It should not hurt to be a child : prevalence of child maltreatment across the globe

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The prevalence of child maltreatment across the globe: Review of a series of meta-analyses

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Abstract

In this review we combine and compare results of a series of meta-analyses on the prevalence of child sexual, physical, and emotional abuse and of physical and emotional neglect, including 244 publications and 577 prevalence rates for the various types of maltreatment. Child maltreatment research seems to be dominated by research on sexual abuse, by studies in developed parts of the world, and by research using self-report measures. The overall estimated prevalence rates for self-report studies were 127/1,000 for sexual abuse (76/1,000 among boys and 180/1,000 among girls), 226/1,000 for physical abuse, 363/1,000 for emotional abuse, 163/1,000 for physical neglect, and 184/1,000 for emotional neglect. The overall estimated prevalence rates for studies using informants were 4/1,000 for sexual abuse and 3/1,000 for physical and for emotional abuse. Design and sample characteristics partly explained variation of self-reported prevalence rates. We conclude that child maltreatment is a widespread, global phenomenon affecting the lives of millions of children all over the world, which is in sharp contrast with the United Nation's Convention on the Rights of the Child.

Introduction

Hundreds of studies with estimated prevalence rates of child maltreatment have been published to date. The reported prevalence rate estimations show a wide range, from nearly 0% (i.e., Raiha & Soma, 1997; Sibert et al., 2002) to more than 90% (i.e., Meston, Heiman, Trapnell, & Carlin, 1999; Milner, Robertson, & Rogers, 1990). Thus, it remains unclear how many children's lives are touched by maltreatment. Part of the variance in prevalence rates may reflect real differences in the occurrence of child maltreatment, for example due to differences between types of maltreatment, between genders, or due to variation in geographical origin of the samples. Part of the variance may also be due to design features such as how child maltreatment was measured or what kinds of samples were used. Aiming to unravel the causes of variance in prevalence rates, we carried out a unique series of comprehensive meta-analyses on the prevalence of various types of child maltreatment (sexual abuse, Chapter 2; physical abuse, Chapter 3; emotional abuse, Chapter 4; physical and emotional neglect, Chapter 5), and in the current review we present a synthesis of these meta-analytical studies.

A general description of the different types of maltreatment can be found in the Report of the Consultation on Child Abuse Prevention (see Appendix A; WHO, 1999). This report describes *sexual abuse* as the involvement of children in sexual activity that they do not fully understand, are unable to give informed consent to, for which they are not developmentally prepared, or that violate the standards of the society in which these children live. *Physical abuse* is defined as the infliction of potential or actual physical harm by a caregiver caused by interactions or lack of interactions that are reasonably in control of this caregiver. The description of *emotional abuse* includes the failure to provide a developmentally appropriate, supportive environment that allows the child to develop a stable and full range of emotional and social competencies, according to the child's personal potentials and in the context of the society in which the child grows up. Again, these acts should be reasonably within the control of the caregiver. *Neglect*, including physical, emotional, and educational neglect, is described as the failure, within the limits of the caregivers' resources, to provide for the development of the child in all domains including health, education, emotional development, nutrition, shelter, and safe living conditions.

For each of the above mentioned types of maltreatment the global overall prevalence was calculated and the influences of sample characteristics and design features were investigated, allowing us to compare prevalence rates and to find out if study characteristics would exert similar or differential effects on the prevalence rates of different types of maltreatment. Given the devastating consequences of child maltreatment (e.g., Gilbert, Spatz Widom, Browne, Fergusson, Webb, & Janson, 2009) it is important to know how often child maltreatment occurs. This is especially salient in the light of the United Nation's Convention on the Rights of the Child (1989) in which the 194 ratifying countries state that they would take all possible measures in order to protect children form maltreatment.

In this review we combine and compare the results of our series of meta-analyses on the prevalence of sexual, physical, and emotional abuse, and of physical and emotional neglect including a total of 244 publications in which 577 prevalence rates were reported for the various types of maltreatment. We provide an overview of the body of maltreatment research, mapping the distribution of studies over time, types of maltreatment, and continent of origin of samples. Combining and comparing the results enables us to draw conclusions about the prevalence of different types of maltreatment that are based on this extensive body of research, allowing for conclusions with regard to measuring maltreatment rates and directions for future research.

Method

In this section we provide a synopsis of the methods used in the series of meta-analyses on the prevalence of child sexual abuse, (SA, Chapter 2), child physical abuse (PA, Chapter 3), child emotional abuse (EA, Chapter 4), and child physical and emotional neglect (PN and EN respectively, Chapter 5). More detailed information can be found in these publications.

Studies were included in (one of) the meta-analyses if the prevalence of at least one of the pertinent types of maltreatment was reported (a) in terms of proportions at the child level (excluding studies only reporting estimates at the family level) (b) for victims under the age of 18 years in (c) non-clinical samples, if (d) sufficient data were provided to determine the proportion under (a) as well as the sample size. Studies were included when either self-report measures were used or when informants such as medical professionals, child protection workers, or teachers reported on the maltreatment experiences of the children they were in touch with. When publications reported the prevalence of maltreatment separately for more than one sample, for example for male and female participants or for participants of various ethnicities, the prevalence rates were treated as independent rates. This procedure yielded 244 publications, providing 577 prevalence rates of different types of maltreatment.

The outcome that we coded was the proportion of children who were abused or neglected. In order to be able to weight effect sizes, sample size was also coded. Two types of moderators were coded: sample characteristics and procedural features (see the Appendix B). A detailed description of the coding systems can be found elsewhere (Chapters 2 through 5).

Results and Discussion

Mapping Maltreatment Research

The vast majority of the 244 publications that were included in the series of meta-analyses reported on the prevalence of SA (217 publications). These reports were on the prevalence of SA exclusively (130 publications) or included other types of maltreatment as well (87 publications). In 27 publications, the prevalence of SA

was not reported. In these publications, information on the prevalence of PA only was provided in 21 publications, and six publications reported on PA and on other types of maltreatment. As shown in Figure 1, the 244 publications included 577 prevalence rates for the various types of maltreatment: 331 for SA (323 self-report; 8 informant-report), 168 for PA (157; 11), 46 for EA (42; 4), 17 for EN (16; 1), and 15 for PN (13; 2). Figure 2 gives an overview of the number of studies per year for each type of maltreatment, illustrating that the start of research on (the prevalence of) child maltreatment seems to have been dominated by research on SA. Research on PA started considerably later (although research on harsh physical punishment preceded PA and SA research), soon to be followed by research on the other types of maltreatment.

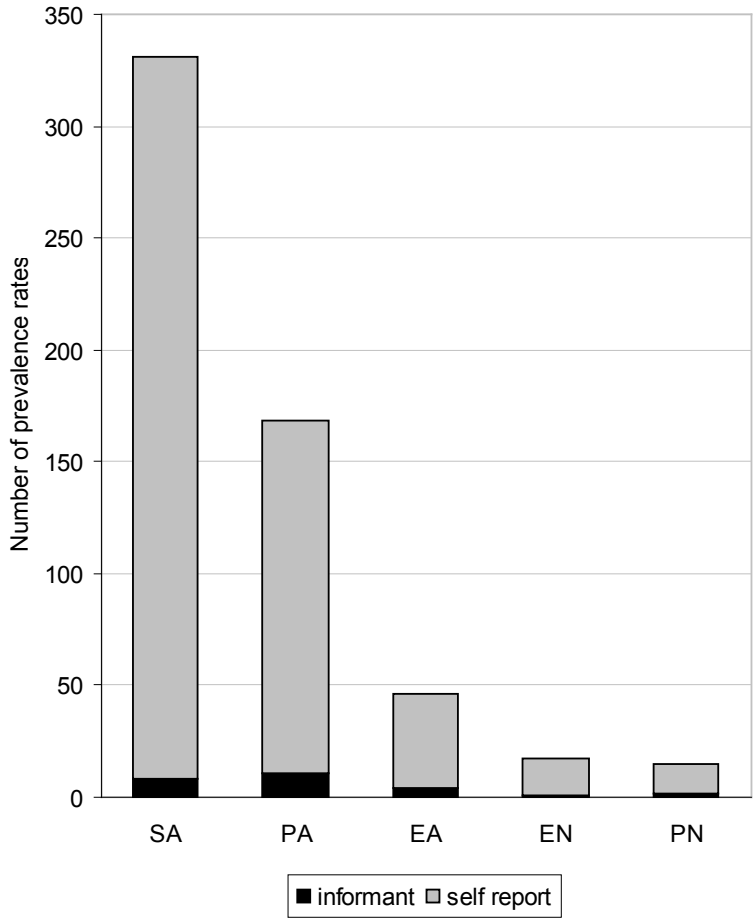

Figure 1. The number of prevalence rates reported for different types of maltreatment. SA = sexual abuse; PA = physical abuse; EA = emotional abuse; EN = emotional neglect; PN = physical neglect.

Most prevalence rates were provided for samples originating from North America with Europe second in line and Africa and South America lagging behind (see Figures 3 a and b). No informant studies were conducted in South America and Australia. The main focus within all continents was on SA, with the exception of Africa where the one and only informant study reported on PA (see Figures 3 c and d). When more (self-report) studies were available for a continent, they reported on more types of maltreatment. This is illustrated by the eight South American prevalence rates distributed only over SA and PA, through the 35 prevalence rates for SA, PA, EA, and EN from Australia and New Zealand, to the additional rates for PN in the 94 European and the 339 North American prevalence studies (see Figure 3 c). Moreover, a hierarchy of type of maltreatment seems to exist with SA first in line followed by PA, EA, EN, and PN respectively: Prevalence rates for lower ranked types of maltreatment are reported exclusively in the presence of prevalence rates for the nearest-higher ranked type. For example, it is only when prevalence rates for PA (second in the hierarchy) are reported that prevalence rates for EA are also reported.

Three conclusions can be drawn from the distribution of child maltreatment research over types, time, and geographical areas. First, maltreatment research seems to be dominated by research on SA both in time (maltreatment research seems to have started with research on SA; see Figure 2) and number (SA research outnumbers the body of all other types of child maltreatment research together; see Figure 1), with studies on EA and neglect lagging far behind. Even after the start of research on other types of maltreatment, SA was the type of maltreatment

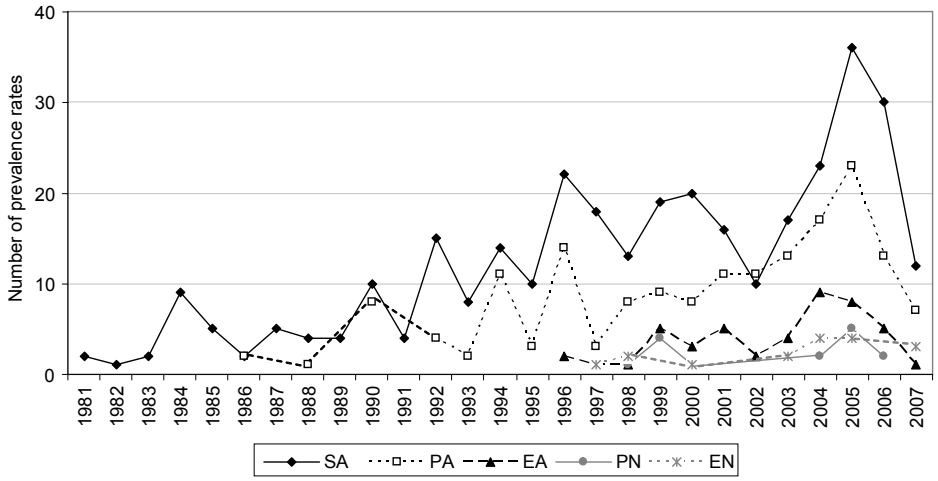

Figure 2. Number of prevalence rates per type of maltreatment per year. SA = sexual abuse; PA = physical abuse; EA = emotional abuse; EN = emotional neglect; PN = physical neglect

most frequently investigated (see Figure 2). Confirming this special interest in SA, it is the only type of maltreatment that elicited two meta-analytic studies (Pereda, Guilera, Forns, & Gómez-Benito, 2009b; Chapter 2).

Knowing that the kickoff of the societal and scientific interest in child maltreatment was caused by a publication on child physical abuse (Kempe, Silverman, Steele, Droegemueller, & Silver, 1962), what can be the reason for the predominance of SA in maltreatment research? One of the reasons may be that SA was, or is, thought to have the most severe consequences for development. SA may also be more easily operationalized than other types of maltreatment, due to clear-cut boundaries between right and wrong. Behaviors that constitute SA were always considered wrong as opposed to parental disciplinarian behaviors that are part of PA and EA but could be seen alongside normative, good-enough parenting, although harsh and inappropriate. Finkelhor (D. Finkelhor, personal communication, January 16, 2012) suggested some additional reasons. Formulating boundaries for PA and EA may be felt as involvement with parental rights and family rearing practices and thus raises different – political – issues than SA. Also, perpetrators of SA are more often extra-familial compared to perpetrators of other types of maltreatment, making SA less threatening to family structures than other types of maltreatment and as such easier to investigate. Further, publicity is more often raised for SA than for other types of maltreatment which can by be illustrated, for example, by the current public interest for SA in religiously run boarding schools in several countries. And finally, policy makers and social scientists were influenced, at least in the United States, by the social agenda of the feminist movement that included SA but not other types of maltreatment as a central theme.

A second conclusion from the synthesis of our meta-analyses is that child maltreatment research seems to be concentrated in countries with a Western culture. The vast majority of the samples studied originate from North America and Europe whereas research in the non-Western cultures of Africa, South America, and Asia is lagging far behind. This state of affairs illustrates Arnett's (2008) observation that psychology research is concentrated in North America and thus represents only approximately five percent of the world population while conclusions are often extrapolated to the world population. Reports on the prevalence of maltreatment in non-North-American and non-European parts of the world exist in insufficient numbers for meta-analytical calculations to estimate the prevalence of maltreatment in vast parts of the world, with billions of people that are heavily underrepresented in child maltreatment research. We do recognize, also, that our grouping of countries into continents is both broad and coarse, and that the within-continent variability of prevalence rates is large (i.e., Chapter 3). In this respect, it is imperative to increase the body of maltreatment research, focusing both on non-Westernized parts of the world and on types of maltreatment that seem to have been neglected so far.

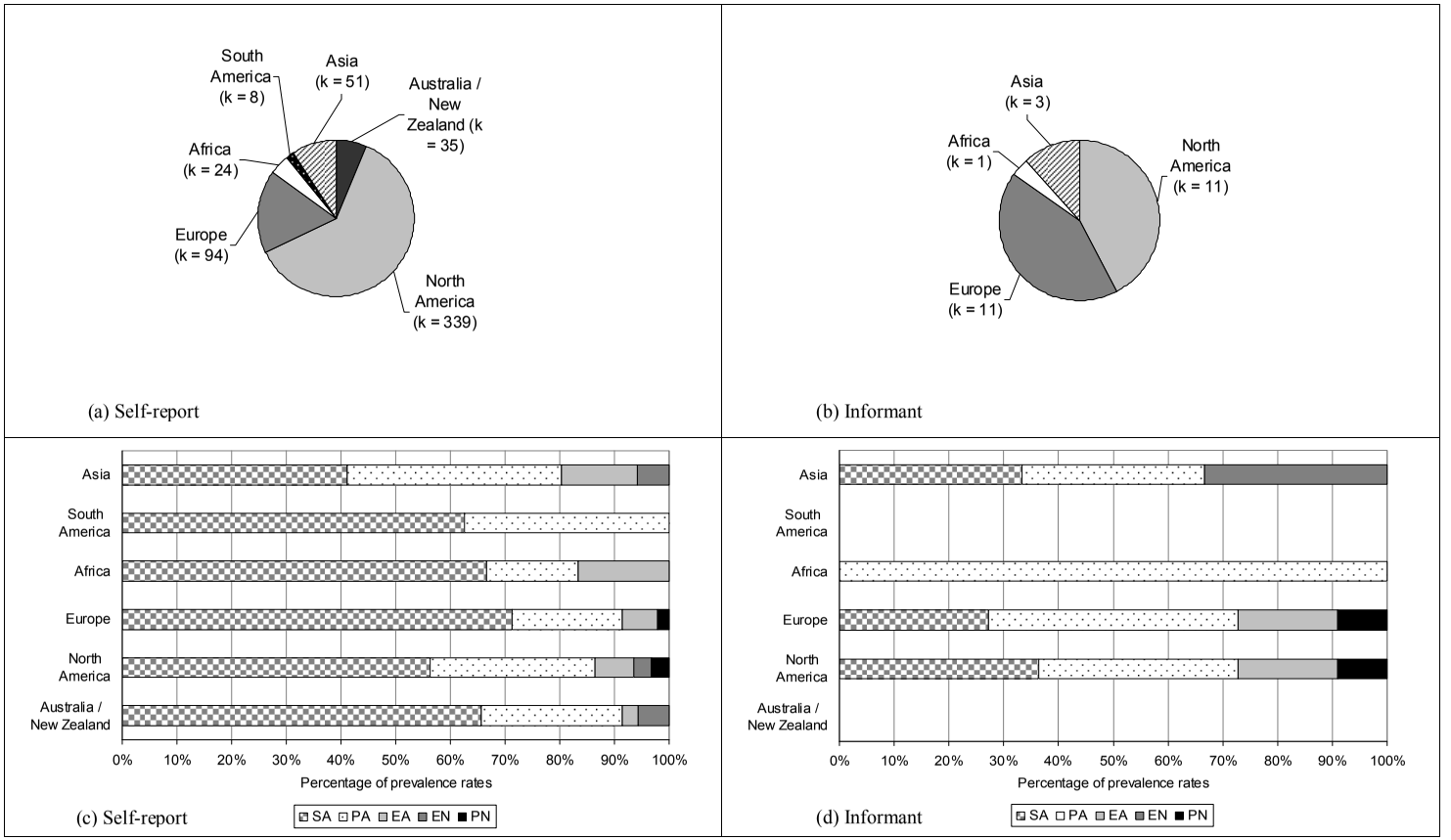

Figure 3. Number of prevalence rates per continent (a,b) and percentage of prevalence rates (c,d) for different types of maltreatment per continent.

Third, the series of meta-analyses shows that the number of informant studies is only a fraction of the number of self-report studies. This may have both practical and financial reasons. From a practical point of view, informant studies are more difficult to carry out than self-report studies. Recruiting informants is more cumbersome than recruiting participants for self-report studies. Moreover, most informant studies are conducted using nationally representative, large samples, increasing the cost of such studies. Further, many self-report studies are initiated by universities or other research organizations whereas most informant studies appear to be government initiated or at least need government endorsement because of the unavoidable need to have access to government-driven systems for data-collection (i.e., police records, social services, child protection services) or for recruitment of informants (i.e., child welfare workers, teachers). Governments might have other priorities for their scarce resources, or they might be hesitant to support the potential discovery of unwelcome facts.

Prevalence Rates

We consistently found a vast gap between the combined prevalence rates of informant studies and studies using self-report measures of child abuse. This is in line with the results of studies linking self-reports to official records (Brown, Cohen, Johnson, & Salzinger, 1998; Gilbert et al., 2009; Johnson, Cohen, Brown, Smailes, & Bernstein, 1999). Combined prevalence rates from informant studies for SA, PA, and EA were 0.4% (85% *CI*: 0.1 – 1.4), 0.3% (85% *CI*: 0.1 – 1.2), and 0.3% (85% *CI*: 0.2 – 0.6) respectively (rates for EN and PN could not be calculated because of a lack of sufficient informant studies), and were strikingly lower than combined prevalence rates from self-report studies, with 7.6% (85% *CI*: 6.4 – 8.5) for SA among boys, 18.4% (85% *CI*: 16.9 – 19.2) for SA among girls, 22.6% (85% *CI*: 20.3 – 25.1) for PA, and 36.3% (85% *CI*: 30.2 – 42.9) for EA. The combined self-reported prevalence rates of PN (16.3%; 85% *CI*: 13.1 – 20.0) and EN (18.4%; 85% *CI*: 14.3 – 23.4) did not differ from each other or from the prevalence rates of PA and SA among girls, as indicated by non-overlapping 85% confidence intervals (see Figure 4).

Informant versus self-report. Several reasons for the large difference in prevalence rates between informant-report and self-report may be mentioned. To start with, most informant studies are based on reports by professionals to child protective services, and therefore capture only part of the proverbial iceberg compared to self-report studies. According to Creighton (2002) this iceberg has five levels: (1) those children who are reported to the police as having been chronically abused or neglected; (2) those children who are reported to child protection agencies and agreed as being in need of protection i.e. registered; (3) those children who are reported to child protection agencies by other professionals such as doctors and health personnel and by the general public; (4) abused or neglected children

who are recognized as such by neighbors or relatives but are not brought to the attention of a professional agency; (5) abused or neglected children who have not been recognized as such by anyone. Informants usually report on the first to the third level whereas the participants in self-report studies also include the fourth and fifth level, thus revealing more of the iceberg than informant studies.

Further, the prevalence rates reported in informant studies usually cover a one-year period whereas the self-reported prevalence of maltreatment generally covers longer periods of childhood. In this respect, the distinction between incidence and prevalence rates comes to mind. *Incidence* refers to the number of new cases of abuse reported or detected during a specific, restricted period of time (Fallon et al., 2010; Peters, Wyatt, & Finkelhor, 1986), often in the context of child protective

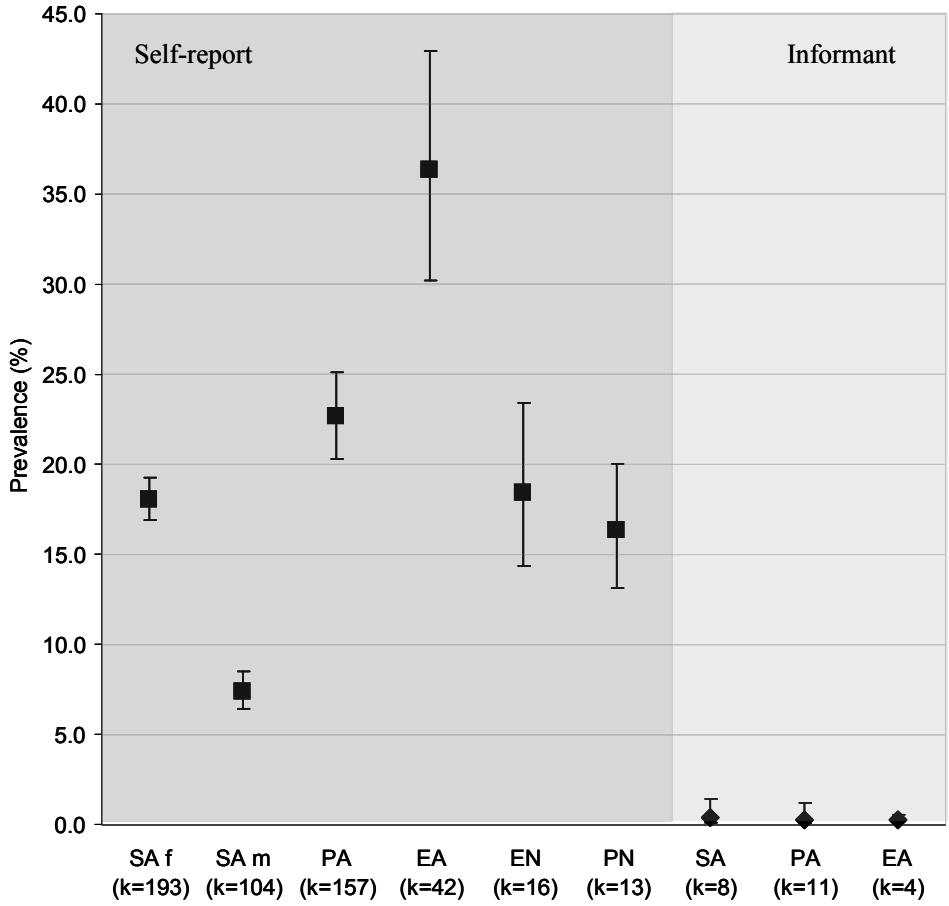

Figure 4. The estimated prevalence of self-report (squares) and informant (diamonds) studies with their 85% confidence intervals. SA = sexual abuse; f = female; m = male; PA = physical abuse; EA = emotional abuse; EN = emotional neglect; PN = physical neglect.

services. Incidence studies may underestimate the occurrence of maltreatment (Leventhal, 1998), not only because only a small proportion of maltreatment cases may be reported to child protective services or other authorities (Goldman & Padayachi, 2000; Leventhal, 1998; Peters et al., 1986) but also because fewer maltreatment experiences are captured than prevalence studies due to the limited time frame of incidence studies. *Prevalence,* on the other hand, refers to the number of individuals having experienced maltreatment during childhood (Fallon et al., 2010; Peters et al., 1986). Life-time prevalence is generally assessed in self-report studies, since participants are usually asked to report on their experiences of maltreatment during their entire childhood and adolescence.

However, with regard to studies on maltreatment based on informants (in combination with child protective services files) the distinction between incidence and prevalence may not be as clear-cut as it seems to be. First, the informants might cover more cases than the cases that are officially reported to child protective services, certainly in countries without a legal obligation to report. Countries with such a legal obligation that also provide some protection for reporters seem to generate more CPS reports (Euser, Van IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2010). Second, it is impossible to ascertain that the cases reported by informants in incidence studies are the very first maltreatment experiences of a child and therefore incidence studies of maltreatment might better be regarded as studies of the current prevalence of maltreatment during a limited period of time (Van IJzendoorn et al., 2007; Alink, Van IJzendoorn, Bakermans-Kranenburg, Pannebakker, Vogels, & Euser, 2011).

With such a vast and consistent difference between prevalence rates from informant and self-report studies, a reflection on advantages and disadvantages of both types of research seems appropriate. An obvious drawback of self-report is the reliance on retrospective memory, which is often seen as unreliable and invalid whereas reports by informants are often judged representing substantiated – though probably only the most severe – cases of maltreatment. However, Hardt and Rutter (2004) conclude, based on an extensive review of studies investigating the validity of adult retrospective reports of adverse childhood experiences, that retrospective recall can be sufficiently valid when adverse experiences are reasonably operationalized and do not rely on judgment and interpretation of events.

Even though for some types of maltreatment an incidental experience could qualify as maltreatment (e.g., the one-time penetration by an uncle is sexual abuse), this is not the case for other types of maltreatment. For example, one of the key aspects of neglect or of emotional abuse is the ongoing nature of maltreatment experiences. This continuity of experiences may be difficult to assess in self-report measures, and better assessed by informants. Another difficulty of self-report is taking into account the circumstances under which maltreatment occurred. For example, neglect encompasses 'the failure to provide for the development of the

child in all spheres: health, education, emotional development, nutrition, shelter, and safe living conditions, *in the context of resources reasonably available to the family...*' (WHO, 1999). These resources of their parents are difficult to asses for children or adults reporting on their own maltreatment experiences, whereas informants may be in a better position to do so. On the other hand, some types of maltreatment such as sexual abuse may be more often invisible to informants than other types, and might be better assessed by solid, multi-item, behaviorally anchored self-report measures.

We conclude that both self-report and informant studies have advantages and drawbacks, and that part of the vast gap in reported prevalence rates of abuse between self-report and informants can be explained by the characteristics of these types of studies. We also conclude that the combined prevalence from informant studies is an underestimate, that the combined prevalence from self-report studies is probably an overestimate, and that the 'real' prevalence of maltreatment may be found in between the two extremes. It would be interesting to compare the rates of maltreatment in a study using both self-report measures and informants in the same randomized population sample.

Table 1. *Comparison of the influence of moderators on the self-reported prevalence between different types of maltreatment. * Indicates significance of a specific moderator; ns indicates non-significance; blank cells indicate that the influence of a specific moderator was not tested. SA = sexual abuse; PA = physical abuse; EA = emotional abuse; EN = emotional neglect; PN = physical neglect.*

	Direction of effect[1]	SA		PA	EA	PN	EN
		girls	boys				
Sample characteristics							
Gender	Girls > boys	*		ns	ns	ns	ns
Continent of origin samples[2]		*	*	ns	ns		
Economic development	Developing > developed	ns	*	ns	ns		
Respondent	Adult > child	ns	*	*	ns		ns
Procedural moderators							
Definition	Broader > narrower	*	ns	*	ns		
Type of instrument		*	ns	ns	ns		*
Instrument validated	Yes > no	ns	ns	ns	ns	*	ns
Number of questions	More questions > fewer	*	ns	*	ns	*	ns
Response rate	Higher response rate > lower	*	*	ns	*	*	*
Sampling procedure	Convenience > randomized	ns	*	ns	*	*	ns
Type of sample[3]	College > other types	ns	*	*	*		
Sample size	Smaller > larger	*	*	ns	ns	*	ns

[1]When significant and similar for all types of maltreatment for which a significant influence was found. [2]For SA, the results of pair-wise moderator-analyses with Continent of origin of samples were not reported in the original publication (Chapter 2). [3]For SA, the results of moderator analyses with Type of instrument were not reported in the original publication (Chapter 2).

Sample Characteristics

Due to an insufficient number of informant studies our analyses and conclusions are restricted to self-report studies. An overview of the influence of the moderators on the prevalence of the respective types of maltreatment is provided in Table 1. All subsets of moderator analyses remained heterogeneous meaning that a substantial amount of variance between study outcomes remained unexplained, even after the moderator analyses.

Gender was a significant moderator for SA, with a lower combined prevalence rate for boys than for girls (7.8% and 18.0% respectively), but no gender differences in the prevalence of PA, EA, PN, and EN were found. *Continent* of origin of samples significantly influenced SA prevalence for both genders. For girls, the combined prevalence rates in Australia and North America were higher than those in Asia and Europe. For boys, the combined prevalence rate in Africa was higher than the rates in Asia, Europe, and North America (for details, see Chapter 2). Continent of origin of samples was not a significant moderator for PA and EA indicating that the prevalence of these types of abuse did not differ between continents. Due to the small number of studies, the influence of continent of origin of samples could not be tested for PN and EN. In a similar vein, the influence of the level of *economic development* of the countries from which samples originated could not be tested for PN and EN. This moderator influenced the prevalence rate for SA among boys only, with a higher combined prevalence rate for developing countries than for developed countries. No differences between developing and developed countries were found for SA among girls, PA, or EA.

The *type of respondent* used in individual studies significantly affected the reported prevalence of SA among boys and the prevalence of PA, with adults reporting more abuse than children did. No such differences were found for SA among girls or for EA and EN, indicating that for these types of maltreatment it did not matter whether adults or children were the respondents. The influence of this moderator could not be tested for PN to due a lack of sufficient studies.

In sum, sample characteristics seem to influence the prevalence of SA more than the prevalence of other types of abuse. One explanation for this is a better power to detect differences between categories of moderators in the larger sets of SA studies compared to the sets of EA, EN, and PN studies. However, if this were the reason for the differences in significance of sample moderators, the same should be true for the other – design – moderators. A quick glance at Table 1 informs us however that significance is more evenly distributed among types of maltreatment for design moderators.

The gender differences that we found for SA may reflect real differences between girls and boys in the occurrence of SA, which may be explained by men being more often the perpetrators of SA than women (Finkelhor, 1994; Vizard, Monck, & Misch, 1995), making girls the target of SA more often than boys. However, gender differences in SA may also stem from boys' more reluctant attitude towards

disclosing their SA experiences (Dhaliwal, Gauzas, Antonowicz, & Ross, 1996; Finkelhor & Baron, 1986; O'Leary & Barber, 2008; Romano & De Luca, 2001; Spatz Widom & Morris, 1997), for example due to the fear of being regarded as the instigator rather than the victim of SA, of being labeled homosexual when abused by a man, or due to feelings of weakness and of failure (Dhaliwal et al, 1996; Romano & De Luca, 2001). Moreover, male victims who do disclose their SA experiences tend to do so later than female victims (O'Leary & Barber, 2008). This may contribute to higher rates for girls than for boys and explain our finding that the SA prevalence for boys was higher in adult samples than in child samples, a finding that was not replicated for girls (see Table 1). Disclosure issues may not apply to other types of maltreatment.

A higher prevalence among adults than among children was also found for PA, but not for EA. One of the explanations for the difference may be that children do not regard harsh physical punishment as PA. They may not consider their experiences as being outside the range of 'normal' parenting behavior because of their lack of experiences with parenting outside of their nuclear family. This may change when they reach adulthood, learn more about parenting, and reflect on their own childhood, and as a result they may be more likely to perceive their childhood experiences as physical abuse. The reason why we did not find a difference between children and adults reporting EA may be that many of the maladaptive parenting behaviors that constitute EA are employed by parents in moments of stress or tiredness and are labeled EA only when a sustained pattern of these behaviors exists (Glaser, 2002). Such a sustained pattern may be difficult to recollect or asses for both adults and children.

We found differences between continents for the prevalence of SA but not for the other types of maltreatment. This finding may of course reflect real cultural-geographical differences for the SA prevalence, and an absence of cultural-geographical differences for the prevalences of PA, EA, PN, and EN. For these types of maltreatment, the large variability of prevalence rates within the continents may overshadow differences between continents, a predominance of intra-cultural differences over inter-cultural differences that has also been found in other of child developmental domains (e.g., Van IJzendoorn & Kroonenberg, 1988).

The level of economic development does not seem to affect the prevalence of abuse with the exception of SA among boys. The influence of this moderator could not be tested for both types of neglect due to an insufficient number of studies. This is regrettable because higher levels of PN and EN may be expected in countries with scarce resources, making life-circumstances of most parents and children very difficult (as described by, i.e., Mbagaya, Oburu, & Bakermans-Kranenburg, in press). Given the dearth of studies investigating – the prevalence of – child neglect and given the severe consequences of neglect (Gilbert et al., 2009), more studies with a primary focus on child neglect should be undertaken, especially

in low-resource countries because the body of research in these countries is even more limited than in high-resource countries.

Design Features

Due to an insufficient number of informant studies our analyses and conclusions are restricted to self-report studies. An overview of the influence of the moderators on the prevalence of the respective types of maltreatment is provided in Table 1. All subsets of moderator analyses remained heterogeneous meaning that a substantial amount of variance between study outcomes remained unexplained, even after the moderator analyses.

The operational *definition* of individual studies was a significant moderator for SA among girls and for PA, with broader definitions yielding a higher combined prevalence rate than narrower definitions. The combined prevalence of SA among boys and of EA did not depend on whether broader or narrower definitions had been used. The influence of this moderator could not be tested for PN and EN due to a lack of sufficient studies. The *type of instrument* used to assess maltreatment exerted a significant influence on the prevalence rates of SA for boys and of EN (for details, see Chapter 2 and 5) but not on the other types of maltreatment. For male SA, the highest prevalence was found when computerized questionnaires were used and the lowest when paper-and-pencil questionnaires were used, with the prevalence rates of computerized interviews and face-to-face interviews falling in between (for details, see Chapter 2). For EN, we had to use the broad categories of interviews, which comprised face-to-face and computerized interviews, and questionnaires, which comprised computerized and paper-and-pencil questionnaires, because of a lack of sufficient studies in each separate category. Interviews yielded a higher combined prevalence than questionnaires (for details, see Chapter 5).

The influence of whether the instrument used was *validated* or not was significant for PN, with higher prevalence rates when validated instruments were used than when non-validated instruments were used. For SA among girls and boys, PA, EA, and EN, the combined prevalence was similar for validated and non-validated instruments. The *number of questions* used to establish maltreatment significantly influenced the reported prevalence of SA among girls, PA, and PN. Larger numbers of questions were related to a higher combined prevalence. The number of questions did not matter for SA among boys, EA, or EN.

Sampling method was a significant moderator for SA among boys, EA, and PN, with convenience samples yielding higher combined prevalence rates than randomized samples. This was not the case for the other types of maltreatment, indicating that the prevalence of SA among girls, PA, and EN did not differ between convenience and randomized samples. The *type of sample* significantly influenced the reported prevalence of SA for boys, PA, and EA. When college samples were used, the combined prevalence was higher than when other types of samples were

used. The influence of this moderator could not be tested for PN and EN due to a lack of sufficient studies. Smaller *sample sizes* were related to a higher combined prevalence rate for SA among boys and girls and for PN. The sample size did not influence the reported prevalence of PA, EA, and EN. *Response rate* influenced the reported prevalence for all types of maltreatment except PA. Higher response rates were related to higher combined prevalence rates.

A first observation about the influence of methodological factors is that the influence of the respective moderators was in the same direction for the various types of maltreatment. Interestingly, studies with better design features such as larger and randomized samples seem to yield lower combined prevalence rates, which may indicate that the lower-range prevalence rates are more representative of the prevalence rates in the population.

Even though the direction of influence of moderators is comparable, moderators seem to differentially affect the various types of maltreatment: Not all moderators were statistically significant for all types of maltreatment; neither did we find moderators that were consistently statistically non-significant. Why do these differences exist? Are some types of maltreatment more sensitive to how and in which sample the prevalence is measured? For example, for boys' SA prevalence, factors pertaining to measurement issues (the definition used, type of instrument, whether the instrument was validated, the number of questions asked) do not influence the prevalence but all sample characteristics and all methodological aspects that have to do with sampling (response rate, sampling procedure, type of sample, sample size) do influence the prevalence of SA for boys (Table 1).

A reason why the prevalence of SA among boys is particularly sensitive to sampling matters may be related to the issues with disclosure that we mentioned above. Men who have experienced SA as boys may be overrepresented in smaller samples because they are more willing to disclose their experiences once they have reached adulthood. Men who have experienced SA may also be overrepresented in convenience samples, a majority of which consist of participants recruited from psychology courses. The specific choice of study may be more common among boys who have experienced SA compared to boys who have not, precisely because of these adverse experiences.

Broader operational definitions, including a larger number of abusive behaviors, were associated with higher combined prevalence rates of SA among girls and of PA but, contrary to our expectations, not of SA among boys and of EA. With regard to EA, the narrower definitions mainly included verbal abuse whereas the broader, more comprehensive definitions also included other aspects of emotional abuse such as close confinement. Verbal abuse may be the most prevalent facet of emotional abuse, always occurring when other and rarer forms of emotional abuse take place, as such explaining the similar combined prevalence rates for studies using broader or narrower definitions of EA. If this is true, we may hypothesize that verbal abuse could serve as an indicator of emotional abuse as a

whole. This hypothesis remains to be tested in future research, preferably by using an instrument that includes multiple behaviorally specific questions targeting all the aspects of childhood emotional abuse, which would allow the investigation of the co-occurrence of different aspects. Regarding SA, stricter operational definitions mostly referred to penetration. A reason for the lack of differences in estimated prevalence rates between stricter and broader definitions for SA among boys may be that boys mostly experience the more severe forms of sexual abuse that are included in all definitions, although findings from primary research are inconclusive in this respect (Romano & De Luca, 2001).

An association of a larger number of questions with a more comprehensive definition of the respective types of maltreatment may be expected, and was indeed found. Moreover, larger numbers of questions were related to higher combined prevalence rates for some types of maltreatment. Multiple questions may lead to a higher reported prevalence than a single question because they may include more abusive or neglectful behaviors and more specific information on the various types of maltreatment with which participants can identify. In addition, multiple questions often have behaviorally specific formulations whereas single questions are often framed as a labeling question, leaving the interpretation of the concept of maltreatment to the participants. The use of labeling questions is more likely to lead to false negatives than to false positives (Baker & Festinger, 2011), which is in line with our findings of lower prevalence rates when fewer questions are used.

Which type of instrument was used and whether this instrument was validated did not influence the reported prevalence of most types of maltreatment. Past research was inconclusive about the magnitude of prevalence rates from studies using interviews or questionnaires, with some reviews noting that studies using interviews show higher prevalence rates than those using questionnaires (Pereda et al., 2009a; Wyatt & Peters, 1986) and others not reporting such a difference (Goldman & Padayachi, 2000; Pereda et al., 2009b; Wyatt & Peters, 1986). The influence of the type of instrument used may have been obscured by the influence of other moderators such as the operational definition and the number of questions used. As noted by Hardt and Rutter (2005), the type of instrument used matters less than how precisely the concept of maltreatment is defined and the level of specificity of the behaviors that participants are questioned about.

Limitations and Future Research

With this series of meta-analyses, our knowledge about the influence of sample characteristics and methodological factors on the reported prevalence of various types of child maltreatment has advanced, allowing for more informed decisions on the measurement of child maltreatment in future research. The most important lesson learned is that design features affect the reported prevalence of self-reported child maltreatment, and should thus be taken into consideration when estimating the prevalence in primary studies.

Some important questions remain to be answered. It is crucial to investigate the substantial gap between the prevalence rates of self-report studies and studies using informants by studying both informant and self-report data within a single, nationally representative randomized sample. When doing so, we recommend using identical, clearly operationalized criteria for the various types of maltreatment in both the informant and the self-report parts of the study. It has been shown that applying the criteria of abuse that were used by informants to the information provided by self-report questionnaires in the same study considerably reduced the rate of self-reported maltreatment (Alink et al., 2011).

The criteria used in a comparative study could correspond either to the legal definitions of maltreatment in the countries where the study is carried out so that the results would be useful for local policy makers, or the criteria could be derived from official international organizations, e.g., the definitions provided by the Consultation on Child Abuse Prevention of the World Health Organization (1999), which would ensure comparability among countries. The investment in studies using both informant and self-report measures in the same samples would certainly be warranted because they could provide the most accurate estimates of the prevalence of child maltreatment as a basis for policy measures regarding the prevention of child maltreatment, as well as a clarification of differences and similarities between these types of studies.

In our series of meta-analyses, we have not touched upon the issue of comorbidity between types of maltreatment, although it has been shown in past research that types of child maltreatment frequently co-exist (i.e., Alink et al., 2011; McGee, Wolfe, Yuen, Wilson, & Carnochan, 1995; Menard, Bandeen-Roche, & Chilcoat, 2004). This topic should be examined in future meta-analytic work; among others because the estimated self-reported prevalence of EA was considerably higher than the estimated prevalence rates of the other types of maltreatment. Some studies report that EA virtually always occurs when children experience other types of maltreatment (i.e., McGee et al., 1995), which may be the reason that EA shows the highest prevalence rate in our series of meta-analyses.

Conclusion

The current review of our series of meta-analyses shows that child maltreatment in all its forms is a global phenomenon of considerable extent, touching the lives of millions of children. This is in sharp contrast with the United Nation's Convention on the Rights of the Child (1989) in which the 194 ratifying countries (November 2009) explicitly state that they shall take all appropriate legislative, administrative, social, and educational measures, either nationally, bilaterally, or multilaterally, in order to protect children from maltreatment.

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Appendix A. *Description of types of maltreatment in the Report of the Consultation on Child Abuse Prevention (WHO, 1999).*

Sexual Abuse

Child sexual abuse is the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violate the laws or social taboos of society. Child sexual abuse is evidenced by this activity between a child and an adult or another child who by age or development is in a relationship or responsibility, trust or power, the activity being intended to gratify the needs of the other person. This may include but is not limited to:

- The inducement or coercion of a child to engage in any unlawful sexual activity.
- The exploitative use of child in prostitution or other sexual practices.
- The exploitative use of children in pornographic performances and materials.

Physical Abuse

Physical abuse of a child is that which results in actual or potential physical harm from an interaction or lack of an interaction, which is reasonably within the control of a parent or person in a position of responsibility, power or trust. There may be a single or repeated incidents.

Emotional Abuse

Emotional abuse included the failure to provide a developmentally appropriate, supportive environment, including the availability of a primary attachment figure, so that the child can develop a stable and full range of emotional and social competencies commensurate with her or his personal potentials and in the context of the society in which the child dwells. There may also be acts towards the child that cause or have a high probability of causing harm to the child's health or physical, mental, spiritual, moral or social development. These acts must be reasonably within the control of the parent or person in a relationship of responsibility, trust or power. Acts include restriction of movement, patterns of belittling, denigrating, scapegoating, threatening, scaring, discriminating, ridiculing or other non-physical forms of hostile or rejecting treatment.

Neglect or negligent treatment[1]

Neglect is the failure to provide for the development of the child in all spheres: health, education, emotional development, nutrition, shelter, and safe living conditions, in the context of resources reasonably available to the family or caretakers and causes or has a high probability of causing harm to the child's health or physical, mental, spiritual, moral or social development. This includes the failure to properly supervise and protect children from harm as much as is feasible.

[1]For the purpose of our series of meta-analyses, the neglect category was split into physical and emotional neglect.

Appendix B. *Coding system*

Variable	Coding and Description	
Sample characteristics		
Gender distribution in sample	1	Male
	2	Female
	3	Mixed
Continent	1	Australia including New Zealand
	2	North America including USA and Canada
	3	Europe
	4	Africa
	5	South America
	6	Asia
Country's level of economic development[1]	1	Developing
	2	Developed
Respondent	1	Child / adolescent
	2	Parent
	3	Adult
Procedural moderators		
Definition of abuse[2]	1	According to NIS
	2	Broader than NIS
	3	Stricter than NIS
Type of instrument	1	Paper and pencil questionnaire
	2	Computer questionnaire
	3	Face-to-face interview
	4	Telephone interview
Instrument validated	1	No
	2	Yes
Number of questions		Continuous; in case of a range, we coded the minimum
Response rate		Continuous
Sampling procedure	1	Random
	2	Modified random
	3	Convenience
Type of sample	1	Population
	2	Cohort
	3	High school
	4	College
	5	Occupational group
Sample size		Continuous
Evidence maltreatment	1	Self report[3]
	2	Informant

[1] According to the World Economic Outlook Database (2010)

[2] Based on the types of behavior included in the definition used in NIS-3 (Sedlak, 2001)

[3] Self report was also coded when parents were respondents