The epidemiology of child maltreatment

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Abstract

Child maltreatment is a significant worldwide problem, with consequences that can include impaired physical and mental health throughout life, and adverse social and occupational effects that carry a heavy economic and social burden. One estimate of cost to the US economy in 2007, for example, was over US$100bn. In middle- and low-income countries, there have been fewer studies of incidence and prevalence, and the economic and social costs are harder to estimate. It is very difficult to obtain full case ascertainment even in the most severe forms of child maltreatment, and even for fatal cases. In general, self-reporting and surveys identify higher rates of child maltreatment than data from sources relating to official notification. This paper reviews the epidemiology of child maltreatment from a practical perspective, with a focus on factors in the social environment, and the clinical history and examination, that predict an increased risk of child maltreatment.

Keywords abusive head trauma; child abuse; childhood mortality; child maltreatment; child neglect; fabricated and induced illness

Introduction and background

Child maltreatment is a major public health and social welfare problem in the UK and worldwide, and it remains a challenge over 150 years after Labbé's first descriptions of typical injuries associated with such abuse. Part of the reason for it remaining a challenge is that the idea of systematic or sporadic child maltreatment, particularly in the child's own home, has been met with incredulity. Breakthrough reports and studies were published in 1946, with Caffey's description of long-bone fractures and subdural haematomas in infants, and in 1962, with Kempe and colleagues' coining of the term 'Battered-child syndrome.' However, even 50 years on from Kempe's description, the nature, causes, frequency and impact of child maltreatment remain controversial.

Case definitions

There are case definitions for a variety of forms of child maltreatment, which is a collective term for the various forms of child abuse and neglect. Standard definitions are available for public health and surveillance from organisation such as the Centers for Disease Control. 'Child maltreatment' is defined as any act of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child.' There is no requirement for this harm to be intended, and most cases of harm to children are perpetrated by parents or caregivers; for example, 82% of substantiated cases in one study from the United States. Other definitions and examples are shown in Table 1.

The UK definition of psychological or emotional abuse is broad and includes interactions between child and parent or carer in which there are unintentional interactions with these adverse effects, as encompassed in the phrase: 'The persistent emotional ill-treatment of a child such as to cause severe and persistent adverse effects on the child's emotional development.'

Fabricated or induced illness (FII) is an established and currently preferred term in the UK for the condition that is also known as 'Munchausen syndrome by proxy', 'paediatric symptom falsification' or 'factitious or fictitious disorder by proxy'. The American Academy of Pediatrics Committee on Child Abuse and Neglect has suggested three screening questions to identify FII:

- Are the history, symptoms and signs of disease credible?
- Is the child receiving unnecessary and harmful, or potentially harmful, medical care?
- If so, who is instigating the evaluations and treatment?

These questions sound simple, yet identifying FII can be a 'complex conundrum,' as demonstrated by a case described in a Lancet editorial, a young boy whose physical examination was normal but, 'whose medical history includes cerebral palsy, cystic fibrosis, diabetes, food allergies, and intolerance to light.' It is particularly important to consider FII in chronic illnesses where symptoms are paroxysmal, such as asthma and epilepsy.

NICE guidance suggests other factors that should alert us to the possibility of FII, including:

- Symptoms and signs appear only when the caregiver is present.
- Reported symptoms are observed solely by caregiver, and may sound biologically implausible.
- Responses to treatment are inexplicably poor.
- New symptoms appear as established symptoms resolve.
- Caregiver(s) seeks multiple medical opinions.
- The child's daily and educational activities are disproportionately compromised.

Incidence and prevalence of child maltreatment

The frequency of child maltreatment is challenging to estimate because of variation in definitions, the type of maltreatment being studied, and the comprehensiveness and quality of official statistics and of surveys. Estimates of the frequency of reported cases of maltreatment are more readily obtained from high-income than low- or middle-income countries. The burden of child maltreatment in four high-income countries has been summarised by Gilbert et al. (2009). In Australia in 2002–03, 3.34% of children were referred to official services and 0.68% were considered to have substantiated maltreatment. The Canadian Incidence Study of Reported Child Abuse and Neglect found that 2.15% of children were reported and investigated, with

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Definitions of different forms of child maltreatment (based on Gilbert et al. (2009))

	Definition
Physical abuse	Intentional use of force or implements against a child that results in, or has the potential to result in, physical injury.
Sexual abuse	Any completed or attempted sexual act, sexual contact, or non-contact sexual interaction with a child by a caregiver.
Psychological (or emotional) abuse	Intentional behaviour that conveys to a child that he/she is worthless, flawed, unloved, unwanted, endangered, or valued only in meeting another's needs.
Neglect	Failure to meet a child's basic physical, emotional, medical/dental, or educational needs; failure to provide adequate nutrition, hygiene, or shelter; or failure to ensure a child's safety.
Intimate-partner violence	Any incident or threatening behaviour, violence, or abuse (psychological, physical, sexual, financial or emotional) between adults who are, or have been, intimate partners or family members, irrespective of sex or sexuality.

Table 1

0.47% of the total remaining suspicious and 0.97% considered substantiated. In England, the rate for all social welfare referrals for children and adolescents in 2007 was 4.96%, and the estimated referral rate to social services for maltreatment, excluding neglect and intimate-partner violence, was 1.50%. In the United States, 4.78% of children were investigated for child maltreatment, and 1.21% were considered to have substantiated concerns. Of these, 12% were categorised as being due to multiple forms of maltreatment, and 11% as psychological abuse or unknown. In these four studies, the primary reason for referral was categorised as physical abuse in 10–28% of cases, sexual abuse in 7–10%, psychological abuse in 11–34%, and neglect in 34–60%.

A subsequent review of variations in trends and policies relating to child maltreatment in six high-income countries (Australia, Canada, England, New Zealand, Sweden and US) showed that rates of referral to child-protection agencies varied by as much as a factor of 10 but that – after exclusion of the United States, which had a disproportionately high rate of violent child deaths and is a statistical outlier – the differences in maltreatment-related serious injury or violent death varied by less than a factor of two. Since there is greater variability in official notification than in the incidence of serious physical abuse, it is likely that official statistics are prone to a variety of systematic biases.

In general, the cumulative incidence of child abuse ascertained by means of self-reporting is substantially higher but also subject to international variation. For physical abuse placing the child or young person at risk of harm – that is, excluding less serious violence such as hitting, slapping and grabbing – cumulative risk estimates range between 5% and 35%. Such physical abuse included hitting with a fist or object, biting, kicking, or use or threat of use of a knife or other weapon. For any form of sexual abuse in the UK and US, cumulative prevalence is estimated to be 15–30% for girls and 5–15% for boys, with the respect estimates for penetrative sexual abuse being 5–10% and 1–5% respectively. A meta-analysis of worldwide studies has suggested that cumulative risk of any form of sexual abuse was 25.3% for girls and 8.7% for boys, with rates for penetrative sexual abuse being 5.3% and 1.9%, contact sexual abuse 13.2% and 3.7%, and non-contact sexual abuse 6.8% and 3.1% respectively.

For severe emotional abuse cumulative incidence in the UK and US is in the range 4–9%, and for milder forms of psychological abuse, such as being told by parents or carers that a child is not wanted, it is estimated that there is a cumulative incidence of 10.3%.

Validity and reliability

Using the broader concept of 'victimization' – which includes neglect, emotional abuse, theft or vandalism directed against children, assaults by siblings, dating violence and hate crimes – surveys in the United States have found an annual incidence of greater than 50% and self-reported annual incidence of child maltreatment to be as high as 13.6%. This demonstrates the substantially higher case ascertainment associated with self-reporting compared with notification or registration with official child-protection services. However, prospective methods of data collection may detect cases more sensitively than retrospective methods in studies of high-risk children.

Using data from the Minnesota Longitudinal Study of Parents and Children, Shaffer et al. prospectively identified child maltreatment in 20.6% of firstborn children whose mothers were mostly of low socioeconomic status, with one-third not completing high school education. In that study, the rates ascertained from self-reporting questionnaires administered in adolescence were lower at 7.1%. Combining the two sources of reporting gave an overall rate of 22.9%.

There are particular challenges with establishing the validity and reliability of data-collection instruments in the field of child and adolescent sexual abuse since direct questioning about experiences of sexual abuse is associated with complex methodological, legal and ethical difficulties.

One approach to improving case ascertainment and reliability for child maltreatment from official data sources is to use a range of ICD-10 codes for injury rather than codes specific to maltreatment syndromes (such as ICD-10 T74, Y06 and Y07). This has been a trend in using Hospital Episode Statistics in the UK and accords with NICE CG89.

The International Society for the Prevention of Child Abuse and Neglect (ISPCAN) has developed Child Abuse Screening Tool instruments that help to address deficiencies in previous screening tools due to cross-cultural, multicultural and multinational differences. Pilot studies have demonstrated these new instruments to have high sensitivity and internal consistency (Table 2).

Deaths related to child maltreatment

At the severe end of child maltreatment spectrum are cases in which the maltreatment leads to death. The WHO estimates that