A profile of abuse

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SUMMARY Of 260 children considered to have been the victims of child abuse or neglect, or both, 149 suffered non-accidental injury, 71 had evidence of growth problems, 87 had developmental and speech delay, and 63 showed evidence of appreciable behaviour disturbance. While the overall prevalence of development and behaviour problems in the series was high there were particular associations noted between growth problems and developmental delay, between increasing age and behaviour disturbance, and between evidence of emotional deprivation and both behaviour disturbance and developmental delay. Children with non-accidental injury but without growth problems or emotional deprivation were least likely to show behaviour or developmental problems.

The features associated with child abuse and neglect can be classified according to whether they describe factors that cause the abuse (primary) or its consequences. Thus primary factors (causative) such as parental violence, sexual deviance, or lack of attention lead to understimulation and emotional deprivation; poor feeding practices or poor physical care may lead to identifiable injuries, sexual abuse, behaviour disturbances, intellectual impairment, failure to thrive, and evidence of physical neglect, respectively. It is important to distinguish between these two categories as the first only indicates that circumstances exist, which might have consequences for the child, while the latter provides evidence that the child has actually suffered harm. It is common knowledge that some children seem to escape the consequences of living in depriving and abusing families relatively unscathed. A child given loving care and attention by one partner but who is persistently sexually abused by another is likely to suffer as severe behaviour problems as a child subjected to severe emotional deprivation. Isolated episodes of neglect or even violence may be much less damaging to long term development than persisting chronic mismanagement.

There is little information about the interrelation of various forms of abuse and neglect. The present report is a descriptive analysis of 260 children who have been the subjects of child abuse presenting to the Children's Hospital in Sheffield over a period of 10 years.

Patients and methods

The sample consisted of all children with clinical

evidence of abuse and neglect referred to one paediatrician (LST) between 1975 and 1986. The children were seen either in outpatient clinics or after admission to the ward. All the children had suffered either non-accidental injury, sexual abuse, non-organic growth problems in association with adverse home circumstances, developmental or speech delay not due to any intrinsic defect, gross physical neglect, or various combinations of these at either the time of initial assessment or subsequent follow up. No child was included in the series unless at least one of these findings was present. Additional findings included in the study are behavioural and emotional problems and evidence of emotional deprivation.

DEFINITION OF PROBLEMS

Growth

The children in this category were included on the basis of our definition that has been reported in a previous study.¹

Developmental/speech delay

Three categories of cases came under this heading:

- (1) Children under 2 years of age (57% of the series) who underwent standard developmental screening either by the Denver method² or that of Illingworth.³ Children who were at least four months behind chronological age in social and cognitive development including speech were classed as having developmental delay. All these children had normal psychomotor milestones.

- (2) Children over 2 and under 5 years of age (28%) with delayed speech who were assessed by a speech therapist who considered that active intervention was required.
- (3) Schoolchildren (16%) whose learning skills were considered sufficiently impaired to require special help.

All the preschool children with developmental delay had impaired speech development—that is, impairment in language development but not including problems of articulation. In all these cases alternative explanations for developmental and language delay were considered and 15 children with problems such as hearing loss, global delay beginning in early infancy, and syndromes associated with mental retardation were excluded from this part of the analysis.

Emotional deprivation

In addition to clinical evidence of possible abuse and neglect on examination evidence of one primary (causative) factor, emotional deprivation, was considered. Evidence for this depended on descriptions by community doctors, health visitors, general practitioners, and social workers in either reports or minutes of previous case conferences concerned with the child and its family. These observations included statements that parents did not hold, cuddle, speak to, or play with the child and that they did not respond in an appropriate way to their needs or showed excessively rigid attitudes to such matters as behaviour or cleanliness.

Behavioural or emotional problems

These children fell into three categories:

- (1) Those who were referred independently of the authors to child psychiatrists or psycho-

- logists and assessed as being sufficiently disturbed to require further help.
- (2) Children who on admission to hospital were noted to be disturbed and whose problems were confirmed by a child psychiatrist.
- (3) Children whose behaviour at school led to some sort of action such as exclusion from class, transfer to a special school for emotionally disturbed children, or to residential care.

As this was not a prospective study and concerned follow up of children over many years, no formal assessment of behaviour was carried out but all cases in this category were considered by independent agencies or services to be appreciably disturbed.

Statistical analysis was by χ^2 with 95% confidence intervals based on the odds ratio, and Mann-Whitney U test.

Results

There were 260 children in the series referred to the Children's Hospital, Sheffield between 1975–86. Table 1 summarises the various categories of abuse in the series, the percentage of children in each category initially, their mode of referral, and the prevalence of various forms of abuse and neglect after investigation.

One hundred and fourteen cases out of 129 that were initially diagnosed as non-accidental injury were referred by emergency services (88%) whereas cases of growth problems were referred mainly by primary care services, general practitioners, and health visitors (34 out of 47 cases; 72%).

After the initial diagnosis more cases were recognised either at first assessment or during subsequent follow up: non-accidental injury, 20 (13%); growth problems, 24 (34%); emotional deprivation, 69

Table 1 No (%) children with primary diagnosis at first examination in relation to nature of referral and prevalence of features of abuse after full assessment (n=260)

Nature of referral	All cases	Non-accidental injury	Growth problems	Emotional deprivation	Physical neglect	Emotional and behavioural problems	Speech/developmental delay	Sexual abuse
Emergency services	168 (65)	114 (88)	10 (21)	23 (49)	11 (58)	2 (29)	1 (25)	3 (43)
Primary health services	74 (29)	12 (9)	34 (72)	17 (36)	5 (26)	5 (71)	3 (75)	4 (57)
Baby clinic (hospital)	10 (4)	0	1 (2)	6 (13)	2 (11)	0	0	0
Hospital transfer	8 (3)	3 (2)	2 (4)	1 (2)	1 (5)	0	0	0
Total								
Initial	260	129 (50)	47 (18)	47 (18)	19 (7)	7 (3)	4 (2)	7 (3)
Final*		149 (57)	71 (27)	116 (45)	84 (32)	63 (24)	87 (34)	7 (3)

*Exceeds 100% because of multiple findings. Total initial and final percentages are calculated from the total number of cases; all other percentages are calculated from the initial total in that category.

Table 2 Age ranges at diagnosis of various categories of abuse

Category	No*	Mean (SE) age in years	Range	Standard deviation	Comparison of each subset with the rest of the sample (Mann-Whitney <i>p</i> value)†
Whole series	260	2.29 (0.18)	0-14	2.89	—
Non-accidental injury	149	2.48 (0.22)	0-13	2.66	+ <i>p</i> <0.01
Growth problems	71	1.60 (0.25)	0-12	2.02	- <i>p</i> <0.05
Speech/developmental delay	87	2.05 (0.30)	0-13	2.50	- <i>p</i> <0.05
Behavioural/emotional problems	63	4.0 (0.46)	0-14	3.60	+ <i>p</i> <0.001
Physical neglect	84	2.76 (0.36)	0-13	3.20	Not significant

*Total in number column exceeds number in sample because of multiple feature in many subjects.

†Each subset is compared with the rest of the sample with the individuals in the subset removed; + or - indicates the direction each subset differs from the rest.

By Mann-Whitney U test: growth problems *v* behavioural/emotional problems, *p*<0.001; non-accidental injury *v* growth problems, *p*<0.05; non-accidental injury *v* behavioural problems, *p*<0.05. In each subset, the subset being compared has been omitted where overlap occurs.

(60%); neglect, 65 (77%); behaviour problems, 56 (89%); and evidence of developmental/speech delay, 83 (95%). Statistical correlation was based on presence of these features at the end of the study period.

The age distribution of the various categories is summarised in table 2.

DEVELOPMENT AND SPEECH DELAY

A total of 87 (34%) out of 260 abused or neglected children showed evidence of developmental or speech delay, or both. In four cases this was the primary diagnosis while in 83 it was an associated or subsequent finding. The association with growth failure and non-accidental injury is shown in tables 3 and 4.

Table 3 Children with developmental/speech delay associated with growth problems and non-accidental injury

	No (%)	Total No (%) in series (<i>n</i> =260)	% In each subset
Developmental/ speech delay associated with:	<i>n</i> =87		
Growth problems	38 (44)	71 (27)	54
Non-accidental injury	47 (54)	149 (57)	32
Non-accidental injury without growth problems	26 (30)	116 (45)	22
Growth problems without non-accidental injury	17 (20)	38 (45)	45
Growth problems and non-accidental injury	21 (24)	33 (13)	64

The results of χ^2 analyses of these data show that after correction for overlap among subsets, growth problems are significantly more often associated with delay than non-accidental injury but that the combination of growth problems and non-accidental injury has a higher prevalence of developmental delay than either alone.

Table 4 Comparisons of prevalences of developmental/speech delay in children with growth problems and non-accidental injury

	χ^2	Odds ratio (95% confidence intervals)	<i>p</i> Value
Remaining cases in series compared with:			
Growth problems	16.40	3.29 (1.79 to 6.05)	<0.001
Non-accidental injury	0.39	0.81 (0.47 to 1.42)	NS
Growth problems without non- accidental injury	1.98	1.76 (0.83 to 3.73)	NS
Non-accidental injury without growth problems	10.6*	0.39 (0.22 to 0.70)	<0.001
Growth problems and non-accidental injury	13.9	4.26 (1.87 to 9.80)	<0.001
Growth problems only compared with non-accidental injury only	6.02	2.80 (1.20 to 6.50)	<0.01
Growth problems and non-accidental injury compared with non-accidental injury without growth problems	18.3	6.06 (2.40 to 15.20)	<0.001
All growth problems compared with non-accidental injury without growth problems	17.6	3.99 (2.00 to 8.00)	<0.001

*Negative relation.

EMOTIONAL AND BEHAVIOURAL PROBLEMS

Only seven children were initially found to have evidence of behaviour disturbance. Some other form of abuse or neglect had been previously noted in the remaining 56 cases. The factors associated with children showing behaviour and emotional problems are summarised in table 5. There was significantly more disturbance among children who had developmental delay and physical neglect than for the rest of the series (χ^2 15.6; $p<0.001$). The prevalence of disturbance in relation to age is shown in table 6.

EMOTIONAL DEPRIVATION

Evidence of deprivation was present in 47 (18%) out of the 260 children initially and rose to 116 (45%) with follow up. The highest prevalences of deprivation were seen in children who had developmental/speech delay, emotional and behaviour problems, or physical neglect (table 7). All the children initially diagnosed as being emotionally deprived subsequently developed one or more of the other features listed.

RELATION OF NON-ACCIDENTAL INJURY TO OTHER FINDINGS

Sixty seven (45%) children out of 149 with non-accidental injury had neither growth problems nor were considered to have been emotionally deprived. Of these six (9%) had developmental/speech delay and five (8%) had behaviour disturbance. Of those 82 (55%) children with non-accidental injury who had either growth problems or emotional deprivation, or both, 41 (50%) showed developmental/speech delay and 30 (37%) had behaviour disturbance. The differences between the two groups was highly significant for both developmental/speech

Table 6 Changes in prevalence of emotional and behavioural problems with age

	No/No in whole series (%)
Children with emotional and behavioural problems:	
≤2 years	19/147 (13)
<2-4 years	13/52 (52)
<4-6 years	12/28 (43)
<6 years	19/33 (58)

Row $\times$ column χ^2 (multiple contingency): 35.5, $p<0.001$; χ^2 ≤4 years compared with >4 years: 28.8, $p<0.001$.

Table 7 Comparison of prevalence or deprivation in various forms of child abuse

	χ^2	p Value	Odds ratio (95% confidence intervals)
Non-accidental injury (58/149) compared with the rest (58/111)	4.05	<0.04*	0.58 (0.34 to 0.98)
Developmental/speech delay (64/87) compared with the rest (29/173)	78.8	<0.001	13.8 (7.10 to 27.10)
Emotional behaviour problems (45/63) compared with the rest (71/197)	22.8	<0.001	4.4 (2.30 to 8.60)
Physical neglect compared with the rest (61/176)	20.6	<0.001	3.58 (2.00 to 6.40)
Growth problems (35/71) compared with the rest (81/189)	0.62	NS	1.30 (0.72 to 2.30)

In each subset, the one with which it is being compared is omitted.
*Negative relation.

Table 5 Factors associated with children showing behavioural and emotional problems (n=63)

	No/No in each subset (%)	χ^2	Odds ratio (95% confidence intervals)	p Value
Emotional and behavioural problems associated with:				
Whole series	63/260 (24)			
Non-accidental injury	35/149 (24)			
Growth problems	9/71 (13)			
Developmental/speech delay	31/87 (36)			
Physical neglect	29/84 (35)			
Non-accidental injury compared with growth problems	30/114 (26)	1.69	2.08 (0.74 to 6.14)	NS
Non-accidental injury compared with developmental/speech delay	6/41 (15)			
Non-accidental injury compared with growth problems	18/102 (18)	3.7	0.43 (0.18 to 1.01)	NS
Growth problems compared with developmental/speech delay	16/48 (33)			
Growth problems compared with developmental/speech delay	3/38 (8)	*	—	<0.01
developmental/speech delay	27/59 (46)			

*Fishers's test of exact probability.

delay (χ^2 27.9; $p < 0.001$) and for behaviour problems (χ^2 15.8; $p < 0.001$).

Discussion

The effects of child abuse and neglect on development and behaviour have been the subject of recent concern.⁴⁻⁷ Their association with poor growth is a well known phenomenon.⁸ It has also been noted that abused children who failed to thrive subsequently developed 'intellectual and verbal failure to thrive' and were becoming 'problem children'.⁹

The cause of growth failure in abused and neglected children remains a matter for speculation¹⁰ with workers dividing between those who regard it as primarily a nutritional problem^{11 12} and those who emphasise the endocrine disturbance secondary to deprivation.¹³⁻¹⁵ In either event the presence of poor growth is very likely to be accompanied by a disorganised, disrupted, and deprived family environment that would help to explain the unfavourable prognosis for intellectual and behavioural development.^{16 17} Underlying poor nutrition may be common to both hypotheses.⁷

Although some catch up in physical growth tends to occur with time,¹ it may not allow for the attainment of full genetic potential for size and may not be associated with full recovery of intellectual potential.¹⁸ Some children may, however, be very resilient to adversity and do well despite their background of abuse.¹⁹

Some authors have defined the underlying cause of growth failure as a combination of absence of proper maternal attachment with parental anger, hostility, and hate,¹⁴ a combination likely to result in developmental delay and behaviour disturbance. Our data show that such secondary features are common and illustrate the importance of careful paediatric evaluation of all abused children. It may be that these phenomena stem from events at, or soon after, birth of the child leading to a disturbed child-parent relationship.²⁰ In view of the fact that in an appreciable proportion of children with growth failure no cause, either organic or psychological can be detected,²¹ psychosocial growth failure should not be diagnosed without additional evidence of poor parenting or the consequences of abuse or neglect. Physical neglect appears to be a useful 'marker' for emotional deprivation and its consequences.

The prevalence of developmental/speech delay in the cohort of abused and neglected children reported here is high (34%), higher than would be expected in the general population. It is likely that the degree of delay exhibited by these children is in excess of what might be expected for any equivalent group but in the absence of population data this cannot be

certain. The comparisons in this study are relative and indicate that problems of growth rather than physical injury are more likely to be associated with delay. This is not surprising when it is recognised that whereas physical injury can be the result of a relatively short term maladjustment, growth problems indicate much more long standing difficulties. This difference also indicates that delay in speech and development is more than merely an epiphenomenon in the child abuse spectrum.²²⁻²⁴

The appreciably higher age distribution of the injured children is to some extent accounted for by the 'over-chastisement' of older children. In a proportion of these this appears to stem from intolerable disturbed behaviour due to neglectful or abusive parenting in the past. The older abused children thus fall into two categories: those in whom there has been a long term history of mismanagement and those in whom the abuse—usually non-accidental injury—is the result of recent change—that is, a new step father or cohabitee or some negative change in family circumstances. The former are likely to show the emotional and developmental consequences of long standing abuse and neglect.

Nineteen (58%) of the 33 children over 6 years of age had behaviour or emotional problems. Nearly half the children with these problems had developmental/speech difficulties in contrast with less than one third of the series as a whole. Relatively few of the younger children with growth or development problems showed behaviour difficulties probably because of their age.

The children who showed developmental delay, and in the older children disturbed behaviour, were most likely to have been emotionally deprived. The higher prevalence of development and behaviour problems in non-accidentally injured children who had either shown growth problems or evidence of emotional deprivation also points to the effect of more chronic poor parental practice on abused children. The prevalence of emotional and behavioural problems would be expected to rise as the infants and toddlers in the series reach school age. Given an overall prevalence of 24%, which rises steadily with age, these children pose major problems despite all efforts at rehabilitation. Many older abused children appear to emerge from their experience with seriously damaged personalities despite active intervention. A pattern of abuse manifesting as injury with growth problems and developmental delay may not be readily amenable to rehabilitation as these are the children most likely to develop behaviour problems and learning difficulty. It is disturbing to note the increasing proportion of children with emerging personality problems with increasing age (table 6).

The virtual absence of children with sexual abuse in this series stems from two factors. In the first instance, most of the cases come from a period where sexual abuse had not gained its current importance. Secondly, during the latter few years of the study most children who were considered to be primarily sexually abused were not included unless there was evidence of other forms of abuse, as this study was not primarily concerned with sexual abuse. It is possible that at least some children in the series also suffered sexual abuse that was not diagnosed.

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