Child maltreatment : prevalence and risk factors

Euser, E.M.

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Child Maltreatment and Attachment

'No violence against children is justifiable; all violence against children is preventable'

Paulo Sérgio de Pinheiro

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Child maltreatment: Science, policy and practice

'Each school class has one maltreated child' was the alarming slogan in a recent Dutch campaign. Public awareness campaigns are actively initiated by the Dutch government to decrease child maltreatment rates and to enhance the knowledge of the public about the importance of signaling and reporting potential victims of child maltreatment in their own environment.

The far-reaching consequences of child maltreatment for society are increasingly recognized: estimates of the expenses of the direct and indirect costs of maltreatment in the Netherlands vary between 600 million and 5 billion euros (Meerding, 2005). These estimates are not very precise but give an adequate indication of the challenging implications of child maltreatment, covering a broad range of life domains. Many studies have shown that child maltreatment is linked to a wide spectrum of negative child outcomes, varying from increased suicide rates (Meaney & Szyf, 2005) to an elevated risk on cardiovascular diseases and an increased use of health care services (e.g. Felliti et al., 1998). Despite the huge psychological and financial costs for society, the number of actual victims of child maltreatment in the Netherlands was not available until recently. Furthermore, the significance of the harmful consequences of child maltreatment has not been reflected in scientific studies: in the past thirty years many (mainly retrospective and cross-sectional) studies on maltreatment were published, but very little systematic and longitudinal research was conducted. There is, however, an abundance of clinical experience with diagnostics, treatment and prevention of child abuse, although scientific evidence is not always available for the validity and effectiveness of most of these practices. Clinical experience has repeatedly documented the relation between child maltreatment and very disturbed attachment relationships in the family.

Attachment disturbances

Attachment: Normative and deviant patterns

Attachment theory (the founding father of this theory was the child psychiatrist John Bowlby, 1969) emphasizes the evolutionary origin and importance of attachment for the survival of an infant. Each child needs an attachment figure for protection and care in the first years of life. In this vulnerable age period, infants' (negative) emotion regulation is dependent on the external world around them, in particular represented by children's attachment figure, usually their parent(s) and/or other caregivers. In interaction, the caregiver learns to interpret the

subtle or explicit signals for care and attention communicated by the child. An attachment relationship serves the development of emotion regulation in a young infant, on a psychological level (Cassidy, 1994) as well as on a neurobiological level (Meaney & Szyf, 2005).

Although attachment is an indispensable part of the evolutionary heritage of each child, large differences can be observed in the formation of the first attachment relationship. The largest group of children (across the world approximately 65%) develops a secure attachment relationship. The quality of an attachment relationship can be observed in a standardized observation method called 'the Strange Situation Procedure' (Ainsworth, Blehar, Waters & Wall, 1978), a stressful laboratory procedure with several separations from and reunions with the caregiver. Children with a secure attachment relationship show a minimum of insecure attachment behaviors such as resisting and avoiding the caregiver, and they easily return to play after reunion with the caregiver. Children with an avoidant attachment relationship (circa 25%) seem to be unaffected when the caregiver disappears, but their emotional balance is disrupted, as shown for example by an increased heart rate. These children avoid their caregiver at reunion, fearing to evoke a rejecting reaction when showing their negative emotions too explicitly. Ambivalently attached children (circa 15%) on the contrary maximize their negative emotions; they cry loudly and are clinging on to their caregiver, but simultaneously show their angry distress by resisting behaviors, like pushing the caregiver away. These behaviors are displayed as a functional strategy to draw the attention of a caregiver who is often (mentally) absent. Finally, there are children with one of the organized attachment patterns who simultaneously show disorganized behaviors, for example upon reunion with the caregiver after a short separation (in non-clinical populations approximately 15% of the children). These disorganized behaviors of a child point to an irresolvable paradox: the caregiver is perceived by the child as the only potential source of comfort and care while at the same time as a source of unpredictable fear. Hesse and Main (2006) call this 'fright without solution'. The disorganized child shows strange, contradictory, bizarre and unexplainable behaviors, for exampling stilling, freezing, and repeatedly disrupted attempts to approach the caregiver. These disorganized behaviors reflect fear, doubt and confusion regarding the caregiver, causing a breakdown of the regular strategy to cope with distress by means of consistently avoiding, resisting or searching for comfort.

Mary Main and Judith Solomon designed a coding system for reliably observing disorganized attachment in the Strange Situation Procedure. Disorganized behavior is all behavior that does not fit in one of the three existing strategies to

cope with stress in strange situations in the presence of a caregiver, and for which no neurobiological etiology is present. The system consists of seven main categories (Main & Hesse, 1990):

1. Sequential display of contradictory behavior patterns
2. Simultaneous display of contradictory behavior patterns
3. Undirected, misdirected, incomplete, and interrupted movements and expressions
4. Stereotypies, asymmetrical movements, mistimed movements, and anomalous patterns
5. Freezing, stilling, and slowed moments and expressions
6. Direct indices of apprehension regarding the parent
7. Direct indices of disorganization or disorientation, especially in the first moments after reunion with the parent

Child abuse and disorganized attachment

Child maltreatment is one of the most important antecedents of disorganized attachment (Hesse & Main, 2006). In one of the first studies on disorganized attachment, Carlson, Cicchetti, Barnett, and Braunwald (1989) categorized 82% of the sample as disorganized attached. Unfortunately, the number of replications of this pioneering study is small. In Figure 1, the outcomes of five relevant studies on child maltreatment and disorganized attachment are presented, with a

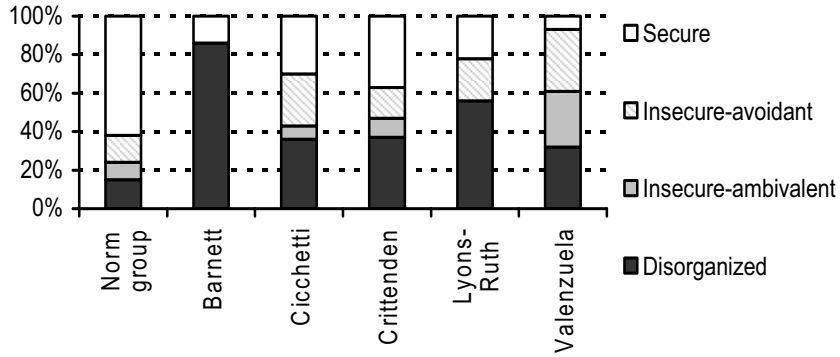

Figure 1. *Attachment Distribution in Studies on Child Maltreatment and Disorganized Attachment, Compared with a Norm Group Derived From the Meta-analysis of Van IJzendoorn, Schuengel, & Bakermans-Kranenburg (1999)*

total of 211 children. The norm group is derived from the meta-analysis of Van IJzendoorn, Schuengel, and Bakermans-Kranenburg (1999).

We will briefly describe these studies with respect to their results on maltreatment and disorganized attachment. Crittenden (1988) observed attachment in 95 mother-child dyads with some type of maltreatment; in 22 families abuse occurred, in 31 dyads both abuse and neglect were present, and for 22 children marginal abuse was diagnosed. The control group consisted of 29 non-maltreating parent-child dyads. A large part of the families was enrolled in the study by child protection services or other mental health service providers. All families had a very low income, a low educational level and the sample consisted mainly of young, single parents (mean age was 23.7 years). From the total group of maltreated children (all types) 37% showed disorganized attachment, compared with 7% in the group without abuse or neglect.

Lyons-Ruth, Connell, and Grunebaum (1990) studied a sample of 31 children at high risk because of inadequate parenting, maternal depression and poverty. The sample received weekly home visits and was compared with a high-risk group without intervention (n = 10) and a control group of 35 children. In the intervention sample, nine children were actually maltreated. From these maltreated children, 56% was disorganized attached and only 7% had a secure attachment relationship.

Barnett, Ganiban and Cicchetti (1997) conducted a longitudinal study on maltreated children and non-maltreated children from deprived families. Attachment was measured on 12, 18 and 24 months. An overwhelming majority of the 22 maltreated children (86%) were disorganized attached, whereas this was the case for only 27% of the non-maltreated high risk children. Avoiding and ambivalent attachment patterns were not observed in the maltreated children, but 14% had developed a secure attachment relationship. In the non-maltreated high risk group of children from a deprived background, 46% of the children were securely attached.

In the longitudinal study of *Cicchetti and Barnett* (1991) attachment was observed in the Strange Situation at 30, 36 and 48 months in a group maltreated children and in a group non-maltreated children, both from families with low socio-economic backgrounds. At each time point, children from the maltreated group displayed significantly more insecure attachment behaviors than the non-maltreated children. At one year of age, 36% of the children were disorganized attached, while this was the case for only 15% of the control children.

The study of *Valenzuela (1990)* concerns a specific type of physical neglect resulting in a 'failure to thrive'. It usually refers to a child whose growth

curve is below the 3rd or 5th percentile for their age or whose growth has fallen off steeply and crossed two major growth percentiles (for example, from above the 75th percentile to below the 25th percentile), without a medical explanation or etiology. In this study, 42 malnourished children with 'failure to thrive' were observed. Valenzuela interprets this failure as a consequence of disturbed parenting and considers it a type of neglect because other parents in the same conditions were able to feed their child normally. In the malnourished group, 32% of the children were categorized as disorganized attached, whereas only 5% of the children with a normative weight received this classification. Seven percent of the malnourished group had a secure attachment relationship, in contrast with the healthy group in which 50% of the children were classified as secure.

All these studies provide evidence for the conclusion that child maltreatment functions as a major risk factor for the development of a disorganized attachment, even when we compare maltreated children with at risk children from deprived backgrounds who were not maltreated. Overall, in these five studies 47% of the maltreated children were disorganized, whereas this is 15% for children in the norm group (Van IJzendoorn, Schuengel & Bakermans-Kranenburg, 1999). All studies show a strong association between disorganized attachment and child maltreatment. The combined effect size is very large, $d = 1.51$ ($p < .05$) which is equal to one-and-a-half standard deviation in a statistically homogeneous set of samples (Cyr, Euser, Van IJzendoorn, & Bakermans-Kranenburg, 2009, see Chapter 4).

Reactive attachment disorder and pathogenic care: A problematic description

The psychiatric classification system Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) has a separate diagnostic category for reactive attachment disorders (RAD). In the DSM- IV, the disorder is strongly linked to a disturbed caregiving environment and one of the criteria for RAD is that it has been developed as a reaction to pathogenic care. This criterion is included in the RAD diagnosis to demarcate the disorder from disturbed attachment patterns caused by neurobiological disorders of the child such as autism. The taxonomy of the reactive attachment disorders lists indicators that strongly resemble disorganized attachment behaviors (see Box 1 for an overview of the diagnostic criteria for RAD): contradictory behaviors such as simultaneously approaching and distancing from the attachment figure in moments of stress, or freezing in the presence of the attachment figure. In fact, the core of the RAD diagnosis is a severely dis-

Box 1. *Diagnostic Criteria for the Reactive Attachment Disorder*

Diagnostic criteria DSM-IV (APA, 1995)
A. Markedly disturbed and developmentally inappropriate social relatedness in most contexts, beginning before age 5 years, as evidenced by either (1) or (2):
(1) persistent failure to initiate or respond in a developmentally appropriate fashion to most social interactions, as manifest by excessively inhibited, hypervigilant, or highly ambivalent and contradictory responses (e.g., the child may respond to caregivers with a mixture of approach, avoidance, and resistance to comforting, or may exhibit frozen watchfulness)
(2) diffuse attachments as manifest by indiscriminate sociability with marked inability to exhibit appropriate selective attachments (e.g., excessive familiarity with relative strangers or lack of selectivity in choice of attachment figures)
B. The disturbance in Criterion A is not accounted for solely by developmental delay (as in mental retardation) and does not meet criteria for a pervasive developmental disorder.
C. Pathogenic care as evidenced by at least one of the following:
(1) persistent disregard of the child's basic emotional needs for comfort, stimulation, and affection
(2) persistent disregard of the child's basic physical needs
(3) repeated changes of primary caregiver that prevent formation of stable attachments (e.g., frequent changes in foster care)
D. There is a presumption that the care in Criterion C is responsible for the disturbed behavior in Criterion A (e.g., the disturbances in Criterion A began following the pathogenic care in Criterion C).

turbed attachment relationship with environmental characteristics already present in the first five years of the child's life.

There are several problems with the concept of reactive attachment disorder. First, the questionable distinction between the two subtypes of the attachment disorder as described in the DSM-IV: the inhibited type and the disinhibited type, characterized by extreme inhibition or indiscriminate behavior and a lack of selectivity, respectively. Research with institutionalized children who were internationally adopted has shed new light on the similarities and differences between the two subtypes of the attachment disorder. The disinhibited attachment is persistent and relatively unaffected by quality of care (Zeanah, Smyke & Zettles, 2006) and is frequently associated with problems in other developmental domains

in post-institutionalized children, whereas the inhibited type is strongly responsive to enhanced caregiving (Rutter, Kreppner & Sonuga-Barke, 2009). Furthermore, the inhibited type is related to attachment behavior in the Strange Situation while the disinhibited type is not (Zeanah, Smyke & Settles, 2006). In conclusion, there is little correspondence between the inhibited and disinhibited types of attachment, and evidence that these two categories have to be considered subtypes of the same construct (RAD) is lacking (Rutter et al., 2009). Furthermore, it is problematic that there are very few emrical studies on the validity of reactive attachment disorders, and on RAD as a diagnostic category (Volkmar, 1997). Data on the stability and discriminant validity of the reactive attachment disorder are still incomplete (Boris, Hinshaw-Fuselier, Smyke, Scheeringa, Heller & Zeanah, 2004). It is a worrisome observation that a generally accepted diagnostic system for attachment disorders is barely based on theory and studies on attachment (van IJzendoorn & Bakermans-Kranenburg, 2003).

The diagnosis of reactive attachment disorder also suffers from the problem of pathogenic care as a requisite. The reason for inclusion of this criterion is primarily pragmatic: there is overlap in symptoms of RAD and other disorders (e.g. aspects of pervasive developmental disorders), which hinders the differential diagnosis between an attachment disorder and very dissimilar disorders with related behavioral characteristics. Volkmar (1997) argued that it is not necessary for the diagnosis of a reactive attachment disorder to presuppose pathogenic care, for various reasons:

- Pathogenic care as an inclusion criterion creates a difference between the diagnostic descriptions of attachment disorders in the DSM-IV and its counterpart, the International Classification of Diseases (ICD-10)
- Etiological criteria are not specified for other disorders in the DSM-IV
- Pathogenic care as an inclusion criterion excludes cases in which symptoms are present, but no abuse or neglect has been established or substantiated
- It is problematic to evaluate pathogenic care retrospectively

A third problem in the description of reactive attachment disorders in the DSM-IV is the eclectic and heterogeneous nature of the category. The behavioral indicators seem to refer implicitly to the coding system of disorganized attachment (Main & Solomon, 1990). The indicator 'lack of selectivity' for example can be found in the category 'interrupted or misdirected behavior' because the child seeks proximity to a stranger instead of the attachment figure in times of stress.

Another example is simultaneously showing avoiding and clinging behaviors, which is categorized in the system for disorganized attachment in the category 'simultaneously showing contradictory behaviors'. These examples come from the DSM-IV, but similar descriptions can be found in the ICD-10, for example: 'ambivalent or contradictory social responsivity, especially in stressful situations'. In the developmentally based system for diagnosing mental health and developmental disorders in infants and toddlers 'diagnostic classification: zero to three' the emphasis is on the role of family environment in the development of reactive attachment disorders, such as a long-term hospital stays, changing parenting arrangements without a stable caregiver or attachment figure, or parental psychopathology and addiction.

Zeanah and colleagues defined attachment disorders as: "attachment problems become psychiatric disorders for infants when emotions and behaviors displayed in attachment relationships are so disturbed as to indicate, or substantially increase the risk for persistent distress or disability in the infant" (Zeanah, Mammen & Lieberman, 1993, p. 338). If we apply this definition to evaluate the clinical status of disorganized attachment, then we have to consider the more severe types of disorganized attachment as psychiatric disorders with more or less serious symptoms and implications (Van IJzendoorn & Bakermans-Kranenburg, 2003). Several of these implications are well-documented; an example is the link between disorganized attachment and a problematic stress regulation in arousing circumstances, such as an increased hart rate and an elevated secretion of cortisol in comparison with the other attachment classifications. Furthermore, a recent meta-analysis (Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley & Roisman, 2009) has indicated that children with a disorganized attachment show more aggressive and externalizing problem behaviors (a moderate effect size of d = 0.34) later in childhood. In adolescence these children show an increased risk for dissociation, and for psychopathology that is related to dissociation (Sroufe, Egeland, Carlson & Collins, 2005; Van IJzendoorn et al., 1999).

Child maltreatment in a socio-historical perspective

Defining child maltreatment

Child maltreatment has been prevalent since humans exist. Infanticide, child prostitution and child labor are among the well-documented types of child maltreatment from the (deep) past (Corby, 2006). The publication of an article on 'The battered child syndrome' in 1962 by the pediatrician Henry Kempe and his colleagues (Kempe, Silverman, Steele, Droegemueller & Silver, 1962) was the

starting point of more scientific attention to child maltreatment. Already in the forties and fifties of the twentieth century, several medical radiologists reported inexplicable injuries of very young children, for example 'general bone disease': a structural fragility of the bones easily leading to injuries. Kempe and colleagues linked these enigmas to physical violence, which was a unique insight and a starting point for the study of child abuse and neglect. The studies following this remarkable publication considered child abuse as a symptom of dysfunctional family relationships.

As research on physical, emotional and sexual violence towards children emerged, a broad range of harmful behaviors or neglectful omissions of caregivers were called child maltreatment. In the past decades, the definition of child maltreatment has been re-formulated time and again, and the content of the concept has been the topic of hot scientific and popular debates. Theoretically, four main approaches to define child maltreatment can be distinguished: medical-diagnostic, ecosystemic, sociological, and legal approaches (Barnett, Manly, & Cicchetti, 1993). All these approaches do have different principles and features to categorize child maltreatment. The fifth is a multisystems approach that attempts to integrate the various perspectives.

In the Netherlands, the legal definition of child maltreatment is described in the law for child and youth care as: "Each type of interaction between a child in a position of dependence and an adult caregiver that is (actively or passively permitted) sexually, physically or psychologically violent or threatening, causing serious physical or psychological harm or endangering the development of the child" (Wet op de Jeugdzorg, 2005). Three aspects of this description deserve attention. A first important feature of the definition is the dependent position of the child and the non-voluntarily nature of the relationship between the child and the perpetrator. The second element is the distinction between abuse and neglect. The various types of maltreatment are characterized by active deeds of the perpetrator (e.g. hitting the child), whereas for types of neglect the omission and passivity of the caregiver is a central notion (e.g. allowing significant school truancy of the child). Third, the law leaves room for labeling parenting behaviors as child maltreatment when harm is not (yet) visible. This inclusion of endangerment of child development as a part of the maltreatment definition is especially valuable for permitting preventive interventions.

Box 2. *Definitions and (sub)types of Child Maltreatment (Sedlak & Broadhurst, 1996, p 2-10-2-19; Van IJzendoorn et al., 2007)*

Type of maltreatment	Subtypes
Sexual abuse	Evidence of oral, anal or genital penile penetration Molestation with genital contact Other or unknown sexual abuse (e.g. fondling or exposure)
Physical abuse	Acts include hitting with a hand, stick, strap, or other object; punching; kicking; shaking; throwing; burning; stabbing; or choking a child
Emotional abuse	Close confinement (e.g tying or binding) Verbal or emotional assault Other or unknown types (e.g. deliberate witholding of shelter or sleep)
Physical neglect	Refusal of, or delay in health care in accord with professional recommendations Abandonment Expulsion Inadequate supervision Other neglect (e.g. inadequate nutrition, clothing or hygiene)
Educational neglect	Permitted chronic truancy Failure to enroll/other truancy Inattention to special education need
Emotional neglect	Inadequate nurturance/affection Chronic/extreme spouse abuse/domestic violence Permitted drug/alcohol abuse Permitted other maladaptive behavior Refusal of, or delay in psychological care in accord with professional recommendations Other emotional neglect (e.g. marked overprotection, chronic age inappropriate expectations)

Box 2 shows the main subtypes of child maltreatment. The description of these subtypes was used in comprehensive American prevalence studies (Sedlak & Broadhurst, 1996), and served -together with the above-mentioned legal definition- as the basis for the Dutch replication of these studies (NPM-2005, Van IJzendoorn et al., 2007).

The Dutch Child Protection Services: History, system and procedures

In the Netherlands, no legal obligation to report maltreatment exists for citizens. Procedures for mandatory reporting child maltreatment cases are recently emerging for professionals working with children. Mandating reporting for the general public has been discussed widely, resulting in a request for an amendment of the law several years ago by some political parties in the Dutch parliament, but this initiative has been rejected.

Historically, in the beginning of the 20th century, child protection care initiatives were primarily privately-owned, with or without governmental funding. In 1956, Child Protection Boards were founded and in 1970, the battle against child maltreatment was institutionalized by the foundation of associations against child maltreatment (Vereniging tegen Kindermishandeling, VKM, currently: Stichting ter Voorkoming Kindermishandeling, a foundation for the prevention of child maltreatment). The first agencies for confidential physicians (general practitioners who specialize in child maltreatment cases) were opened in 1972. In 2000, except for the protection boards, all these organizations were united in the Child Protection Services (Advies- en Meldpunten Kindermishandeling; AMK). Professionals and people from the child's network (e.g. family, acquaintances, neighbors) can report their suspicions of child maltreatment to these services. Subsequently two trajectories are possible: advice and consultation. In case of an advice, a reporter will be counseled by phone by a CPS worker how to act in this specific situation. If the situation is too serious or the reporter is not able to do something, the advice will be transformed into a consult. In case of a consult, the CPS agency starts a family examination to assess the situation of the child, mainly by interviewing people in the child's environment, like the teacher and the family's general practitioner. A multidisciplinary team evaluates all information and decides whether or not the maltreatment is substantiated. CPS workers do not have to prove legally that child maltreatment is substantiated before proposing a diagnostic trajectory or treatment. In case of substantiated child maltreatment, follow-up diagnostic examination will start, and treatment trajectories for victims and/or perpetrators are initiated. The information collected by CPS is succinct: only a few characteristics of the child, the family and the perpetrator(s) are documented (see Chapter 2).

Empirical research on the prevalence of maltreatment in the Netherlands

Although the damaging consequences are currently widely accepted, until recently there were no studies documenting the number of victims of child maltreatment in the Netherlands. There were, however, some prevalence estimates based on extrapolations of maltreatment rates from other countries. These estimates varied between 50,000 and 80,000 children (Willems, 1999) per year, mainly based on American research (DHHS, 1988) documenting (potential) child maltreatment cases in child protections services, child protection boards, child mental health services, schools, child day care centers, hospitals and police forces.

The National Prevalence Study on Maltreatment of youth (NPM-2005; Van IJzendoorn et al., 2007) is the first Dutch study on the prevalence of child maltreatment based on the method of the American National Incidence Studies (NIS). The NIS studies rely on the observations by community informants or sentinels, that is: professionals working with children. These informants come from various occupational branches. In the Dutch study, the professionals were working in primary and secondary schools, child day care centers, police forces, child protection boards, shelters for battered women and as general practitioners. More than 1,100 of these informants were evenly distributed over the Netherlands and reported their observations of child maltreatment over a three-month period. They were carefully instructed in the definitions of the various types of child abuse and neglect by means of a personal instruction meeting or an information package to create uniformity about the content of child maltreatment. Parallel to the observations of the informants, child records from all 17 Dutch Child Protection Service Agencies [Advies en Meldpunten Kindermishandeling, AMK] over 2005 were collected. In 2005, substantiated maltreatment was established by the CPS agencies for 13,538 children. The observations of the professionals were extrapolated from the three month period to annual rates and combined with the CPS data, to calculate estimates of the yearly prevalence rates.

In the NPM-2005, it was estimated that about 107,200 children were maltreated in 2005 in the Netherlands. The estimate is based on both CPS records and reports of informants. This prevalence rate is equal to one victim of maltreatment per 30 children in 2005. The majority of the cases concerned neglect, more specifically emotional, physical and educational types of neglect. In 47% of the cases, two or more types of child maltreatment were present simultaneously. Consequently, co-morbidity of maltreatment is an important problem. The estimated number of victims of child physical abuse was 19,000. Approximately 4,700 chil-

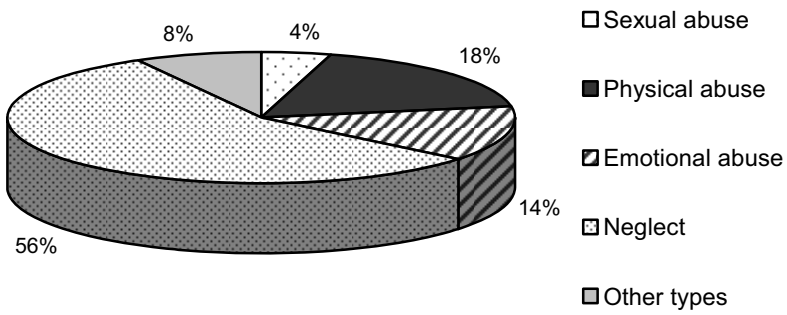

Figure 2. *Distribution of the Various Types of Child Maltreatment in the NPM-2005*

dren were victims of sexual abuse; sexual abuse was found to be the least prevalent type of child maltreatment (see Figure 2 for a distribution of the various types of maltreatment).

Children who were maltreated in the years preceding the study but who were not maltreated anymore in 2005 were not included in the estimates. The lifetime prevalence is therefore certainly much higher than the annual prevalence for 2005. All these prevalence estimates do have an error margin. For the total estimated number of 107,200 children, the confidence interval does have margins of circa 5,000 cases around the mean, indicating a rather precise estimation (see Chapter 2).

Child maltreatment and risk factors

The families of children reported by the professional informants had several characteristics on which they differed from the general population in the Netherlands. Families with three or more children were 1.8 times over represented among families of maltreated children. The largest risk factor for child maltreatment was however a very low parental education: these families were 7 times more often represented among maltreated children. Parental unemployment (defined as none of the parents having a paid job) increased the risk 5-fold. Parents from ethnic minorities were 3.5 times over represented. Ethnic minority families were divided in two groups: traditional immigrant families and non-traditional immigrant families. The traditional immigrant families consisted of labor migrants (mainly from Turkey and Morocco) and immigrants from former colonies of the Netherlands (Suriname, Antillean Islands). The group of non-traditional immigrant families consisted of refugees from a wide range of coun-

tries (from Africa, Eastern-Europe, South-America except for the countries mentioned above), escaping war, natural disasters or political regimes. A large part of the ethnic-minority families had a very low parental education. When we corrected for low education, the increased risk for child maltreatment disappeared for the traditional immigrant families. However, for the refugee families the elevated risk slightly decreased, but remained significantly higher than for native Dutch families. In sum: a very low parental education appears as a stronger risk factor for maltreatment than (traditional) ethnic minority origin (see Chapter 3).

The data from the child protection records showed a similar picture: children living in a large family (three or more children) had a 2.3 times higher chance for child maltreatment. Single parenthood increased the risk for child maltreatment with factor 2.2, and step-parenthood with a factor 1.7.

A bio-ecological model of child maltreatment and attachment problems: an integration of risk and protective factors

The NPM-2005 empirically showed that single parent families, step-parent families, families with unemployed parents, ethnic minority families, larger families and families with a very low parental education have an elevated risk for child abuse. Partly, these risk factors co-occur and create a vicious circle of intergenerational transmission of child maltreatment, in which families are captivated from generation to generation. It is possible that poverty, unemployment and a very low education are passed on from one generation to the other, increasing the risk for intergenerational transmission of child maltreatment. It is a sad and tragic observation that parents who were victims of child abuse in their childhood more often become an abusive parent of their own children. It is estimated that 30% of the abused parents develop into perpetrators of their own children: a ten-fold increase of the risk that non-maltreated parents maltreat their own child (Dinwiddie & Bucholz, 1993). However, the study on intergenerational transmission of child maltreatment suffers from various methodological flaws, such as retrospectively asking for information about child abuse in the family of origin and in the own current family (Lambermon & Van IJzendoorn, 1991), and lack of data on parents who were victims of abuse in their childhood, but do not abuse their own children (Kaufman & Zigler, 1987). Therefore, evidence-based conclusions about intergenerational transmission of child abuse are almost impossible (Ertem, Leventhal & Dobbs, 2000).

An important exception is the comprehensive, large scale 'Minnesota study of risk and adaptation from birth to childhood' (Sroufe, Egeland, Carlson &

Collins, 2005). A sample of more than 200 families from deprived socio-economic backgrounds was followed to study which risk factors influence the intergenerational cycle of child abuse, and which protective factors contribute to its breakdown. Forty percent of the parents who were abused in their childhood became abusive parents, and thirty percent did not take good care of their child. On the contrary, only one parent with positive childhood experiences abused his or her own child. Another remarkable finding is that 30% of the abused parents did not abuse their own children. Three protective factors were important to stop the intergenerational cycle of abuse: a supportive caregiver in their childhood (e.g. the father, or a grandparent) and/or at least six months of psychotherapeutic treatment, and a supporting intimate partner relationship in adulthood. These factors were absent for parents who transmitted their own abuse onto the next generation. Parents who were unable to break down the cycle were characterized by incoherent mental representations of attachment, as measured by the Adult Attachment Interview (AAI, Hesse, 1999). These individuals felt less appreciation for their own personality and did have more diffuse self-images. Furthermore, they were less sensitive to and more negatively aroused by the attachment signals of their child. In this way, the Minnesota study shows that the transmission of child maltreatment co-occurs with the intergenerational transmission of anxious types of attachment (Sroufe et al., 2005; Van IJzendoorn, 1995). Lastly, this longitudinal study showed that children with substantiated maltreatment in their early childhood more often suffer from psychiatric disorders in adolescence. Externalizing problem behavior above the clinical cut-off was three times more often present in the physically abused group, and the sexually abused children had twice as often anxiety disorders (Sroufe et al., 2005).

Neurobiological factors and child maltreatment

A complete model for the explanation of child maltreatment and its consequences has to cover the whole spectrum of risk and protective factors, ranging from molecule to unemployment. General risk factors can not be linearly translated to individual situations: not every single, unemployed and low educated parent maltreats his or her child, and not every child with abused parents will inevitably become a victim of maltreatment itself. Furthermore, the consequences of maltreatment are quite diverse depending on many child, family and context characteristics. The main issue is how to explain this differential vulnerability or susceptibility (Belsky, 2005; Belsky, Bakermans-Kranenburg & Van IJzendoorn, 2007) and for the answer we should take psychosocial and neurobiological factors into account, preferably in interaction with each other.

Studies with young twins can shed light on the extent to which children's genetic predispositions influence their parents' behavior (McGuire, 2003). If, for example, monozygotic twins are disciplined more similarly than dizygotic twins, it means that the explanation of the variance in the amount of disciplining between one child and another can be explained by genetic characteristics of the child (Jaffee, Caspi, Moffit, Polo-Thomas & Price, 2004). An example of that approach is the twin study of Jaffee and colleagues (2004) on genetic and environmental influences on corporal punishment and child maltreatment, which showed that children with different genetic relatedness elicited a systematically varying amount of (potential) harsh parenting in their parents. The results provided evidence that child characteristics might play an important role in the development of externalizing (aggressive, oppositional, or antisocial) problem behavior by evoking harsh parental discipline. But the child effects reach their limit with respect to child maltreatment: genetically mediated child effects were found for corporal punishment but not for child maltreatment. The study indicated that child maltreatment is mainly associated with shared environmental factors, e.g. with differences between families, features that are not dependent on the influence of the child. Not the child's genetic make-up, but the environment was found to be the main explanatory factor for child maltreatment. Nevertheless, genetic differences between children can play an important role in understanding the differential effects of child maltreatment, in particular because genes are a crucial part of potentially powerful explanatory mechanisms involved in gene-environment interactions. Bronfenbrenner observed this possibility already in 1979 and stated that in parenting and child development main effects are probably interactions, meaning in this case: gene-environment interactions.

A bio-ecological model of child maltreatment shows that social, psychological and parenting variables are only part of the enigma, and that it is worth including the neurobiological dimension. The neurobiology of child maltreatment will not reduce, but rather emphasize the effectiveness of social and psychological factors and interventions (see Figure 3 for a bio-ecological model).

This is demonstrated in another well-known example of a study on the interaction between neurobiological and psychological factors, the longitudinal Dunedin study of Caspi and colleagues (2002) on the effects of child maltreatment on the development of antisocial behaviors in adulthood. If children (in this case only boys) were exposed to harsh parenting or even maltreatment there was an increased risk for antisocial behaviors, particularly if these children did have a genetic vulnerability, in particular a monoamine oxidase A (MAOA) genotype with low production of the MAOA enzyme. MAOA plays an important role in the

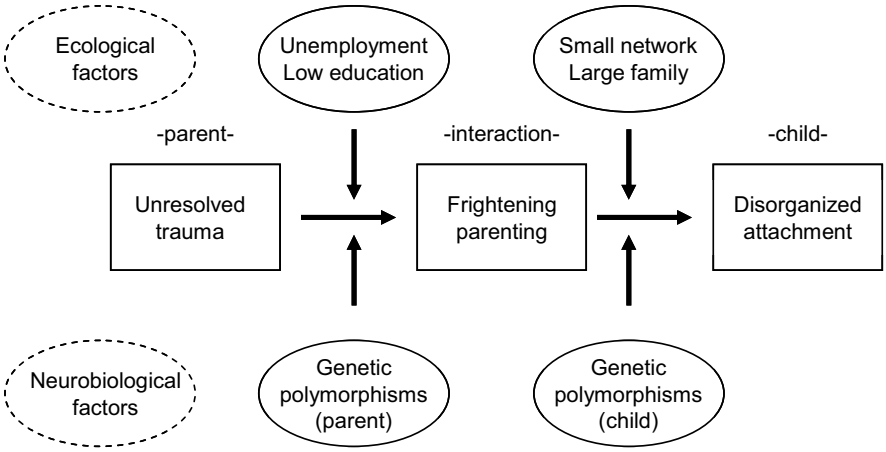

Figure 3. *A Bio-Ecological Model of Child Maltreatment*

reduction of serotonin, dopamine, and norepinephrine hormones that influence the regulation of emotions and behavior (Kim-Cohen et al., 2006) and functions as a buffer for antisocial behavior in stressful situations.

In two recent studies from Leiden University, gene-environment interactions were already found in very early childhood. The risk of aggressive behaviors in toddlers was increased in the presence of an insensitive parenting style, but only for genetically vulnerable children. The underlying mechanism of this genetic vulnerability (or better: susceptibility) can be a dopamine-system related genotype, the long variant of the DRD4 polymorphism (Bakermans-Kranenburg & Van IJzendoorn, 2006). Another study showed that unresolved trauma or loss in parents – which is one of the most powerful predictors for disorganized attachment in the child (zie Madigan et al., 2006 for a meta-analysis) - led to an elevated risk for disorganized attachment in children with the long allele of the DRD4 polymorphism. The risk for disorganized attachment was 18 times higher for children with the combination of a parent with an unresolved trauma and the genetic risk, than for children without these two risk factors (Van IJzendoorn & Bakermans-Kranenburg, 2006).

However, children with the long 7-repeat allele of the DRD4 polymorphism did not merely show a genetic vulnerability. Evidence was found for the susceptibility hypothesis predicting not only more negative outcomes for susceptible children in unfavorable environments, but also more positive outcomes for susceptible children when experiencing favorable contexts (Bakermans-Kranenburg & Van IJzendoorn, 2007). Children with the long allele who had

mothers *without* unresolved trauma were significantly less often disorganized attached. Furthermore, if children with the long 7-repeat allele of the DRD4 polymorphism had sensitive mothers, they showed the lowest levels of externalizing behaviors: lower than the children with the long allele and an insensitive mother, and also lower than children who had no 7-repeat allele of the DRD4 polymorphism (Bakermans-Kranenburg & Van IJzendoorn, 2007). In other words, the susceptibility of these children was *for better and worse*: they benefited more from a positive context, but were also more strongly affected by an unfavorable environment. As we learn more about the various types of interactions between genes and environment, we will gain more insight why some psychological interventions work for a certain group of children but fail to be effective for other children.

Implications for diagnostics and treatment

Assessment of child maltreatment

There is paucity of evidence-based research instruments for diagnosing and substantiating child maltreatment. A recent research report on secondary prevention of child maltreatment in the Dutch mental health services (JGZ Standaard, 2006, p. 51) reported that "it is worrisome that there are so few valid research instruments to signal child maltreatment". In clinical practice, many instruments for the assessment of psychosocial problems and problematic family situations are applied as helpful tools for evaluating family practices, but these measures are not appropriate for diagnosing child maltreatment (JGZ Standaard, 2006).

In the NPM-2005, the definition and evaluation of child maltreatment is based on three indicators (see Chapter 2):

1. the observation of a professional working with the child
2. a written (semi-structured) description of the severity of the maltreatment according to observable emotional, behavioral or physical symptoms
3. the evaluation of the case by an experienced coder

Several steps in this procedure contribute to a transparent method: the application of detailed, uniform definitions of abuse and neglect; a semi-standardized written case observed by a professional and evaluated by a coder, and the required presence of concrete and observable symptoms.

In the Netherlands, the evaluation of a potential maltreatment case is the (heavy) responsibility of the Child Protection Services (AMK). A multidisciplinary team assesses the family situation of the child, and often must take complex decisions with a minimum of information available. A study of De Jong (2004) in four Dutch CPS agencies showed that CPS professionals were primarily focused on collecting information, and devoted less attention to the (re)construction of a clear picture of the case. Much time was also spent on exchanging information between the members of the multidisciplinary teams, but not all relevant information was requested. A risk assessment instrument would be a valuable tool for a more systematic and transparent way of evaluating risk factors. Recently, an effectiveness study has been conducted of a risk assessment instrument (CARE-NL) used in the Netherlands. Based on retrospective charge research, the CARE-NL seems to be reliable and to have sufficient predictive validity (De Ruiter & De Jong, 2006), but the proof of the pudding is in the eating, and prospective validity more important than retrospectively establishing validity.

Assessment of (problematic) attachment

A variety of research tools is available to assess the quality of the attachment relationship (for an overview of the quality and range of these measurements, see Solomon & George, 2008). However, there is little systematic and thorough research on the construct validity of the attachment measures (Solomon & George, 2008). When considering these instruments for the assessment of attachment relationship quality it is important to note that the majority of the measures are not meant to be clinical tools for individual diagnosis, but designed as research instruments for the measurement of group characteristics and group differences. Furthermore, we have to bear in mind that individual differences in attachment as measured for example in the Strange Situation Procedure should not be confused with attachment disorders (Zeanah, Mammen & Lieberman, 1993) as we elaborated earlier (see section on Reactive Attachment Disorder).

Treatment

Evidence-based treatments

The effectiveness of interventions in maltreating families is rarely studied by randomized controlled trials (Kolko, 1998). We can distinguish two main approaches to treatment: cognitive-behavioral strategies, and the enhancement of social support. These strategies are often implemented in programs with more components. Examples of elements from these multi-components programs are:

stress reduction, social skills training, money management, safety at home, job counseling and parent-child interaction training (Lutzker, 1994). A good example of an intervention specifically targeting child maltreatment is the 'Safe care project' (Gershater-Molko, Lutzker & Wesch, 2003) which aims to train parents in three domains: health promoting skills (e.g. how to handle illness of the child), parenting practices, and safety skills. Reduced rates of future child maltreatment as an outcome measure have not been reported for this intervention. In general, single-outcome evaluations are often obscured by the complex histories of maltreated children and the multiproblem presentation of these types of families (Saunders et al., 2004; for a discussion of evidence-based treatment methods see Chapter 5).

Holding therapy

One of the therapies that is provided to families in clinical practice is the so-called 'holding (attachment) therapy'. In this therapy, children are forced to make physical contact with their caregivers, also when they are resistant to do so. The caregiver is instructed to hold the child, if necessary against its will and with the use of physical violence (e.g. pushing the resisting child to the ground). The rationale behind this therapy is to enable the child to make a regression to an earlier developmental stage in which the formation of a secure attachment relationship was the central developmental task, and to retain suppressed feelings. Re-experiencing this crucial early period should result in a secure attachment relationship between caregiver and child. This type of 'treatment' is a dangerous therapy, with great physical risks. In the United States, children have been physically harmed by holding therapy (O'Connor & Zeanah, 2003; Chaffin et al., 2006) and even fatal accidents have occurred during therapy sessions (Mercer, Sarner & Rosa, 2003). Holding therapy is sometimes called attachment therapy, but its practices are contrary to the principles of attachment theory. The therapist actually teaches caregivers to act very insensitive. The caregivers learn to follow their own agenda whatever it takes, not listening to the signals of the child, even when it resists explicitly. In attachment theory, secure attachment relationships are associated with sensitive care. Sensitive care means that caregivers notice the child's signals of distress, and that they are able to provide an adequate and prompt reaction. This is not the case in holding therapy that promotes extremely insensitive parental behavior, and it is therefore remarkable that holding therapy is associated with attachment theory. Furthermore, there is no empirical evidence that holding therapy is effective, a conclusion drawn by a panel of experts in *Child Maltreatment* (Chaffin et al., 2006). The APSAC, an American organization whose mission

it is to enhance the ability of professionals to respond to children and families affected by abuse and violence, gave an official warning for the application and harmful consequences of this type of treatment (see Sroufe, Erickson, & Friedrich, 2002).

Focus of interventions

The prevalence data show the large impact of risk factors associated with a very low education and unemployment of parents. A practical implication of this observation is the recommendation to pursue a socio-economic policy with a strong emphasis on education and employment. Unemployed and school dropped-out parents are the most frequent perpetrators of child maltreatment. Effective policies enhancing education and employment rates will probably decrease child maltreatment rates, although a causal link between risk factors and child maltreatment is difficult to establish.

Child maltreatment is also relatively over represented in single parent families. Neglect is the most prevalent type of maltreatment in these families, probably often originating from a somewhat chaotic life style, less supervision of the children at home, and the daily hassles arising from the unshared responsibility of employment and parenting. 'It takes a village to raise a child' is an old African saying. We therefore suggest a free choice for single parents for a paid job, or for the unpaid job of raising their own children, with (free) services available to support these single parents in their challenging life situations.

Preventive interventions

Preventive services could provide important support for parents at risk for child maltreatment. Compulsory preventive interventions for adoptive parents exist already for years, and are highly appreciated by this group of parents (Juffer, 1993). One of the few preventive interventions with empirically supported effectiveness is the Video-Feedback to Promotive Positive Parenting (VIPP, for a detailed description see: Juffer, Bakermans-Kranenburg, Van IJzendoorn, 2008). This brief and interaction-focused approach aims at increasing maternal sensitivity and enhancing positive discipline strategies of parents. It is interesting to note that this intervention also leads to a decrease in disorganized attachment (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2005; Juffer, Bakermans-Kranenburg & Van IJzendoorn, 2005). The VIPP can be applied to a broad range of families in a non-stigmatizing way. The VIPP is also suited when no abuse has yet happened in the family because this intervention is not focused on fighting child maltreatment itself, but on developing the conditions to enable parents to cope

with the daily hassles related to raising young children. Finally, when child maltreatment is present in a family, this structured intervention can be integrated in a broader psychotherapeutic approach targeting causes and consequences of child maltreatment.

Conclusions and future directions

The (preventive) intervention and treatment of child abuse with evidence-based methods may become increasingly important in the near future. The allocation of funds is more and more a function of the scientific evidence for treatment methods (Chaffin & Friedrich, 2004), and methodologically sound effectiveness research will play a central role in the process of moving the field of research on child maltreatment forward (Berliner, 2005). The development, implementation and dissemination of evidence-based screening instruments and treatment methods of child abuse and attachment problems deserve much more attention. Furthermore, empirical research has to provide deeper insight in the mutual relations between risk and protective factors for child maltreatment, to provide a firm foundation for policy, diagnosis and treatment. Finally, explaining child maltreatment and attachment problems we have to study a wide range of factors, including socio-economic factors, parent-child interaction characteristics, and gene-environment interactions.

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