do parents contribute to their children's health problem?

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introduction

Although the question of parental contribution to children's health has received considerable attention,[1] current work suggests that even some of the most basic parental «duties» can not always be taken for granted.[2] In a conservative estimate, 3.6 per cent of American parents are likely to be involved in acts of violence against their own children, over a one-year period.[3] Obviously, it would be much more difficult to estimate what proportion of parents put at risk the health of their children or fail to secure their optimal development, through acts of omission or commission. For the most blatant form of child abuse and neglect, it is already well known that the probability of its occurrence does increase in the presence of certain distinct family characteristics.[4] However, relatively little is known about the less obvious or less dramatic form of «child neglect»—if that were to be defined as the sort of behaviour which fails to meet some minimal requirements of a «reasonable» parental care. The event of a child's health problem offers a good opportunity to examine parental behaviour from this point of view.

The aims of the present study were: (i) to inquire whether parents do contribute to their children's health problem and to assess its severity, and (ii) to identify some characteristics which may account for such a contribution.

method

Subjects: The study was carried out in one of the two paediatric hospitals of Athens which provide, on alternative days, an emergency service mainly for the Greater Athens area. Information was collected on 315 children, under the age of 15, who were referred to three hospital departments: Paediatric (n=125), Orthopaedic (n=93) and Surgical (n=97).

Procedure: To secure a representative sample, we took three 24-hour samples of «emergency days» in proportions which reflect the total number of referrals in each hospital department. The study was designed so as to disturb as least as possible the daily routine of each clinic.

1. Children's Rights. United Nations Resolution, 20th November, 1959.
2. Baher, E. et al. (1976), *At Risk,* Routledge & Kegan Paul, London.
3. Gelles, R.J. (1978), «Violence toward Children in the United States», *Amer. J. Orthopsychiat.,* 48, 4, 580.
4. Schmidt, B.D. (1978), *The Child Protection Team Handbook,* Garland STPM Press. N.Y.

The research worker sat beside the examining physician and recorded all relevant information on a precoded questionnaire. Care was taken to ensure that a minimum of questions were asked: Who sent the child to hospital? When did the problem begin? If the problem was a chronic one, for how long it had been exacerbated? Was there a previous consultation before referral? If there was, to what extent treatment was adhered to? What was the father's (or the caretaker's) occupation?

At the end of each interview the examining physician was asked to provide ratings on two three-point scales: First, whether, at the time of hospital referral, the presenting problem posed a danger to the child's life (0: none, 1: mild, 2: severe); and secondly, whether, from the information available at the time of hospital interview, the parent (or the caretaker) had «contributed» to the child's health problem (0: not at all, 1: possibly, 2: certainly). Similar ratings were made independently by the research worker. In the present study we made no distinction between intentional and unintentional «contribution»; neither between those behaviours which provoke a problem and those which only serve to aggravate it. A «contribution» to a child's problem was defined as *«any parental act which could reasonably be assumed to have caused a child's problem, a deterioration of health or a delay in recovery; such acts were judged to be present when admitted by the parents themselves (or by other informants) or when they could be safely inferred from the events which took place between the problem's onset and the child's referral to hospital»*. When there was a doubt about parental contribution, a lower rating was used.

When the interview was completed, the research worker recorded certain additional information about the main informant (usually the mother) on a five-point scale: The informant's attitude and behaviour during the interview, and the adequacy of the account concerning the child's health problem. A rough subjective estimate of the parents' intelligence level was also used.

Reliability: The agreement between the three research workers was assessed in joint interviews of 16 unselected cases. In respect of «parental contribution» there was agreement in 88 per cent of 48 pairs of joint ratings. To secure a greater uniformity in rating, all cases for which a «possible» or a «certain» parental contribution was noted, were reviewed and a final rating was agreed upon by discussion of all available information on each case.

In respect of parental behaviour at interview, the interrater agreement was much lower (72%). The mean difference among raters on any of the five-point scales (for 112 joint ratings) was 0.79 (S.D.=1.08). In the subsequent analysis only the extreme ratings (4 or 5) were used.

results

Table I presents the assessment of «parental contribution» by the doctors and the observing research worker for the three hospital departments. It will be seen that doctors tended to attribute severe parental responsibility to a higher proportion of children's problems. This illustrates the more stringent criteria in the assessment of severity of parental contribution adopted by the research workers; and it is these ratings which have been finally used in the present study.

As it would have been expected, a greater parental contribution was assigned to problems with some «external» cause (Table II), though it is notable that one third of problems with «possible» or «certain» parental contribution is to be found among other types or illnesses or health problems as described in the category named «other causes».

TABLE I. *Estimated «Parental Contribution» by Doctors (A) and Research Workers (B) in a Sample of 315 Children Referred to Three Hospital Departments*

Hospital Department	Parental Contribution	None		Possible		Certain	
		A	B	A	B	A	B
Paediatric (n=125)	N	105	105	8	16	12	4
	(%)	(84)	(84)	(6)	(13)	(10)	(3)
Orthopaedic (n=93)	N	71	80	18	10	4	3
	(%)	(76)	(86)	(19)	(11)	(4)	(3)
Surgical (n=97)	N	73	75	10	12	14	10
	(%)	(75)	(77)	(10)	(12)	(14)	(10)
Total	N	249	260	36	38	30	17
	(%)	(79)	(82)	(11)	(12)	(10)	(5)

TABLE II. *Problem at Referral for Children Assigned to «Non-Parental Contribution» (NPC), «Possible Parental Contribution» (PPC) and «Certain Parental Contribution» (CPC) Groups*

Problem at referral to hospital	NPC N	(%)	PPC N	(%)	CPC N	(%)	Total	
External causes								
Fracture	25	(9.6)	4	(10.5)	1	(5.9)	30	(9.5)
Injury	34	(13.1)	10	(26.3)	5	(29.4)	49	(15.6)
Bruise or dislocation	27	(10.4)	4	10.5)	3	(17.6)	34	(10.8)
Poisoning	—	—	6	(15.8)	—	—	6	(1.9)
Foreing body	2	(0.8)	—	—	—	—	2	(0.6)
Burns	1	(0.4)	—	—	2	(11.8)	3	(1.0)
Other causes								
Inflammation	23	(8.8)	2	(5.3)	3	(17.6)	28	(8.9)
Abdominal pain*	25	(9.6)	1	(2.6)	—	—	26	(8.2)
Other pains & aches	14	(5.4)	—	—	—	—	14	(4.4)
Pyrexia*	23	(8.8)	3	(7.9)	—	—	26	(8.2)
Vomiting-Diarrhea*	19	(7.3)	1	(2.6)	—	—	20	(6.4)
Cough-Dyspnea*	19	(7.3)	—	—	—	—	19	(6.0)
Hernia	11	(4.2)	—	—	1	(5.9)	12	(3.8)
Epilepsy	—	—	2	(5.3)	1	(5.9)	3	(1.0)
Miscellaneous	37	(14.2)	5	(13.2)	1	(5.9)	43	(13.6)
Total	260	(99.9)	38	(100.0)	17	(100.0)	315	(99.9)

* Principal complaint.

TABLE III. *Numbers (Percentages) of Children in Three Categories of Parental Contribution and Respective Risk to Life**

Parental Contribution	Risk to Life (1) None	(2) Moderate	(3) Severe	Total
1. None	176 (88)	64 (80)	20 (55)	260 (82)
2. Possible	16 (8)	12 (15)	10 (28)	38 (12)
3. Certain	7 (4)	4 (5)	6 (17)	17 (5)
Total	199 (100)	80 (100)	36 (100)	315 (100)

* Parental contribution (1&2 / 3) versus risk to life (1,2,3).
X^2 23.388; d.f. 2; p<.001 The significant result being due mainly to the difference in the percentage of possible or certain parental contribution between the «Severe risk to life» group (3) and the «None or moderate risk to life» groups (1+2) (45% versus 14%, X^2 20.55, d.f. 1, p<0.0001).

TABLE IV. *Type of Disposal for Children Assigned to «Non-Parental Contribution» (NPC) «Possible Parental Contribution» (PPC) and «Certain Parental Contribution» (CPC) Groups*

Disposal after emergency referral	NPC N (%)	PPC N (%)	CPC N (%)	Total N (%)
Admission to hospital	69 (26.5)	15 (39.5)	9 (52.9)	93 (29.5)
Out-patient treatment	54 (20.8)	11 (29.0)	5 (29.4)	70 (22.2)
Further investigations and observation	54 (20.8)	8 (21.0)	1 (5.9)	63 (20.0)
To be treated at home	44 (16.9)	3 (7.9)	– –	47 (14.9)
No treatment prescribed	39 (15.0)	1 (2.6)	2 (11.8)	42 (13.3)
Total	260(100.0)	38 (100.0)	17 (100.0)	315 (99.9)

* Admitted versus non-admitted children X^2=6.448; d.f. =2; p<0.05.
The significant result being due to the difference in the percentage of admissions to hospital between the «Certain parental contribution» group and the other two groups (53% versus 28%, X^2 4.73, d.f. 1, p<0.005).

There were two measures of severity of a child's problem: the risk to life imposed by the existing problem and whether or not admission to hospital was necessary.

Table III shows the relationship between parental contribution and risk to life. The association was a significant one: among children with «possible» or «certain» parental contribution there was an excess of life-threatening health problems. On the second measure of severity, children with parental contribution were more likely to be admitted to hospital (Table IV).

When the relevant information on children with possible or certain parental contribution was compared with that on the remaining (Table V), some notable differences emerged: Among the former there was an excess of children under 4 years, of children who had themselves contributed to their health problem, of children whose parents were self-blamed and of children for whom the main informant was a person other than the parent.

TABLE V. *Comparison of Some Characteristics Concerning Children with No Parental Contribution (Group A) and Children with Possible or Certain Parental Contribution to Their Health Problem (Group B)*

Item	Category	Group A	Group B	Significance*	
Referred by:	Parents	129(50)	35(64)	3.579	N.S.
	Others	131(50)	20(36)		
Informant:	Parent	247(95)	46(84)	9.219	0.001
	Other	13(5)	9(16)		
Parental social class:	Middle to high	100(40)	19(35)	0.434	N.S.
	Middle to low	150(60)	35(65)		
Distance from hospital	–10km	144(58)	38(42)	3.172	N.S.
	>10km	102(69)	15(31)		
Consultation before referral:	Yes	159(62)	28(51)	2.166	N.S.
	No	99(38)	27(49)		
Speed of referral:	–12 hours	102(41)	30(54)	3.473	N.S.
	>12 hours	148(59)	25(45)		
Previous admissions (–1yr)	Yes	36(14)	8(14)	0.041	N.S.
	No	224(86)	47(85)		
Child's contribution	None	203(78)	32(59)	8.110	0.005
	Possible or certain	58(22)	22(41)		
Parental self-blame	None	209(95)	28(62)	43.032	0.001
	Some	12(5)	17(38)		

* By chi squared and one degree of freedom.

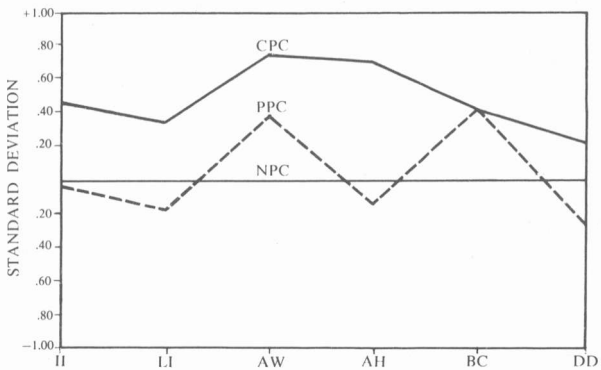
No significant differences were found in respect of source of referral, parental social class, distance from hospital, medical consultations before referral, speed of referral or the number of children's admissions to hospital during the preceding year.

Differences in the exact ratings of parental behaviour are depicted in Figure 1. As referred to earlier on, in the present analysis only the extreme ratings were used; and on these only one significant difference emerged. Parents, who have likely contributed to their children's problem, appeared to be, in the research worker's view, more anxious and more worried.

To what extent can one discriminate between children whose problem was aggravated by some parental contribution and the remaining? To answer this, we assigned a weight of 1 to each of the features on which significant differences had emerged. In this analysis we counted only those children who came to hospital with one of their parents (n=293). These features were: (i) age below 4; (ii) risk to life:serious; (iii) cause of problem:external; (iv) parental self-blame: and (v) parent—usually the mother—anxious or worried.

Figure 2 shows the percentage distribution of the three study groups according to each child's total

FIGURE 1



Mean values of «certain», «possible» and «no parental contribution» groups (CPC, PPC, and NPC) on six ratings of parental attitude and behaviour during the hospital interview, plotted as a proportion of one standard deviation from the NPC group.

Key: II: Inadequate Information
LI: Low Intelligence
AW: Anxious–Worried
AH: Aggressive–Hostile
BC: Blames Child
DD: Departs Dissatisfied

score on the above items. The median scores in the three categories of parental contribution (none, possible and certain) were 0, 1 and 2 respectively. A cutting line between a score of 1 and 2 gives a reasonable discrimination between the first and the third group: 82 per cent of the «certain contribution» group had a score of 2 or above while 69% of the «no contribution» group had a score of 0 or 1. The scores of the «possible contribution» group were between the other two, with 60 per cent of children scoring above the cutting line (2+) and 40 per cent below (0 or 1). The higher the score, the higher the probability of «parental contribution».

discussion

In the existing literature, case reports of adverse parental contribution to children's health are referred to as a «variants of child abuse and neglect». Meadow[5] proposed the term «Munchouzen Syndrome by Proxy» in a series of 8 children brought to hospital with strange or unexplained symptoms, who had extensive, and often painful, investigations before their problem's origin could be pinned down to the mother, who was «treating» the child various drugs or was even adding blood to the child's urine in an attempt to simulate illness. Others have reported similar, though somewhat less florid, cases.[6,7] From epidemiological surveys, evidence of parental contribution can be inferred from the link between children's accidents and poisonings on the one hand and psychological problems of the parents on the other.[8,9]

The present study sought to examine more directly whether parents do contribute to their children's health problems. The finding that *in 11 per cent of children's problems, which finally reach the hospital, there was a question of adverse parental contribution while for a further 5 per cent there was no doubt about it, is a sobering one.* It is notable, too, that these problems were often among the more life-threatening ones.

Obviously, a more detailed investigation is needed to identify the features which predispose parents to cause or aggravate their children's health problem. The

5. Meadow, R. (1980), Paper read at the Annual Meeting of the British Paediatric Association, York.

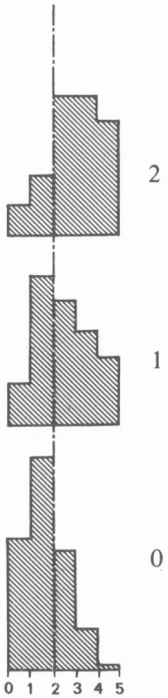
6. Fleisher, D. & Ament, M.E. (1977), «Diarrhea, Red Diapers and Child Abuse. Clinical Alertness Needed for Recognition; Clinical Skill Needed for Success in Management», *Clin. Pediatr. (Philadelphia),* 16, 9, 820.

7. Hvizala, E.V. & Gellady, A.M. (1978), «Intentional Poisoning of Two Siblings by Prescription Drugs: An Unusual Form of Child Abuse», *Clin. Pediatr. (Philadelphia),* 17, 6, 480.

8. Brown, G.W. & Davidson, S. (1978), «Social Class, Psychiatric Disorder of Mother and Accidents to Children», *Lancet,* 2, 8060, 378.

9. Silbert, R. (1975), «Stress in the Families of Children Who Have Ingested Poisons», *Brit. Med. J.,* 2, 87.

FIGURE 2



Distributions of three parental contribution groups (0:none; 1:possible; 2:certain) according to each child's cummulative score on five «predictor» variables (0-4) (The broken vertical indicates the optimal cutting line).

present study was an exploratory one and the setting in which it was carried out did not allow us to examine, for example, parental attitudes to health, or the degree of exposure to risks of health in specific family environments. Nevertheless, it is encouraging that even a small set of variables could be shown to be useful in identifying children with a high probability of adverse parental contribution. Some of these findings were not wholly unexpected: younger children referred to hospital with an injury or other «external» causes are already known to be at risk for the more direct forms of child abuse and neglect.[10] Other features such as parental behaviour during the hospital interview or the degree to which parents are prepared to accept their own contribution to a child's problem would need a more explicit definition so that they could be more reliably identified.

These findings, however, indicate that physicians must be aware that a substantial problem does exist, point some indicators which might aid its recognition and underline the need for more extensive studies of the relationship between parental behaviour and children's health.

10. See note 4.

APPENDIX

Examples of Ratings of «Parental Contribution» to Children's Health Problems

Ratings	Brief case description
1	8-month old boy with unattended finger wound. Brought to hospital 3 days later with an infected finger.
1	7-month old boy with diarrhea, cough and temperature for 5 days. Parents decided to treat him with antibiotics which were prescribed for one of their other children on a previous occasion. The child's symptoms started again when the parents stopped the antibiotics after the first 2 days.
2	3 1/2-year old boy with hydrocele from birth. Seen by a doctor one year previously who suggested operation. Parents postponed the operation because they had various social problems.
2	2-month old boy with congenital dysplasia of both hip joints whose condition had been made much worse because of persistent swaddling by the parents.
3	1-year old girl brought to hospital with dislocated arm following parental «handling».
3	6-month old boy with diagnosed osteopsathyrosis. Although parents had been instructed to be cautious with him, the father tried to put the child in the upright position. The legs gave in, the child fell down and sustained a (possible) minor fracture.