onderzoek cash ontvangt.
Als u niet mee wilt doen aan het onderzoek, of als u uw toestemming na verloop van tijd wilt intrekken, dan heeft dat op geen enkele manier invloed op de hulp die u, uw kind(eren), uw gezin heeft of krijgt.

**Hoeveel tijd kost u dat?**
Het invullen van de vragenlijst kost uw kind(eren) ongeveer vijfentwintig minuten. Het invullen van de vragenlijst kost u ongeveer een uur a anderhalf uur, afhankelijk van het aantal kinderen.

**Wat levert het u op?**
Als u deelneemt aan dit onderzoek krijgt u een vergoeding voor elk van de drie metingen die u afrondt. De vergoeding bedraagt € 20,00 per meting, of € 60,00 voor de gehele periode. Uw kinderen van 8 tot 18 jaar die meedoen krijgen een vergoeding van € 10,00 per meting, dus in totaal € 30,00. Als u de vragenlijsten invult met een onderzoeker die bij u langskomt, krijgt u de vergoeding cash door de onderzoeker uitgereikt als u de vragenlijsten heeft ingevuld. Als u de vragenlijst via internet zelf thuis invult, moet u via email melden wanneer u de vragenlijst heeft ingevuld, vervolgens wordt gecontroleerd of u de lijsten heeft ingevuld (via uw gebruikersnaam-wachtwoord combinatie), daarna maakt een onderzoeker met u een afspraak bij u langs te komen om u de vergoeding te overhandigen.

**Risico’s**
In de vragenlijsten worden vragen gesteld over onderwerpen die bij u misschien vervelende herinneringen oproepen. Ook is het mogelijk dat u zich schaamt over sommige dingen waar naar gevraagd wordt. Het kan zijn dat u over bepaalde zaken waarnaar wij vragen, geen antwoord wilt geven. Hoewel wij graag willen dat u op alle vragen antwoord geeft, bepaalt u zelf of u wel of geen antwoord geeft. Dit betekent dat u beslist of u antwoord geeft of niet. Uw keuze hierin heeft verder GEEN gevolgen voor de hulpverlening. Als het invullen van de vragenlijsten voor u vervelend was, en u zou daarover met iemand willen praten, dan kunt u dat natuurlijk altijd doen met uw hulpverlener.

**Wat gebeurt er met uw gegevens?**
Uw gegevens worden onder een code, dus anoniem, opgeslagen in een centraal niettoegankelijk archief. Zij zijn alleen voor de onderzoekers toegankelijk. De onderzoekers zullen niets van het materiaal wat ze over u verzamelen, gekoppeld aan uw naam, naar buiten brengen. De onderzoekers zullen uw naam nooit in verband met het onderzoek of de hulpverlening aan iemand anders melden. Mocht het zo zijn dat de situatie van u of uw kind zodanig is dat grote zorgen ontstaan, dan bespreken we dat eerst met u. Alleen met uw toestemming kan informatie uit het onderzoek worden gedeeld met de hulpverleners.

**Tenslotte**
Over de wetenschappelijke resultaten aan het eind van het onderzoek wordt u niet automatisch geinformeerd. Als u prijs stelt op algemene informatie hierover, dan kunt u dit aangeven op het toestemmingsformulier. We hopen u door middel van deze brief voldoende geinformeerd te hebben. Als u wilt deelnemen aan dit onderzoek, wilt u dan het toestemmingsformulier tekenen en aan de onderzoeker geven.

Met vriendelijke groet,

Bas Tierolf, onderzoeker Verwey-Jonker Instituut, Utrecht. Tel. 030-2300799
II Informed Consent Form
A - TOESTEMMINGSFORMULIER

VERKLARING DEELNEMER ONDERZOEK - ouders en kinderen van 8 tot 18 jaar
Hierbij verklaar ik het volgende:
Ik heb de informatie over het onderzoek gekregen. Er is mij uitgelegd hoe het onderzoek in zijn werk gaat. Ik weet wat ik er voor moet doen en ik weet wat ik ervoor terug krijg. Mijn vragen zijn beantwoord.
Ik doe vrijwillig mee aan dit onderzoek. Voor de twee vervolgingen mag ik benaderd worden via het telefoonnummer, adres of mijn email-adres dat ik hieronder opgeef.

Als ik het ergens niet mee eens ben kan ik dit zeggen.
Als ik om welke reden dan ook niet meer mee wil doen kan ik stoppen.

Naam deelnemer onderzoek ..............................................................
Email-adres deelnemer onderzoek..................................................
Email-adres 2 deelnemer onderzoek...............................................
Straat + huisnr. ................................................................. Woonplaats: ..................................................
Telefoonnummer 1: ................................................................. 2: .................................................................
Datum van onderzoek.................................................................
Handtekening.............................................................................
Naam kind 1: ..............................................................................
Datum van onderzoek................................................................. Email-adres kind..................................................
Handtekening.............................................................................
Naam kind 2: ..............................................................................
Datum van onderzoek................................................................. Email-adres kind..................................................
Handtekening.............................................................................
☐ Ik wens geïnformeerd te worden over publicaties over dit onderzoek

Eventueel:
Naam partner .................................................................
Email-adres partner ..............................................................
Email-adres 2 partner..............................................................
Consequences of Child Maltreatment and Witnessing Domestic Violence and the role of Attachment in Young Children

MASTERTHESIS BY TALIN YAKOB

Adres en woonplaats .................................................................

Telefoonnummer 1: ................................................................. 2: .................................................................

Handtekening partner: ............................................................

Wanneer kinderen van 8 tot 18 jaar mee willen doen:

Naam andere gezaghebbende ouder: ........................................

Email-adres gezaghebbende ouder: ...........................................

Adres en woonplaats .................................................................

Telefoonnummer .................................................................

Datum....................................................................................

Handtekening........................................................................ (indien niet aanwezig wordt het ‘Toestemmingsformulier gezaghebbende ouder’ toegestuurd aan deze ouder)

VERKLARING ONDERZOEKER

Ik heb de informatie over het onderzoek goed uitgelegd. Als er nieuwe vragen zijn, probeer ik die goed te beantwoorden. Als de deelnemer eerder stopt met het onderzoek, heeft dit geen consequenties voor de begeleiding of hulpverlening.

Naam onderzoeker .................................................................

Organisatie ............................................................................

Datum....................................................................................

Handtekening........................................................................

Uitgegeven gebruikersnamen:

Gebruikersnaam deelnemer: ..............................................

Gebruikersnaam kind 1: ...................................................

Gebruikersnaam kind 2: ...................................................

Gebruikersnaam partner: ..................................................