International perspectives on the epidemiology of child neglect and abuse

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Introduction

The abuse and neglect of children have been described in every country of the world where there has been an investigation of the issue [1-5]. It has been estimated that, each year, 40 million children under age 15 years around the world suffer from abuse or neglect that requires health and social care [5]. The recognition of child abuse as a global public health problem is recent [6, 7]. Investigations, in both developed and lesser-developed countries, have demonstrated significant initial and long-term harm [8-10]. However, professionals in many countries continue to be blind to the problem. Clinical skills in the recognition of child abuse, even among medical professionals in countries with a history of awareness, are far from ideal. There are few hours devoted to child abuse in medical curricula even in the United States (US), a country that has one of the largest clinical literatures on the problem [11]. Physicians and other child workers in developing, as well as industrialized countries, must increase their skills and awareness of the problem.

Culture and definitions of abuse

International examinations of child abuse must address the differing standards and expectations for parenting behaviour in different countries and cultures. Definitions of what constitutes child abuse and neglect will vary between countries and even communities. Culture is a society's shared understanding of beliefs and behaviours. Although not everyone in a society follows the same cultural rules, culture helps define generally agreed upon principles of child rearing and care. Cultures can, and have, evolved different rules about acceptable practices. However, a number of studies suggest that persons across cultures share common working definitions of abuse. Thus, ethnicity and culture may not be among the important determinants of differing definitions of abuse [7].

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Korbin *et al.* reviewed reports where authors presented vignettes of parental discipline to parents in different cultural groups [12]. She and her co-authors noted substantial agreement among community groups, in a number of countries, about what circumstances were harmful. There were some notable differences in perspective across societies. In one study, Vietnamese-American parents did not perceive bruising from discipline as abusive and Caucasian parents made more of an effort to distinguish spanking from other forms of hitting. In another

study cited by Korbin *et al.*, Asian and Pacific Islander parents were surprised to learn that US law limits parental rights to physically discipline children. Korbin's review reported wide variation in standards of parental supervision with some groups less concerned when young children were unattended or left with young children. In their own study, Korbin *et al.*, noted a basic congruence in definitions of child abuse among parents in different neighbourhoods and different ethnic groups in the US. They reported differences in emphasis in defining abuse in different ethnic groups. African-Americans were more likely to think of neglectful acts when asked to think about acts that might be abusive while European-Americans were more likely to worry about physical acts [12].

Some investigators have suggested that different cultures may have so widely divergent views on child rearing that it may not be easy to find cross-cultural agreement on what parenting practices are abusive or neglectful [13]. However, in 1999, a World Health Organization (WHO) consultation of child abuse prevention produced a definition that was acceptable to a large group of international delegates: "Child abuse or maltreatment constitutes all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power"[7].

In addition to variations in defining child abuse among cultures, there are other conceptual disagreements on how abuse should be defined. Some scholars focus on the behaviours or acts of adults to define child abuse and others define abuse by either the actual occurrence of harm or the threat of harm to the child [7, 14]. The distinction between behaviour and harm becomes even more complicated if the intention of the parent becomes part of the definition. Some scholars include in the definition of abuse those children inadvertently harmed through actions of a parent regardless of intent, while others would require that harm be intended. Cross-national comparisons can be even more complicated as some of the international literature explicitly includes violence against children in institutional or school settings [15-18].

Subtypes of child abuse and neglect

This paper addresses parental or caregiver acts and omissions that result in harm to the child. Specifically, we will examine the data, causes and consequences for four subtypes of child abuse and neglect: physical abuse, sexual abuse, emotional abuse and neglect.

Physical abuse: an act or acts committed by a caregiver toward a child, which produce either physical harm or have the potential for harm.

Sexual abuse: acts in which a caregiver uses a child for sexual gratification.

Emotional abuse: the failure of a caregiver to provide a developmentally appropriate and supportive environment or caregivers actions that can have an adverse effect on the emotional health and development of a child; restrictions of movement, belittling, denigrating, scapegoating, threatening, scaring, discriminating, ridiculing or other non-physical forms of hostile or rejecting treatment are examples of emotional abuse.

Neglect and negligent treatment: neglect may be the most difficult area of maltreatment to define internationally, as there is relatively less agreement within societies about what constitutes neglect; neglect can be defined broadly as the failure of a caregiver to provide for the child in health, education, emotional development, nutrition, shelter or safe living conditions when the caregiver is in a position to provide for the child; neglect may be distinguished from poverty in that culpable neglect is thought to occur only when there are resources available to the family or caretakers not offered to the child.

Prevalence of child abuse

Fatal abuse or child homicide

International estimates of child homicide reveal that infants and very young children are at greatest risk, with rates per 100,000 of the population for the 0-4 age group more than double those of 5-14 year olds. According to the WHO, there were an estimated 85,000 deaths attributed to homicide among children under 15 years of age in 1998. Income and the global region of origin are related to variation in risk. The highest homicide rates for children under age 4 are noted in the

Eastern Mediterranean low/middle income group: 14.8/ 100,000 children for boys and 16.4 for girls. India is the next highest region at 10.1 for boys and 13.6 for girls [19].

International data indicate a higher rate of homicide for infant and young girls compared to boys in a number of countries. In China, the homicide rate for girls, aged 0-4, is 15.7; this contrasts to a rate of 7.9 for boys the same age [19]. However, sex does not appear to be the primary determinant of infant homicide around the world. Reports from Fiji, Senegal and the US all indicated that the majority of the deaths occur to the infants of young, poor, unmarried mothers [1, 20].

In the US, for 2001, 826,000 children were confirmed to be victims of either abuse or neglect and, of these, 176,000 were reported to be victims of physical abuse.

The majority of child deaths in developing countries are not investigated or routinely autopsied so it is difficult to know the precise number of fatalities from child abuse in any given country. In the US, a recent report found a rate of 4 fatalities/100,000 person/year in the first two years of life from intentionally inflicted traumatic brain injury [46]. The rate of parent report of shaking young children is about 2.6% in two US states; the implication of these numbers is that 1 in 650 shaken babies dies from the shaking and many more suffer significant neurological damage. In several developing countries, rates of shaking have been reported above 25% in the first two years of life (unpublished data from the first author). If the ratio of shaking to fatality is the same as the US data, it is likely that a large number of shaken children in the developing world are dying or experiencing significant brain damage without recognition of the problem. Despite the apparent widespread misclassification, there is general agreement that fatalities from child abuse are far more frequent than official estimates from vital records in every country where studies of infant deaths have been undertaken [1, 21]. Where there are good data, abusive head trauma is the most common cause of death from child abuse with blunt abdominal trauma and suffocation following as the second and third leading causes [21-23].

Non-fatal abuse

Despite the impressions of some that child abuse or child sexual abuse are western phenomena, based upon the volume of research published by North American and European investigators, there is ample evidence that abuse and neglect are global problems. Most of the extant literature has focused on physical and sexual abuse; much less is known about the prevalence of neglect, emotional abuse and other forms of abuse in either developed or lesser developed countries. At least 26 countries collect official statistics on reported abuse [6].

No legal or social systems with responsibility for responding to, or even counting, child abuse and neglect reports exist in the majority of the countries [6]. Case reports have been published in many countries [1, 20, 24, 25]. Population-based surveys have been completed in a number of countries including: Australia, Brazil, Canada, Chile, China, Costa Rica, Egypt, El Salvador, Ethiopia, India, Israel, Mexico, New Zealand, Nicaragua, Norway, Philippines, South Africa, South Korea, the United States and Zimbabwe among other countries [2-4, 8, 14, 15, 17, 26-32].

Physical abuse

The WHO estimates that, around the world, 40 million children suffer from abuse or neglect and need health and social intervention [7]. In the US, for 2001, 826,000 children were confirmed to be victims of either abuse or neglect and, of these, 176,000 were reported to be victims of physical abuse. This translates to a rate of 2.5/100,000 children that year. Despite over 30 years of mandatory reporting of maltreatment to authorities, there is reason to believe that these statistics underestimate actual abuse in the US. A 1995 Gallup poll asked US parents about their use of disciplinary behaviours with their own children [33]. This survey produced an estimate of 49/1,000 children for abuse when the behaviours of hitting the child with an object someplace other than on the buttocks, kicking the child, beating the child up and threatening

the child with a knife or a gun were included. There is an almost 20 fold difference between parent self-report and official statistics.

The limited international research suggest that the rates for many other countries are no lower, and may be higher, than physical abuse rates in the US. Youseff *et al.* described high rates of beating and fractures in a cross-sectional survey of children in Egypt; 37% were beaten or tied up and 26% of children reported physical injuries such as fractures, loss of consciousness or permanent disability from a beating [32]. In South Korea, the rate of severe violence (defined by the authors as kicking, beating, biting, throwing, or threatening with a knife or a gun more than 2 times a month) was 69/1,000 children in a study of 4th and 5th grades [24]. In a study of adolescents in nine Caribbean countries, 15.9% stated that they had been physically abused and 9.9% reported ever having been sexually abused [34]. Another study, which asked South Korean parents to self-report maltreating behaviours, noted at about 67% of parents whipped their children and 45% reported hitting, kicking or beating children [4].

Eastern Europe data look similar to the data from Egypt, the Caribbean and South Korea. A survey of 1,500 Romanian households included both child and parent data. Romanian children reported a rate of 4.6% for severe and frequent physical abuse that included being hit with an object, being burned or being deprived of food [5]. The rate for parent self-report of the same behaviours was just 1.4% of parents. However, 47% of Romanian parents admitted to beating their children "regularly" and almost 16% reported beating their children with objects.

The first author of this paper has been involved with a group of epidemiologists examining child abuse in the US and in a number of developing nations. WorldSAFE[1] is a cross-national comparative study conducted in five developing countries and two states in the US. Parallel data have been collected for population-based samples using common definitions, coding and research design. The investigators measured the frequency of parental behaviours without defining what would be considered physical abuse in every country. The investigators collected data from mothers about their disciplinary behaviours using a version of the Parent-Child Conflict Tactics Scale (PC-CTS) [3, 5, 14, 28]. The PC-CTS version used in WorldSAFE was expanded with 11 items generated by focus groups of parents in four countries. Tables I through III present the relative prevalence of self-reported parental discipline behaviours, using identical questions, in communities in Chile, Egypt, India, and the Philippines and compares these findings to previously collected PC-CTS data from a national survey in the US [14].

These data confirm that harsh parental punishment is not confined to a few countries or one part of the world. Hitting the child with an object on a part of the body other than the buttocks as punishment on at least one occasion in the past 6 months was reported by a significant percentage of parents in all of the participating countries. Harsher forms of violence were much less frequent, but not rare (Table I). Similar parental self-reports from other countries appear in the literature. Tang reported an annual rate of severe violence against children, as reported by their parents, of 461/1,000 in Hong Kong. He concluded that the rates for minor violence was lower in Chinese families but that severe violence occurred at a higher rate among

Table I: WorldSAFE data: comparative rates in % of harsh physical punishment of children for discrete population samples in 5 countries as reported by mother (from ref [14]).

	Chile	Egypt	Philippines	India	US
Hit with object (not on buttocks)	4	26	21	36	4
Kicked	0	2	6	0	0
Burned	0	2	0	1	0
Beat-up	0	25	3	0	
Knife-gun threat	0	0	1	1	0
Choked	0	1	1	2	0

[1] WorldSAFE (World Studies of Abuse and the Family Environment) is a collaborative project of physicians and social scientists working with the International Clinical Epidemiology Network (INCLEN). Investigators from 5 countries have administered a common core protocol to population-based samples of mothers in each country to establish comparable prevalence rates for domestic violence, harsh child discipline and protective social factors. Details about WorldSAFE are available at *http://www.inclen.org*

families in Hong Kong compared to published US data [31]. A study from both Korea and China also used the CTS although the children answered the questions. Children in grades 4 and 6 reported a rate of severe violence of 22.6% in China and 51.3% in Korea [4] (Table I).

WorldSAFE data demonstrate variation in patterns of more "moderate" forms of physical discipline among different countries. The study investigators did not all agree on which acts were abusive. Parental self-report of spanking ranged from 29% to 75% although the country with the lowest rate of "spanking" had the highest rate of "beating up." Spanking and slapping on the head were reported with equal frequency in one country while other countries had much lower rates of slapping on the face. One country reported equal rates of hitting with an object on the buttocks and spanking. Hitting with an object on the buttocks was much less frequent than spanking in the four other countries. Shaking a child to discipline him or her was surprisingly common (Table II).

Table II: WorldSAFE data : comparative rates in % of more moderate physical punishment of children reported by mothers for discrete population samples in 5 countries (from ref [14]).

	Chile	Egypt	Philippines	India	US
Spanked butt (with hand)	51	29	75	58	47
Hit on butt (with object)	18	28	51	23	21
Slapped on head	13	41	21	58	4
Pulled hair	24	29	23	29	*
Shook him or her	39	59	20	12	9
Hit with knuckles	12	25	8	28	*
Pinched	3	45	60	17	5
Twisted ear	27	31	31	16	*
Forced stand burdened	0	6	4	2	*
Put hot pepper in mouth	0	2	1	3	*

* Not collected in the US 1995 Gallup Survey.

Sexual abuse

Surveys estimating prevalence rates for sexual abuse vary dramatically in their estimates depending upon the definitions and methods to collect the information. Sexuality and sexual acts with children are difficult to talk about in many societies so it remains difficult to gather accurate comparative data on the prevalence of child sexual abuse. For example, incest is punishable by death in the Philippines and thus both children and professionals may hesitate to examine this issue (B. Madrid, personal communication).

Some studies have been conducted among children. Other surveys have asked adolescents and adults about their childhood and the 1995 Gallup poll asked parents about their knowledge of what might have happened to their children [14]. The three different ways of asking produce very different sets of data. In addition, some studies attempt to gather lifetime prevalence data while others attempt to ascertain incidence in the past year. A survey of 1,500 Romanian families obtained data from both children and adults. This study noted that 0.1% of parents admitted to sexually abusing their children while 9.1% of children report having been sexually abused. However, the question asked the children included sexual victimization by others besides parents [5].

Most existing prevalence surveys of sexual abuse ask adults about their own childhood which contrast with physical abuse surveys which are more likely to ask parents about acts toward their own children. In Ukraine, a survey of children was undertaken which reported "on average every fifth-sixth teenager below 18 years (both sexes) had been sexually abused"[35]. In a survey or parents, the Gallup poll organization asked parents if they thought that their child had been sexually abused in the past year, without specifying perpetrator, and obtained a rate of 20/1,000 or 2% [14].

Among published studies of adults giving retrospective histories, prevalence rates for men, reporting about their own childhood, range from 1% [36] to 19% [27]. International lifetime prevalence rates for child sexual victimization among adult women range from 0.8% using rape as the definition to 45% with a much wider definition [27, 37]. Using studies reported in international

journals over the 1990's, a mean lifetime prevalence rate of childhood sexual victimization of women as girls is 19% and men as boys is 7%. These wide variations in published prevalence estimates could mask real differences in risk in different cultures or result from differences in the conduct of the studies [37].

Emotional and psychological abuse

Cultural issues appear to strongly influence parental choice of techniques which some may regard as employing psychological or emotional harm or threats to make a child behave. Defining psychological abuse in these terms is difficult as the consequences are likely to be very different by context and by child age. The WorldSAFE data suggest that parental yelling or screaming at children is a common response shared across many countries. Cursing children and calling them names is a more variable response although even the lowest rate for name-calling was 15%. Rates for threats of abandonment and locking a child out of the home were widely divergent among the WorldSAFE countries. Further research is needed to understand the significance of threats of abandonment or locking children out. Understanding and developing prevention and intervention for psychological or emotional abuse remains a major international challenge (Table III).

Table III: WorldSAFE data: reports in % of verbal or psychological discipline in prior 6 months for population-based samples in 5 countries (from ref [14]).

	Chile	Egypt	Philippines	India	US
Yelled or screamed	84	72	82	70	85
Called names	15	44	24	29	17
Cursed	3	51	0		24
Refused to speak	17	48	15	31	*
Threatened to kick-out	5	0	26		6
Threatened abandonment	8	10	48	20	*
Threatened evil spirits	12	6	24	20	*
Locked out	2	1	12		*

*Not collected in the US 1995 Gallup survey

Neglect

Some authors have included societal and institutional conditions such as hunger and poverty as a part of a definition of child neglect while others have focused on parental omissions in providing care [38]. Because of difficulties in ascertaining the presence of neglect in the absence of demonstrable harm, laws in the US generally define a child as being neglected only when the child has been harmed. Many authors include neglect, or harm from parental omissions in care, as part of the definition of abuse [17, 39-41].

Clearly, societal conditions including exposure to toxic chemicals or war may be as dangerous for children as parental omissions in supervision or care [41]. Because definitions vary, it is difficult to estimate the global dimensions of the problem. In Kenya, abandonment and neglect were the most commonly cited aspects of child abuse when adults in the community were asked to define child abuse. In the same study, 22% of the children reported that they had been neglected by their parents [42]. In the US, 60% of reports for child abuse and neglect are for reasons of neglect and it has been estimated that the rate of neglect is 14.6/1,000 children or almost 1.5% [43].

Despite the apparent widespread misclassification, there is general agreement that fatalities from child abuse are far more frequent than official estimates from vital records in every country where studies of infant deaths have been undertaken.

Dynamics of abuse

The most widely adopted explanatory model or theory is the "ecological model" [5, 46]. In this model, there are four contributory components: i) child characteristics; ii) caregiver and family

characteristics; iii) community characteristics; and iv) the social, economic and cultural characteristics of the society. Each of these factors plays a role in the evolution of abuse. While child factors don't "cause" abuse, some children are more at risk for abuse than others. Each of the factors appearing below has been linked to child abuse or neglect in more than one study. However, the factors listed may be only statistically associated and not causally linked [13].

Children characteristics

Child age

Age is an important factor influencing the type of abuse experienced [3, 15, 32, 38, 44]. Fatal child abuse is a problem for young infants [1, 20, 22]. Physical abuse frequencies change with age and location. Rates peak between 6 and 12 years of age in the US, between 6-11 years of age in India and between 3-6 years of age in China [3, 14, 31]. Sexual abuse rates rise after the onset of puberty with the highest rates during adolescence [14, 16, 45].

Gender

Girls are at higher risk for infanticide, sexual abuse, educational and nutritional neglect, kidnapping and forced prostitution in most countries [3, 13, 17, 22]. In the US, infant boys appear to be at higher risk for shaken baby syndrome [46]. Boys appear to be at greater risk of harsh physical punishment in many but not all countries [4, 31].

Other conditions

Premature infants, twins and handicapped children have been shown to be an increased risk for physical abuse, sexual abuse and neglect [38, 45-47].

Caregiver and family characteristics

Gender

Women, compared to their partners, self-report more use of physical discipline of children in China, Egypt, India and the US [3, 14, 28, 31]. Children report more violence by mothers in Kenya [17]. In the US, single mothers are 3 times more likely to self-report the use of harsh physical discipline than mothers in two-parent families [14]. However, men most commonly perpetrate life-threatening head injuries, abusive fractures and fatal child abuse [48, 49]. Fathers were reported to be more punitive by child focus groups in Ethiopia [50]. Sexual abuse offenders, for both female and male victims, are predominantly men [2, 13, 45, 51]. Rates of male perpetrators for female victims range from 92.0% [45] to 99.2% [2]. For male victims the range is between 63.2% [52] and 85.7% [2, 45].

The relationships between caregiver gender and child abuse may be more complex than it first appears. Women render more child care and, in some countries, report more frequent use of harsh punishment behaviours [3, 28]. The apparent increased risk of serious injury perpetrated by men may not be a matter of increased rate but more closely tied to the physical strength of the caregiver.

Intergenerational transmission

Parents who were maltreated as children appear to be at higher risk of abusing their own children although the relationship is complex [13, 53-55]. Analyses of the data from several studies suggest that the majority of abusing parents were not themselves abused [54].

Domestic violence

Domestic violence and child abuse appear to be very strongly linked. Recent studies have reported that domestic violence in the home doubled the risk of child abuse [9]. Domestic violence has been observed as a risk factor for abuse in many countries including Colombia, China, Egypt, Fiji, India, Mexico and the US [1, 4, 32, 55]. Among known abuse victims, upwards of 40% have concurrent reports of domestic violence [43, 56].

Isolation and stress

Absence of support for the parent places the child at higher risk as do life changes and other stressors [32, 38, 56-58]. Household crowding appears to increase the risk for children [32, 38].

Substance abuse

Substance abuse in the household is a risk factor for abuse [3, 13, 42, 50, 55, 59].

Community context

Poverty
Poverty is strongly associated with physical abuse, neglect and sexual abuse in many countries and in many studies [2, 3, 6, 13, 42, 45, 59]. Interestingly, in two countries there is evidence that physical abuse rates are higher among upper income families although the data from both these countries on higher rates among upper income families both come from urban environments [15, 28]. An explanation offered by one of the investigators suggests that in these societies is that there is an expectation that children are well-behaved in public or they bring shame on their families (Fatma Hassan, personal communication). In the US, families in the lowest stratum of household income, below $10,000 per year, had rates of child physical and sexual abuse 3 times the rate for families with more than $50,000 annual incomes [14].

Social networks and neighbourhood connections
Social networks or neighbourhood connections have been shown to be protective of children [12]. Children in neighbourhoods or communities with less "social capital" or social interaction and investment in the community appear to be at greater risk and have greater levels of psychological or behavioural problems [60].

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Societal context

Social conflicts or war, education, child support, child labour, mandatory reporting laws, special criminal justice systems for children, national health systems, home visiting services and the education of health professionals are just a few of the society-level factors influencing the well-being of children and families [2, 7, 11, 17]. These issues fit into an ecological model for understanding and preventing abuse. Some of these societal level factors may compromise parental abilities to care for children. Others, such as access to home visiting and health care, may enhance parental abilities or lead to early detection and treatment. Child labor may restrict educational opportunities or put children at risk from environmental exposures or safety hazards [38].

Manifestations of abuse

Physical abuse

Serious or fatal child abuse is most often a result of abusive head injury or injury to the viscera [22, 46]. Abusive head trauma is the most common cause of death with children in the first 2 years of life being most vulnerable [46, 61]. Because forces inflicted on the body pass through the skin, patterns of injury to the skin can be clear manifestations of abuse [38]. The skeletal manifestations of abuse may include multiple fractures at different stages of healing, fractures of bones that are very rarely broken in normal situations and characteristic fractures of the ribs and long-bones. Specific patterns of injury, such as the combination of blood clots on the brain (subdural haematomas), retinal haemorrhage and "chip" fractures at the growth plates of the bones at the knees, ankles and elbows are characteristic of specific abuse "syndromes" such as the "shaken baby syndrome" or the "battered child syndrome" [38]. Other forms of abuse leave less characteristic patterns of injury and may take special training and skills to recognize [11].

Beatings and other forceful hitting of children results in bruising only if the forces are sufficiently high to break capillaries [38]. Children in good nutritional balance generally have skin that is more resistant to bruising. Bruises over prominent protuberances of bone are generally less suspicious than bruises over muscle or fat that are likely to help absorb energy. Other injuries result in abrasions, lacerations or burns. Wounded skin begins healing rapidly although the rate of healing depends upon the injury location, the child's nutritional status, the presence of infection and foreign bodies in the wounds. Studies have shown that it is difficult to date

bruises reliably. Injury inflicted with an object may result in "pattern" bruising (e.g. belt marks) (see reference [29] for detailed reviews of medical findings).

As noted previously, abusive head trauma is the most common cause of death from child abuse [46]. Shaking represents a prevalent form of abuse seen in very young children. The majority of shaken children are less than 9 months of age and the majority of perpetrators are male [46, 61]. As noted previously, the male predominance may not represent an actual difference in frequency of the act by male and female caregivers but may instead represent differences in strength. Although small "points" of haemorrhage on the retina or back of the eye have been reported in a few medical conditions, significant amounts of blood in multiple layers of the retina of the eye is virtually never caused by anything other than severe shaking injury. Large eye haemorrhages are induced by the "rotational" forces of shaking and are not likely the result of simple falls from tables or beds. Evidence has accumulated that about 1/3 of severely shaken infants die and the majority of the survivors suffer the long-term consequences of mental retardation, cerebral palsy and blindness [46, 61].

One of the "syndromes" of child abuse is the "battered child syndrome." This term is reserved for children with evidence of repeated devastating injury to the skin and the skeletal and nervous systems. Children with multiple fractures of different ages, head trauma and severe visceral trauma with evidence of repeated trauma may be included with this term. Fortunately, this tragic pattern is rare. Many of the case-series of child abuse in the international medical literature refer to children victimized in this fashion [17, 56].

Sexual abuse

It is not uncommon for children who have been sexually abused to present to medical care with symptoms of infection, genital injury, abdominal pain, constipation, pregnancy, chronic or recurrent urinary tract infections or behavioural problems [38]. However, most children have no physical findings. It is usual to have a normal physical examination after sexual abuse. Recognition of child sexual abuse requires a high index of suspicion and familiarity with the verbal, behavioural and physical indicators of abuse. The cornerstone of evaluation of a suspicion of child sexual abuse is the history. Sexualized behaviour alone is insufficient as evidence that a child may have been sexually abused although such behaviour may trigger investigation. Most sexually abused children do not acquire sexually transmitted diseases; however, the presence of some specific diseases can be used to confirm sexual abuse as these diseases cannot be transmitted asexually [38].

Neglect

Deprivation of food with hunger and/or failure-to-thrive can be manifestations of neglect, as can non-compliance with health care recommendations or failure to seek appropriate health care [62]. Other health concerns include exposure of children to drugs or inadequate protection from environmental hazards. Abandonment, inadequate supervision, poor hygiene and deprivation of an education may be evidence of neglect [38].

Consequences of abuse

Physical, behavioural and emotional manifestations of abuse vary between children, depending on the child's developmental status when the abuse occurs, its severity, the relationship of the perpetrator to the child, the length of time the abuse goes on for and supportive or buffering factors in the child's environment [8, 9, 13, 26, 38, 52, 53]. The effects of abuse can be serious and long lasting. A number of developed country studies have illustrated serious societal consequences including delinquency, school failure, teenage pregnancy, suicide and drug abuse.

There is evidence that major adult forms of illness, including ischaemic heart disease, cancer, chronic lung disease, osteoporosis, irritable bowel disease and fibromyalgia, have origins in child abuse [9]. The apparent mechanisms for these startling impacts are the development of behavioural risk factors such as increased smoking, risky sexual practices and poor diet. Research has also documented important direct acute and long-term physical consequences [51].

Similarly, there are many studies demonstrating short- and long-term psychological harms. A recent cohort study of the harms from sexual abuse concludes that the majority of victims appear to have mental health difficulties [63]. Some children have a few symptoms that do not reach clinical levels of concern or are at clinical levels but which are not as high as children generally seen in clinical settings. Other survivors have serious psychiatric symptoms such as depression, anxiety, substance abuse, aggression, shame or cognitive impairments. Finally some children meet full criteria for psychiatric illness, including post-traumatic stress disorder, major depression, overanxious disorder and sleep disorder [64].

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Education of health professionals

It is apparent that many health professionals around the world lack the skills or inclination to identify cases of abuse. Data from the US are illustrative. A survey of American medical schools observed that 95% of medical school deans reported that their schools included information about child abuse in the medical school curriculum but the median amount of class-time spent on child abuse was two hours. It seems unlikely that medical students will develop adequate skills with just 2 hours of instruction.

Other evidence bears out the failure to adequately prepare health care workers to recognize child abuse. Studies have demonstrated little agreement between physicians of findings indicative of child sexual abuse and a high rate of missed diagnosis on abusive head trauma presenting to a major medical center [48]. Colleagues from the faculties of some of the most prestigious medical schools in the developing world suggest that the problem may be even greater in other regions of the world. A report from Turkey observed: "Some paediatricians, in a national conference, resented having to spend unnecessary time to this very local, social, non-medical problem" [25].

Conclusions

Although the predominance of western publications about the problem of child abuse might lead to the interpretation that child abuse is a western problem, ample data exist to demonstrate that the problem may actually be greater in non-western countries. Child abuse is more common than many of the infectious diseases for which massive world-wide efforts at disease eradication have been mounted. Child abuse involves significant percentages of the population and results in societal costs.

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There are great difficulties with definitions of abuse across cultures and countries. There are significant variations in patterns of caring for children and even the compositions of families around the globe. There is little public or health professional recognition of child abuse in most of the world. Greater public and health professional recognition is a needed start to eradication. Health professionals must learn to recognize child abuse and neglect. Governments must develop surveillance and intervention. Effective intervention strategies have been developed. Control efforts and policies must be directed at

the children, the caregivers and the environment before, during and after occurrences of abuse or neglect.

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