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Research article

Prevalence of child maltreatment in the Netherlands: An update and cross-time comparison



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ABSTRACT

Background: The third Netherlands' Prevalence study of Maltreatment of children and youth (NPM-2017) continues the tradition of periodically mapping the national prevalence of child maltreatment.

Objective: The NPM-2017 provides an update of the current prevalence rates of child maltreatment and of changes in its prevalence over the last 12 years. In addition, risk factors for child maltreatment and its co-occurrence with domestic violence were investigated.

Participants and Setting: Prevalence data were based on cases reported to 'Safe at Home' organizations (former CPS agencies) and observations of professionals working with children (sentinels).

Methods: Sentinels ($N = 785$) filled out a form for each case of suspected child maltreatment that they observed within their professional sample during a three-month period.

Results: An overall prevalence estimate of child maltreatment in the Netherlands in 2017 of 26–37 per 1000 children was computed. The most important risk factors for child maltreatment were low parental education ($RR = 4.95$), parental unemployment ($RR = 3.64$), immigrant status ($RR = 3.61$), and single parenthood ($RR = 2.29$). Neither prevalence rates nor risk factors changed significantly between 2005, 2010, and 2017. Finally, in 46 % of the reported families child maltreatment occurred in a context of domestic violence.

Conclusions: The prevalence of co-occurring domestic violence may indicate that family violence observed within one dyad could be a marker for dysfunctional functioning of the family system. Child maltreatment remains a considerable problem in the Netherlands with a stable prevalence over the last 12 years and stability in characteristics that make families vulnerable for child maltreatment.

1. Introduction

Child maltreatment is a widespread, global problem affecting millions of children in high-, middle-, and low-income countries (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van IJendoorn, 2015). The devastating effects of child maltreatment are not only evident in the lives of the victimized children but the long-term effects are also a burden for society in general (Gilbert et al., 2012). Changes in trends of child maltreatment prevalence rates and risk factors over time are important to policy makers and professionals

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involved in child protection. In 2005, national prevalence data of child maltreatment in the Netherlands were systematically collected for the first time. Similar to the tradition of the periodical National Incidence Studies (NIS, e.g., Sedlak et al., 2010) on the prevalence of child maltreatment in the USA, the Netherlands' Prevalence study of Maltreatment of children and youth (NPM-2005; Euser, Van IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2010) was repeated in 2010 (NPM-2010; Euser et al., 2013). The current study continues the tradition of periodically mapping the national prevalence of child maltreatment in the Netherlands by conducting the third national prevalence study, the NPM-2017. This third study provides an update of the current situation concerning child maltreatment and allows for cross-time comparison of prevalence rates and risk factors in the Netherlands. In addition to previous NPM studies, we investigated the co-occurrence of child maltreatment and other types of domestic violence.

Trends in prevalence rates of child maltreatment have been investigated in several Western countries using different methods (Finkelhor, Turner, Shattuck, & Hamby, 2015; Gilbert et al., 2012; Sedlak et al., 2010). In the USA, the National Incidence Studies (NIS; Sedlak, 1991; Sedlak & Broadhurst, 1996; Sedlak et al., 2010) estimated prevalence rates of child maltreatment based on reports of professionals working with children (sentinels) in combination with CPS reports starting from 1979 until most recently 2005/2006. In addition, the National Survey of Children's Exposure to Violence (NatSCEV; Finkelhor et al., 2015) used repeated assessments at 3-year intervals of self-reported and parent reported youth victimization in the USA in 2008, 2011 and 2014. Furthermore, Gilbert et al. (2012) compared trends over time in six Western developed countries (Sweden, USA, Canadian province Manitoba, Western Australia, England, and New Zealand) based on routinely recorded indicators of child maltreatment using death registrations, admissions to hospital due to maltreatment-related injury, and substantiated CPS cases from 1979 to 2010. Although data sources as well as prevalence estimates differ – potentially as a result of methodological differences (Prevo, Stoltenborgh, Alink, Bakermans-Kranenburg, & van IJzendoorn, 2017)—all studies showed a similar trend of stable prevalence rates of child maltreatment in the most recent years (i.e. 2000–2010). This is in line with the comparison of the previous NPM studies, which showed no changes in prevalence rates between 2005 and 2010 based on sentinel and self-report data (Euser et al., 2013).

However, some changes in prevalence rates since the previous NPM in 2010 may be expected. Since then, several changes in Dutch child maltreatment policies and the reorganization of the Dutch child and youth care system have been implemented to reduce the prevalence of child maltreatment. In 2013 the mandatory Protocol for Child Abuse and Domestic Violence Act (in Dutch: Wet Verplichte Meldcode Huiselijk Geweld en Kindermishandeling) was launched. This act broadened the responsibility of all professionals working in education, healthcare, childcare, social support, sports, youth care, and justice to be alert to possible child maltreatment. Also, it obliges these professionals to act in accordance with the protocol when they have concerns. An element of the mandatory protocol is the *Child check* (in Dutch: *Kindcheck*) prescribing a standardized check by professionals working in healthcare or the legal system. These professionals should check whether an adult client is responsible for the care of one or more children and given the care the adult requires of these professionals, whether there are reasonable concerns about the safety of these children. This change in legislation resulted in the appointment of child protection officers in all organizations within the specific occupational branches subjected to the mandatory protocol. Second, the Dutch child and youth care system was subjected to a large scale reformation. In 2015, the Child and Youth Act replaced the former Act on Youth Care of 2005, which led to the decentralization of the youth care system and the initiation of Safe at Home organizations (in Dutch: *Veilig Thuis*, see also Method section) which replaced the existing child protection and domestic violence agencies. These changes in child maltreatment policies and the child and youth care system may have facilitated early recognition and subsequent intervention for families (at risk for) experiencing child maltreatment, which in turn may have resulted in a decline in the prevalence of child maltreatment over time. However, the effects of improved recognition and expansion of the responsibility to be alert to child maltreatment has in other Western countries not resulted in the intended decrease in child maltreatment prevalence (Gilbert, 2012). On the contrary, improved surveillance and recognition of families (at risk for) experiencing child maltreatment may result in an increase in prevalence rates as a consequence of underrepresentation of the occurrence of child maltreatment in prior NPM studies.

Child maltreatment has been associated with several socio-demographic risk factors such as young child age, poverty, minority status, and parental unemployment (Assink et al., 2019; Hussey, Chang, & Kotch, 2006; Mulder, Kuiper, van der Put, Stams, & Assink, 2018; Sedlak et al., 2010; Sidebotham, Heron, & ALSPAC Study Team, 2006; Slack et al., 2011; Stith et al., 2009). The previous NPM-studies substantiated the following risk factors for the Dutch population; low-educated parents, parental unemployed, immigrant background, stepfamilies, single-parent families, families with three or more children and young child age (i.e. younger than 4 years of age; Euser et al., 2011; Euser et al., 2013). To understand changes or stability in the occurrence of child maltreatment across time, it is essential to investigate how the relative importance of these socio-demographic risk factors in society have changed across time. Changes in the social-demographic structure of society may not only influence the prevalence of child maltreatment, but could also change the relation between specific risk factors and child maltreatment (Coulton, Richter, Korbin, Crampton, & Spilsbury, 2018).

Child maltreatment is often an indicator of family problems or family dysfunctioning (Haskins, 2003). Children experiencing child maltreatment are often also subject to other forms of domestic violence, as a victim or as a witness, such as violence between parents, violence between siblings, and violence by children against their parents (Browne & Hamilton, 1998; Hamby, Finkelhor, Turner, & Ormrod, 2010; Renner & Slack, 2006; Van Berkel, Tucker, & Finkelhor, 2018). Several studies investigated the combination of interparental violence (IPV) and child maltreatment (Appel & Holden, 1998; Chan, 2011a; Edleson, 1999). These studies identified in 20%–95% of the families exposed to IPV additional child maltreatment (Benavides, Almonte, & Ponce de Leon Marquina, 2015; Chan, 2011a; Edleson, 1999; Guedes, Bott, Garcia-Moreno, & Colombini, 2016; Kelmendi, Hyseni Duraku, & Jumini-Gashi, 2019). Fewer studies investigated additional IPV in families exposed to child maltreatment (Casaneuva, Martin, & Runyan, 2009; Chan, 2011b; Edleson, 1999; Hamby et al., 2010). These studies showed that in 21–73% of the families exposed to child maltreatment additional IPV occurred. Notably, most of these studies focus on physical child maltreatment (Appel & Holden, 1998; Benavides et al., 2015; Chan, 2011a & 2011b), but there is also evidence that there is overlap between IPV and child physical neglect and emotional abuse

(Casanueva et al., 2009; Kelmendi et al., 2019; McGuigan & Pratt, 2001). Moreover, studies on the co-occurrence of child maltreatment and other forms of domestic violence, such as sibling abuse, are scarce (Van Berkel et al., 2018). Research shows that poly-victimization (i.e., exposure to more than one type of family violence) substantially increases the relative risk on trauma symptomatology associated to chronic exposure of individual forms of victimization (Finkelhor, Ormrod, & Turner, 2007), which underlines the importance of mapping the co-occurrence of child maltreatment and domestic violence.

The current study is the third Netherlands' Prevalence study of Maltreatment of children and youth (NPM-2017). Similar to the NIS and previous NPM studies, prevalence data are based on cases reported to 'Safe at Home' organizations (former CPS agencies, see Method) and sentinels. The NPM-2017 provides an updated estimate of the number of children who are victims of child maltreatment in a given year and investigates the trends over time. In addition, this study aims to investigate socio-demographic child and family factors posing a risk for child maltreatment and to compare these with the risk factors identified in the previous Dutch prevalence studies. A final aim consists of investigating child maltreatment in the context of domestic violence irrespective of whether the child was present during the assault. We hypothesize that the prevalence of child maltreatment may have declined over time, although this hypothesis is tentative considering the stability in other Western countries (Gilbert et al., 2012). In addition, we expect that a considerable percentage of child maltreatment occurred in the context of domestic violence.

2. Method

2.1. Participants

Occupational branches within which professionals have regular direct contact with children and/or families and that are likely to come into contact with maltreated children were included in the study (Table 1). Given the target populations of these occupational branches (Table 1), we may assume that the large majority of children in the Netherlands will have regular contact with one or more of the professionals working in the selected occupational branches. Organizations and participating professionals within these organizations—sentinels—were randomly selected within several occupational branches. To ensure a geographically representative sample, provinces in the Netherlands were arranged in five zones with approximately equal numbers of children living in each zone. The number of sentinels within each occupational group was determined in proportion to the number of children in that zone. Nonresponse was handled by randomly selecting new organizations and professionals in a given zone to minimize selection bias. In total, 785 professionals from 289 organizations participated in the study (Table 1).

2.2. Procedure

The study design and procedures were approved by the ethical committee of the Institute of Education and Child Studies at Leiden University. Sentinels filled out a standardized online registration form, based on the form used in the NIS studies (Sedlak et al., 2010) and previous NPM studies (NPM-2005: Euser et al., 2010 and NPM-2010: Euser et al., 2013) for each child of their professional population for whom they suspected child maltreatment during a 3-month period, from September to December 2017. The registration form consisted of questions about the child, the home situation, the caregivers of the child, the suspected maltreatment, suspected perpetrators, and the context of domestic violence and parental divorce. Due to very recent reorganizations at the Child Protection Boards, participating professionals from these organizations considered filling out the registration form as too much of a burden. Therefore, the procedure was adapted for this occupational branch such that research assistants filled out the registration forms based on the files registered by the selected sentinels of the Child Protection Boards.

Sentinels reported (suspicions of) child maltreatment concerning 735 children. Twenty-three cases were removed because the victim was in utero or 18 years of age or older, the maltreatment did not take place during the designated period, or because the child did not belong to the sentinel's population (e.g., an older sibling of a child from a sentinel of a well-baby clinic). Additionally, 47 were removed because the case descriptions were not considered maltreatment (see below). Examination of the data for duplications revealed two cases that were reported by two different sentinels. The two registration forms of these children were integrated to one form and randomly assigned to one of the two sentinels. This resulted in a final sample of 663 cases of suspected child maltreatment of children living in 467 families.

2.3. Coding of maltreatment

The cases of child maltreatment reported by the sentinels were independently coded by three trained coders to (a) decide whether the cases were considered child maltreatment following the definitions used in the previous NPM-studies (Euser et al., 2010, 2013) and the NIS-4 (Sedlak et al., 2010) and (b) to classify the description into one or more of six maltreatment types: (1) sexual abuse, (2) physical abuse, (3) emotional abuse, (4) physical neglect, (5) emotional/educational neglect, and (6) other abuse or neglect. This last category was coded when there was clearly maltreatment but the information to specify any of the other subtypes was insufficient. To guarantee reliability with the coding of the NPM-2010, intercoder reliability between a coder involved in coding for the NPM-2010 and the expert coder of the NPM-2017 was obtained with a range of .75–.93 (kappa) for the different types of maltreatment. A reliability set of 93 forms (from the NPM-2010 and the NPM-2017) was coded by all three coders, and intercoder reliability ranged from .65–.95. In case of doubt, the case was discussed with the other coders to reach consensus.

Table 1
Total numbers of participating organizations and professionals, sample of observed children, and total Dutch population per occupational branch.

	NPM 2005			NPM 2010			NPM 2017		
	Professionals (Organizations)	Observed children ^b	Total Dutch population	Professionals (Organizations)	Observed children ^b	Total Dutch population	Professionals (Organizations)	Observed children ^b	Total Dutch population
Home- and center-based child care	58 (11)	1,496	352,128	171 (77)	4,234	353,932	133 (80)	2,708	531,450
Kindergartens	–	–	–	42 (27)	960	169,077	41 (30)	1,266	47,000
Primary schools	491 (63)	12,207	1,595,100	342 (59)	7,999	1,593,055	272 (45)	6,623	1,427,506
Secondary schools	333 (42)	35,361	1,199,916	108 (28)	2,186	1,184,064	65 (21)	1,825	995,725
Well-baby clinics	81 (12)	37,143	1,010,626	139 (26)	18,721	834,220	113 (18)	24,477	783,154
General practitioners	25 (25)	16,115	3,597,591	131 (131)	90,230	3,514,478	37 (33)	21,974	3,404,098
Child protection professionals in hospitals ^a	–	–	–	30 (30)	626,107	3,514,478	36 (36)	1,753,425	3,404,098
Shelters for battered women	60 (15)	1,000,463	3,597,591	87 (48)	1,121,062	3,514,478	39 (16)	1,840,053	3,404,098
Child Protection Boards	23 (13)	696,785	3,597,591	25 (12)	96,514	3,514,478	49 (10)	130,331	3,404,098
Total	990 (181)	–	3,597,591	1,075 (438)	–	3,514,478	785 (289)	–	3,404,098

Note: data from the Safe at Home organizations are not included in this table.

^a Specialized in the evaluation of and response to child maltreatment, which were implemented in hospitals since 2010.

^b The samples of observed children cannot be summed to a total, since children can be observed by more than one occupational branch.

2.4. 'Safe at Home' organizations

Since 2015, CPS agencies and agencies for protection against domestic violence are incorporated in Safe at Home organizations resulting in one agency responsible for restoring safety at home in case of serious concerns. Anyone suspecting child maltreatment or domestic violence in any professional or informal setting is entitled to report such a case to a regional Safe at Home organization. The amalgamation of these agencies was accompanied with a shift in the focus of child protection: from substantiating presumed child maltreatment to sustainably restoring child safety at home. Safe at Home organizations assess whether a reported case constitutes acute and structural violation of the child's safety (*triage*) and if needed, transfer the family to social services (third parties) or arrange support within the family's social network to restore the child's safety. An investigation to substantiate child maltreatment is only conducted when parents are not accepting the necessary support, when legal prosecution is in place or when it is essential for restoring the child's safety. This change in the focus and case processing meant that the registered number of substantiated cases of child maltreatment of Safe at Home organizations were not directly comparable with those of the CPS agencies in 2005 and 2010.

Based on the method of Safe at Home, both children for whom child maltreatment was substantiated ($N = 15,196$) and children who were transferred to third parties for support in restoring their safety (except for transfers within the clients social support system; $N = 17,664$) were included in the NPM-2017. Because a number of such referrals will contain situations raising serious concerns on child safety without the occurrence of actual child maltreatment, a more cautious prevalence estimate was computed based on substantiated child maltreatment cases and cases transferred to third parties in the following categories involving the most severe situations: Child Protection Board, police or public prosecutor, certified institutions, shelters for battered women, psychological youth care (in Dutch: *Jeugd GGZ*), organizations supporting families with domestic violence in the context of a temporary restraining order (in Dutch: *Wet Tijdelijk Huisverbod*), and social community shelters ($N = 5,711$). Children who were transferred to several of these third parties were only counted once. Data of all 26 Safe at Home organizations in the Netherlands throughout 2017 were obtained via Statistics Netherlands (in Dutch: *Centraal Bureau voor de Statistiek*; CBS). Cases included in Safe at Home files could have been reported by sentinels. Duplications were detected by linking the sentinel and Safe at Home files using a set of unique identifiers i.e., date of birth, gender, and zip code. This resulted in 46 duplicate cases of substantiated child maltreatment, 41 duplicates in the more severe transfers and 38 in the other transfers which were all removed from the Safe at Home data. This led to 20,820 cases when counting only the most severe transfers to third parties and 32,735 cases when counting all transfers to third parties of child maltreatment, additional to the sentinel data.

2.5. Statistical procedures

The sentinel data that covered the predetermined 3-month period were extrapolated to an annual prevalence estimate of child maltreatment. In the previous NPM studies we controlled for possible season effects based on seasonal variability in Safe at Home data in the year of data collection. However, information protocols of Safe at Home registration slightly differ between the two halves of 2017. Since this could affect the seasonal effects and the data collection period was the same as in 2010, we decided not to calculate a new seasonal factor, but to use the same factor as in 2010: 4.43 (Euser et al., 2013).

Sentinels in four occupational branches observe more or less the same group of children throughout the year; i.e., home-based and center-based child care, kindergartens, and primary and secondary schools. Therefore, we expected that the *law of diminishing returns* applies in that every quarter of the year fewer children will be reported by these sentinels. So, similar to the NPM-2010, an alternative correction for the seasonal effect was used: $x + x * 0.75 + x * 0.75^2 + x * 0.75^3$, where x is the number of children reported. Keeping these formulas the same as in 2010 enables us to make a comparison between estimates.

To estimate the sample of observed children per occupational branch (see Table 1), sentinels reported the number of children they (potentially) observed during the 3-month research period based on their caseload and working hours. The total population of children for each occupational branch was determined using the most recent data available through public data of Statistics Netherlands (Statline).

Prevalence rates for each occupational branch and each type of maltreatment were calculated with the following formula:

$$x = \frac{C * S}{Tot_s} * Tot_{pop}$$

In this formula, x represents the estimation of the number of maltreated children, C is the number of cases reported during the 3-month period, S represents the seasonal factor, Tot_s is the total number of (potentially) observed children by the sentinels from an occupational branch, and Tot_{pop} represents the total population of Dutch children belonging to an occupational branch of sentinels (Euser et al., 2010; Euser et al., 2013). The total prevalence estimate of maltreated children in the Netherlands is computed by summation of the prevalence estimates of the sentinels and the Safe at Home data (while excluding overlapping cases).

2.6. Comparison with 2005 and 2010

The design of the NPM-2017 was similar to the design of the previous NPM-studies (i.e., same recruitment procedure, registration form, period of data collection, and coding procedure), allowing for a cross-time comparison of the data. However, in addition to the changes in the coordination of reports of suspected child maltreatment by Safe at Home (formal CPS agencies), several changes in the youth care system had implications for the cross-time comparison. In 2010, some of the hospitals had not yet installed a child protection officer; therefore, for each selected hospital either a child protection professional or a pediatrician and a professional of the

emergency department were included as sentinels. In 2017, all hospitals had a child protection professional and, in line with the mandatory Protocol for Child Abuse and Domestic Violence Act, all cases of suspected child maltreatment in the hospital were reported to this professional. Moreover, the police implemented a new registration system for child maltreatment cases in October 2017, which transmits all registered cases directly to Safe at Home. As a result, the police were not included as a separate occupational branch in the NPM-2017 as there would be a complete overlap with Safe at Home data.

Furthermore, since the NPM-2005, additional organizational branches have been included in the NPM (i.e., professionals in hospitals, home-based childcare, and kindergartens, see Table 1). To make reliable comparisons with the NPM-2005 as well, we used reports from the occupational branches included in all three studies (Table 1). For these comparisons, data of the previous NPM-studies were reanalyzed in accordance with the analyses used in the current study.

To determine whether the prevalence rates of 2017 significantly changed since 2005, the 84 % confidence intervals around each prevalence estimate were calculated. We used 84 % confidence intervals for significance testing, since they lead to a probability of overlap of approximately 5% ($p < .05$; Goldstein & Healy, 1995; Julious, 2004; Payton, Greenstone, & Schenker, 2003). If confidence intervals of two estimates (partly) overlap, estimates are assumed to be not significantly different.

2.7. Risk factors

To test child and family characteristics as potential risk factors, the distribution of these factors in families in the general population was determined based on non-public microdata from Statistics Netherlands (CBS). The following risk factors were investigated: low educational level (highest educational level completed by both parents was elementary school or less), immigrant status (first-generation—being born outside the Netherlands—or second-generation—having at least one first-generation immigrant parent), parental unemployment (both parents not having a paid job), single parenthood, large family size (defined as families with three or more children), stepfamilies, young age of the child, and child's female gender. Family factors of the reported children were reported by the sentinels. These variables contained considerable amount of missing data since specific information on the family was not known by the participating professionals. Especially demographic information of the parents had a large number of missing values: 81 % of parental education, 62 % of parental unemployment, and 48 % of immigration status had a missing value. Other risk factors showed fewer missing values: family composition (i.e., single parent family or step-family) contained 6% missing values, number of children in the household 10 % missing values, child age 7% missing values, and child gender 4% missing values. Pairwise deletion (available-case analysis) of missing data was applied when computing the risk ratios.

Risk ratios were calculated as the ratio between the proportion of maltreated children within the group exposed to the risk factor versus the proportion of maltreated children within the group not exposed to that risk factor. In addition, 95 % confidence intervals were calculated around the risk ratios (RR) to be able to express the precision of each estimate (Rothman, 2002). When a confidence interval exceeds and does not include the value 1, the characteristic can be interpreted as a significant risk factor for child maltreatment. Significance of risk ratios should, however, be interpreted in combination with the general width of the confidence interval (Rothman, 2002; Euser et al., 2013).

3. Results

3.1. Prevalence estimates

Sentinel reports resulted in a prevalence estimate of 81,398 children with a 95 % confidence interval of 68,340 – 94,455, which is equivalent to 20–28 per 1000 children (Table 2). To compute a total prevalence estimate by combining the Safe at Home data (after removal of duplicates, see Method) and the sentinel reports, the more cautious estimate of the Safe at Home data was added to the lower bound of the 95 % confidence interval of the estimate based on sentinel reports. Similarly, the more liberal estimate of the Safe at Home data was added to the upper bound of the 95 % confidence interval of the estimate based on sentinel reports. This led to a total prevalence estimate of 89,160 to 127,190 children, indicating that 26–37 per 1000 children in the Netherlands experienced at least one form of child maltreatment in 2017.

Table 2

Number of children reported by the sentinels, prevalence estimates, and 95 % confidence intervals (CI) per type of maltreatment.

Type of maltreatment	N of reported children	Prevalence estimate per 1000	Estimated number of maltreated children	95 % CI
Sexual abuse	29	0.75	2,568	485–4,651
Physical abuse	70	2.90	9,883	3736–16,030
Emotional abuse	62	3.84	13,058	5600–20,515
Physical neglect	197	9.66	32,892	21,482–44,302
Emotional neglect	484	18.69	63,620	47,995–79,246
Other abuse	56	0.50	1,714	383–3,045
Total ^a	663	23.91	81,398	63,247–99,548

Note: data from the Safe at Home organizations are not included in this table.

^a Prevalence estimates for the different types of maltreatment do not sum up to the total, because children may have experienced more than one type of maltreatment.

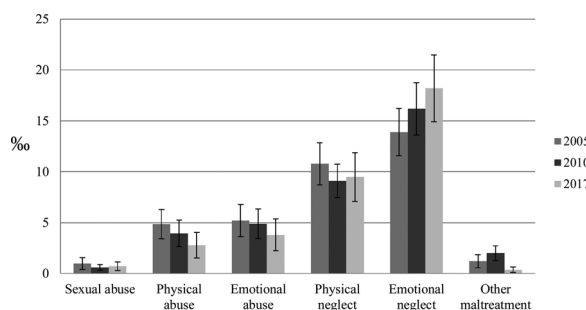


Fig. 1. Prevalence estimates of the different types of child maltreatment in 2005, 2010 and 2017 (including 84 % confidence intervals).

Note: prevalence estimates are based on the data of sentinel groups that participated in all three years: home-based and center-based child care, primary schools, secondary schools, well-baby clinics, general practitioners, shelters for battered women and Child Protection Board.

In addition, separate prevalence estimates for each type of child maltreatment, based on sentinel data, are presented in Table 2. Because 29 % of the children were reported to experience more than one type of maltreatment (25 % two types, 3% three types and 1% four or more types) the prevalence estimates for the separate types of maltreatment do not add up to the total prevalence. Emotional neglect was the most prevalent type of maltreatment (63,620; 95 % CI: 47,995–79,246), followed by physical neglect (32,892; 95 % CI: 21,482–44,302), emotional abuse (13,058, 95 % CI: 5,600–20,515), physical abuse (9,883, 95 % CI: 3,736–16,030), and finally sexual abuse (2,568, 95 % CI: 485–4,651). As these numbers were based on sentinel report only – Safe at Home transfers the case directly to a third party in a large part of the cases without investigating themselves – they present an underestimation of the actual prevalence of these types of maltreatment in the population (Creighton, 2002).

3.2. Changes over a period of 12 years

To compare prevalence estimates of the NPM-2005, 2010, and 2017, we computed prevalence estimates based on the data of sentinel groups that participated in all three prevalence studies: home-based and center-based child care, primary schools, secondary schools, well-baby clinics, general practitioners, shelters for battered women and the Child Protection Board. This resulted in a prevalence of 2.3 % (84 % CI: 1.9–2.6 %) in 2005, 2.2 % (84 % CI: 1.9–2.5 %) in 2010, and 2.3 % (84 % CI: 1.9–2.7 %) in 2017. All confidence intervals show partial overlap indicating no significant differences in prevalence estimates over the years. Since the data collection method of the Child Protection Board was in 2017 slightly different from the previous years (see Method), a comparison between estimates without the data of the CPB was also computed. Similar to the prevalence estimates including CPB data, confidence intervals of the three years partly overlap indicating that there is no significant change in the prevalence of child maltreatment in the Netherlands from 2005 to 2017. In addition, separate comparisons for each type of child maltreatment are presented in Fig. 1. Parallel to the comparison of the total estimates, for most of the types of child maltreatment the prevalence estimates did not change over the course of 12 years. Only the prevalence of other types of maltreatment declined in 2017 compared to 2010 and 2005. Again, results without CPB data showed similar results.

3.3. Perpetrators

For most of the reported cases of child maltreatment the perpetrator or perpetrators were known by the sentinel (98.9 %). In most of these cases the perpetrator was the child's parent(s); in 86.8 % of the cases the biological mother was involved and in 63.0 % of the cases the biological father was involved. In the majority of cases (52.5 %) both parents were involved as perpetrator, in 28.9 % the mother acted alone and in 5.4 % mother acted together with another person, for fathers these percentages were 9.0 % and 1.5 %, respectively. Moreover in 0.7 % of the cases a foster or stepparent was involved as a perpetrator, and in 1.4 % of the cases no parent was involved (for the remaining 0.6 % of the reported cases of child maltreatment the perpetrator was unknown).

3.4. Risk factors

Risk ratios (and 95 % CIs) of family and child factors, based on sentinel data, are presented in Fig. 2. The largest risk factor for child maltreatment was a low parental educational level, however this is also the risk factor with the widest confidence interval, probably due to the large number of missing data on parental education (Table 3). Other significant risk factors are parental unemployment, first- and second-generation immigrant status, single parenthood and stepfamilies. A large family size was a risk factor for child maltreatment. However, contrary to our hypothesis only a family-size of four or more children showed an elevated risk, while no such risk was found for families with three or more children compared to families with one or two children (Table 3). Finally, children aged 3 years or younger had a higher risk of experiencing maltreatment than children older than 3 years. The overall risk on child maltreatment was not increased for a certain child gender. However, girls had an increased risk of experiencing sexual abuse ($RR = 6.58$; 95 % CI: 5.46–7.93) and emotional abuse ($RR = 1.58$; 95 % CI: 1.30–1.92).

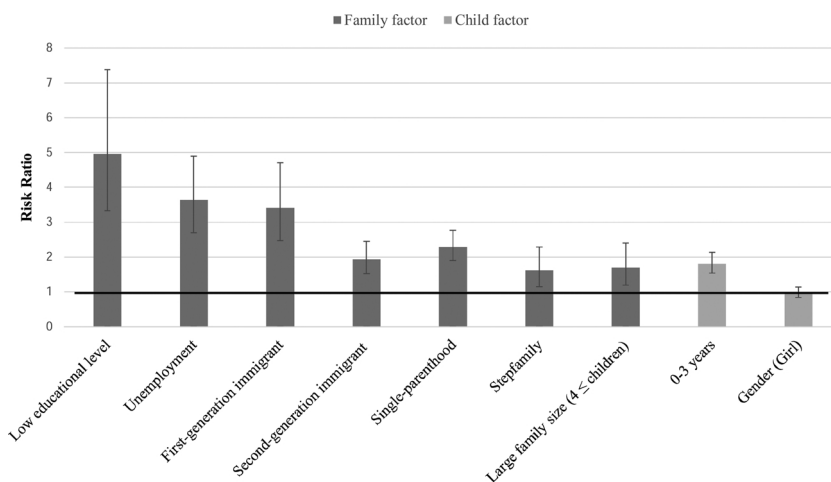


Fig. 2. Risk ratios of family and child factors.

Note. Risk factor is significant if the 95 % CI does not include 1.0 (bold line in figure), data from the Safe at Home organizations are not included in this figure.

Table 3

Risk on child maltreatment for family and child factors.

Risk factors	Risk on child maltreatment		Missings	Risk Ratio	95 % CI
	Exposed	Non-exposed			
Low educational level	10.4 %	2.1 %	81.4 %	4.95*	3.32–7.38
Parental unemployment	9.1 %	2.5 %	62.2 %	3.64*	2.70–4.91
First-generation immigrant	6.1 %	^a 1.8%	47.6 %	3.41*	2.47–4.70
Second-generation immigrant	3.4%	^a 1.8%	47.6 %	1.93*	1.52–2.45
Single-parenthood	6.0 %	2.6 %	5.7 %	2.29*	1.90–2.77
Stepfamily	5.1 %	3.2 %	5.7 %	1.62*	1.15–2.29
Family size (3 ≤ children)	3.3 %	3.2 %	9.6 %	1.01*	0.80–1.26
Family size (4 ≤ children)	5.3 %	3.2 %	9.6 %	1.69*	1.19–2.39
0-3 years old	3.7 %	2.1 %	6.7 %	1.81*	1.53–2.13
Gender (Girl)	2.4 %	2.4 %	4.2 %	0.98*	0.84–1.14

Note: data from the Safe at Home organizations are not included in this table.

* Significant risk ratio, indicating an increased risk on child maltreatment of children exposed to the risk factor.

^a Non-exposed group is the population not belonging to the first- or second-generation immigrants.

3.5. Family context: domestic violence

In about half of the families (45 %) of the reported children, sentinels suspected domestic violence as part of, or in addition to, the reported child maltreatment. Most of these families experienced intimate partner violence (58 %) followed by violence between a parent and his or her ex-partner (17 %). Violence of a child towards a parent was reported in 9 % of these families, violence between other adults in 8%, violence between children in 4 % and other forms of domestic violence in 18 % of these families. In 9 % of these families, more than one type of domestic violence was reported.

4. Discussion

The third National Prevalence study of Maltreatment of children and youth in the Netherlands (NPM-2017) shows that the prevalence estimates of child maltreatment, based on sentinel reports, have remained stable since 2005. The NPM-2017 indicated that, based on sentinel report and Safe at Home data, 89,160 to 127,190 children or 2.6%–3.7% of all 0-17-year-old children in the Netherlands experienced at least one form of child maltreatment in 2017. Similar to the previous NPM studies (NPM-2005; Euser et al., 2010; NPM-2010; Euser et al., 2013), the most prevalent types of maltreatment reported by sentinels were emotional and physical neglect. Sentinel data further indicated that the majority of children were victimized by one or both of their parents, a finding that is in line with previous studies on perpetrators of child maltreatment (Jonson-Reid et al., 2018; Van IJzendoorn et al., 2007) and that strengthens the notion that families need external support to ensure safe environments for children.

The stable trend of child maltreatment in the Netherlands is similar to trends in child maltreatment in other Western developed countries (Finkelhor et al., 2015; Gilbert et al., 2012; Guthridge, Ryan, Condon, Moss, & Lynch, 2014; Witt et al., 2018). Studies in the USA, Canada, Australia, New-Zealand, England, Sweden, and Germany (for the age-cohort of 14–25 year-old participants; Witt et al.,

2018) showed stable prevalence rates of child maltreatment from 2000 to 2010, 2011–2014 (USA; Finkelhor et al., 2015), and 2010–2016 (Germany; Witt et al., 2018). The lack of change in Dutch prevalence estimates might indeed reflect broader stability of the child maltreatment prevalence (implying that changes in child protection policies might not have been effective). However, it may also reflect an increased awareness of professionals while the prevalence is actually decreasing, possibly as a result of policies aimed at reducing child maltreatment that may be effective for all maltreated children or only for specific vulnerable groups. Finally, it could be that the actual prevalence of maltreatment has increased but that it has been reported less often by sentinels. This last explanation however seems less plausible in the Dutch situation given the increased efforts to enhance societal awareness and the specific efforts made in recent years to stimulate recognition of child maltreatment by professionals (see introduction). Given the covert nature of child maltreatment, it is difficult to untangle these possible explanations of the stable trend, a problem that is mentioned regularly in literature concerning trends in child maltreatment (Degli Esposti et al., 2019; Gilbert et al., 2012; Guthridge et al., 2014; Roehrkasse & Wildeman, 2019; Witt et al., 2018).

It may also take time for policy changes to actually affect child maltreatment prevalence rates. Unfortunately, direct evidence of the effectiveness of policies aimed at better identifying maltreated children and at providing the right help to these families is almost nonexistent. To know if these policies are actually effective on the short-term, it is important to more specifically and directly monitor the effect of policies aimed at reducing child maltreatment, in addition to regularly monitoring the prevalence of child maltreatment. Data should be routinely collected or made visible as indicators of policy effectiveness (e.g., waiting time for maltreatment investigations after a maltreatment report, number of re-reports, etc.). In addition, a few randomized controlled trials have shown the effectiveness of some specific interventions aimed at improving parenting skills, but effectiveness was tested for very few interventions and the overall effectiveness of targeted interventions is still insufficient (Euser, Alink, Stoltenborgh, Bakermans-Kranenburg, & van IJzendoorn, 2015; Van der Put, Assink, Gubbels, & Van Solinge, 2018). It is thus also important to invest in research on the effectiveness of child maltreatment interventions so the right tools can be implemented.

Similar to the prevalence estimates, the risk factors for child maltreatment remained stable across time. The largest risk factors for child maltreatment in the Netherlands, based on sentinel reports, were low parental education, parental unemployment, and a first-generation immigrant status of children, followed by single-parenthood. This is fairly similar to the results of the NPM-2010 (S. Euser et al., 2013), which indicated low parental education, parental unemployment, single-parenthood and 'non-traditional' immigrant status (which included the new immigrant groups that most likely include more first-generation immigrant children than the 'traditional immigrant' groups) as the largest risk factors; and the NPM-2005 (Euser et al., 2010), which found that low parental education and parental unemployment were major risk factors for child maltreatment. Moreover, living in a stepfamily and being between 0 and 3 years old were reoccurring risk factors over time. This stability in identified risk factors is remarkable since the computation of risk ratios has changed over the years: in the previous NPM studies, data from the National Kinship Panel Study (NKPS; Euser et al., 2010; Euser et al., 2013), a representative dataset on families in the Netherlands, was used as comparison sample, whereas the current study used data of the complete Dutch population. A risk factor that has slightly changed over the years is large family size. Whereas in 2010, families with three children or more were at risk for child maltreatment, the data of 2017 reveal that an elevated risk for maltreatment is present in families with four or more children. A possible explanation for this difference may be an underrepresentation of families with 3 or more children in the comparison sample of 2010. Based on the NKPS-data, 11 % of Dutch families in 2010 had 3 or more children, however public data of Statistics Netherlands (Statline) show that, in 2010, 17 % of the families had 3 or more children. Although these risk factors are rather stable over time, we should carefully interpret the overrepresentation of maltreatment in groups with specific family characteristics. Since the large number of missing data on family characteristics (a lot of sentinels had no information on parental education, ethnic background or family composition) may have amplified the risk ratios.

Furthermore, the NPM-2017 investigated the co-occurrence of domestic violence in families that were reported for child maltreatment by sentinels. In a startling 46 percent of the families, the reported child maltreatment occurred in a context of domestic violence, the majority of which consisted of inter-parental violence. This finding is in line with results of previous studies showing considerable overlap of childhood maltreatment and intimate-partner violence (Casaneva et al., 2009; Chan, 2011b; Edleson, 1999; Hamby et al., 2010; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008) and supports the theory that violence in one dyad within the family may be a marker for a dysfunctioning of the family system (Haskins, 2003). An explanation for the co-occurrence of child maltreatment and interparental violence may be that the violence used by maltreating parents is often aimed at multiple family members as perpetrators of IPV may consider physical maltreatment an accepted form of discipline (Duncan, 1999; Shields & Cicchetti, 2001). However, there is also evidence that female victims of intimate-partner violence have an increased risk of abusing and neglecting their children compared to females in non-abusive relationships (Coohey, 2004; Taylor, Guterman, Lee, & Rathouz, 2009). Child maltreatment by victims of IPV could be explained by increased stress and depression which may result in diminished tolerance of or ability to handle challenging child behavior. However, even when controlling for elevated stress and depression of the victims, an increased risk for child maltreatment has been found (Taylor et al., 2009). This may indicate that different processes may explain the relation between IPV victimization and child maltreatment, such as the victim's tendency to over-control their children in an attempt to avoid a confrontation with the abusive parent (Coohey, 2004). Another explanation for the high co-occurrence of domestic violence and child maltreatment may be found in the overlap in ecological risk factors for both child maltreatment and domestic violence (Guedes et al., 2016), among which poverty, parental unemployment, substance abuse, psychopathology, delinquency, financial or parenting stress, poor health, and lower education (Herrenkohl et al., 2008). Finally, there is some evidence that intergenerational transmission of child maltreatment increases the likelihood of children who experienced maltreatment to become a victim of IPV and a perpetrator of child maltreatment (Renner & Slack, 2006). The high co-occurrence of child maltreatment and domestic violence implies that child maltreatment prevention should provide additional attention to other forms of

domestic violence. This additional focus is especially important since there is evidence that the effectiveness of successful child maltreatment prevention programs (e.g. Nurse-Family Partnership program) may be diminished in a family context of inter-parental violence (Eckenrode et al., 2000).

Some limitations of the current study should be mentioned. First, given the recent changes in the Dutch child and youth care system, registration of reported cases of possible child maltreatment by Safe at Home organizations may differ between municipalities. This may have influenced the comparability of the data between the regional Safe at Home organizations and the reliability of the prevalence estimates. Second, the response rate of sentinels was considerably lower in 2017 compared to 2010. In particular general practitioners, shelters for battered woman, and secondary schools were underrepresented compared to 2010. It is difficult to determine how this may have influenced the prevalence estimates, since it is conceivable that professionals do not participate because they had many suspicions of maltreatment and the time burden to report these to the study would be too large, or that they do not participate because they had no suspicions (despite the emphasis during recruitment on the importance of participating regardless of suspicions of child maltreatment) or for a different reason not related to their suspicions of child maltreatment. A smaller number of informants does imply a less reliable estimate of the prevalence and therefore wider confidence intervals.

The prevalence estimates and the lack of change in these estimates across time suggest the need for improved research to establish the effectiveness of policies concerning child maltreatment and both universal and targeted preventive interventions. Several changes in policies concerning child protection are aimed at intensifying the recognition of child maltreatment. Although this is without doubt a first crucial step for reducing child maltreatment, the efforts – provided they are effective – will be in vain if we lack the knowledge on how to best support high-risk families and effectively intervene in maltreating families to prevent or reduce child maltreatment. The policies that profoundly affect the lives of a sizeable subpopulation of children need to be substantiated by evidence concerning its effectiveness.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.chiabu.2020.104439>.

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