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ABSTRACT

This study examined the underlying common origins of pediatric social illnesses (i.e., child abuse and neglect, failure to thrive, accidents, and poisonings) in children under age 4. Subjects were 560 children admitted to the Children's Hospital Medical Center in Boston. Children admitted with pediatric social diagnoses were matched on the basis of age, race, and socioeconomic status with control children who were without pediatric social diagnoses. Subjects' mothers were interviewed at the hospital about their housing, marital, financial, health, employment, child care, and familial problems and about specific experiences of the mother and her child. Results indicated that accidents were characterized by high levels of stress due to recent mobility and change in household composition. Cases of failure to thrive and child abuse shared high levels of maternal historical stress (i.e., frequent family mobility, a broken home, and a history of violence or neglect) and a lack of social support. As a group, families of children at risk for pediatric social illness appeared to have less than regular health care, had experienced many recent moves, had many child rearing problems, a history of a broken family in the mother's childhood, and mother-initiated separations from the child. (BRT)

TOWARD AN ETIOLOGIC CLASSIFICATION OF PEDIATRIC SOCIAL ILLNESS: A DESCRIPTIVE EPIDEMIOLOGY OF CHILD ABUSE AND NEGLECT, FAILURE TO THRIVE, ACCIDENTS AND POISONINGS IN CHILDREN UNDER FOUR YEARS OF AGE

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The "social illnesses" of pediatrics include child abuse and neglect, faulure to thrive, accidents, and poisonings. Taken together, they account for a major share of the mortality of preschool children and often have significant physical and psychological sequelae. They are classified partyl according to their manifested symptoms and partly on supposed causal factors. But there is little underlying logic to this taxonomy, as can be seen in Slide 1.

Moreover, there is little reliable observational information to support the notions of cause and effect built into these diagnoses. For example, a child with scattered bruises on his body might be identified either as a case of child abuse or as an accident. In the former case, there is presumption, but rather rarely in practice, knowledge of parental fault. Intervention, when it is made available, is often individual-directed counseling of the parents while deliberations proceed on whether or not to place the child in foster care. The criterion of successful management is protection from his parents, the proximal cause of the child's disease, with little necessary regard to the social, familial, environmental, or child developmental determinants of the child's injury. What the intervention accomplishes, or what might be the harmful impact of foster care, is often ignored. By contrast if the child is classified as an accident there will be no implications of familial cause and no treatment. This becomes an issue with serious ramifications for clinical practice and social policy given that previous work has underlined the preferential suscentibility of poor and minority children to receive the diagnoses of child abuse and neglect, while children of middle-and-upper class families are more often identified as victims of accidents.

* Slide Off

Several small clinical studies have suggested common relationships among the various categories of social pediatric illnesses (for example, prior accidents in child abuse cases). The goal of the present study is to explore possible underlying common origins among these illnesses, with a view to defining a more etiologic (as opposed to manifestational) taxonomy.

METHODS:

It was posited that this common set of circumstances included elements of historical and contemporaneous stress. Historical stresses were defined as stresses occuring in the life of the maternal caregiver up to the time of the conception of the index child. Contemporaneous stresses refer to environmental, social, familial, and health problems occurring since the conception of the child as well as the stress imposed by unique attributes of the child.

* Slide Two: Number of Interviews in Each Patient Group

All children under four years of age admitted to the Children's Hospital Medical Center in Boston with diagnoses of pediatric social illness were eligible for selection into the study as "cases". Children not bearing pediatric social diagnoses were eligible for selection into the control group; children suffering from chronic or terminal illnesses, however, were excluded from the control population.

Cases were matched with controls on the basis of age, race and a rough index of SES (whether or not the Welfare Department paid the medical bill.)

Because interviews in the Emergency Room could not be performed after the visit with the physician, "cases" and "controls" in that area were ascertained on the basis of their presenting symptom, not on the basis of a medical diagnostic formulation. Five hundred sixty children were seen in this study.

To assure comparability with previous research, child abuse was defined in terms of inflicted injury and a clinical impression of great risk by professionals experienced with protective problems. Child neglect is a rare clinical diagnosis at Children's Hospital; the single case in the present study is included for analytic purposes with the cases of child abuse.

The principal instrument for the study was a structured interview of the subject's mother, conducted at the Hospital, and tape-recorded to provide a check on coding. The interview focussed on housing, marital, financial, health, employment, child care, and familial problems, as well as on specific life experiences of the mother and her child. Interviews lasted about forty-five minutes and were conducted by specially trained interviewers. Because of the emphasis on environmental stress during the interview, there was an ethical obligation to offer assistance to ameliorate the identified problems. To this end an advocacy program was developed which was available to all participants.

RESULTS:

This study population reflects the differences in demographic composition of the Hospital's inpatient and emergency room services.

* Slide Three: Characteristics of Case and Control Groups

The inpatient study population comes from the greater Boston area and tends to be younger, predominantly white and more middle class, whereas the emergency room sample more nearly represents the predominantly black and lower class community directly around the Hospital. There were slightly more male children in all groups. The matching of cases and controls on social class, race, and age was satisfactory.

* Slide Four: Characteristics of Specific Case Groups

As this table illustrates, however, there were marked demographic differences between the case categories. In the present sample, the cases of failure to thrive and of child abuse tended to be younger and male, the failure to thrive cases more frequently white, and the child abuse cases generally poorer.

*Slide Five: Weight at Admission for Inpatient Groups (Bar Graph)

Implicit in the definition of failure to thrive is the small size of the child. It is striking to note that children bearing the child abuse diagnosis in the study sample were also disproportionately small.

Inpatient control subjects had acute medical conditions requiring hospitalization, accounting in part for their low weights.

Children identified as having had "accidental" traumatic injuries tended to be significantly more robust than those in the other study categories.

* Slide Six: A Priori Stress-Strength Scale Means for Inpatients

The results of the maternal interviews were organized into a series of a priori scales developed to integrate and express data bearing on the central hypotheses of the study. Stress in the mother's childhood included frequent family mobility, a broken home, and volunteered information about history of violence or neglect. The scale "stress in the current household" was based upon recent mobility and change in household composition. The scale "lack of social support" or social isolation included the absence of a telephone and a mother's perception of her neighborhood as unfriendly.

As this tableshows accidents were characterized uniquely by a high level of contemporaneous stress. Cases of failure to thrive and of child abuse shared high levels of maternal historical stress and lack of social

support. Subjects bearing the diagnosis of child abuse had higher scores in all three stress categories.

Slide Off

*Slide Seven - Discriminant Function Variables for Inpatient Groups

Subsequent discriminant function regression analyses were conducted to determine which specific interview variables were predictive of a given category in the conventional taxonomy. The results are similar to the stress-strength scales.

Slide Seven shows those items, in order of importance, which were significantly predictive of a given inpatient classification. Looking at the significant descriptors of the control group, and consequently at that which distinguishes between controls and all cases of pediatric social illnesses a picture emerges of the families of children at risk for pediatric social illness.

As a group these families have less regular health care, have had many recent moves, have many child rearing problems, a history of a broken family in mother's childhood, and have experienced mother-initiated separations from the child.

Looking at the predictors for specific categories reveals a less clear-cut picture. For example, those attributes which are highly predictive of child abuse include early and continuing family instability, expressed in mobility, isolation, and earlier separations of the child from its mother.

DISCUSSION: Implications for Clinical Practice and Child Abuse Screening

The present data taken as a whole do not clearly indicate a common origin for pediatric social illness subcategories. Although the data suggest certain shared attributes, such as historical stress, contemporary social isolation, and small child size, for abuse and failure to thrive

children, clear patterns do not emerge. Further work is necessary in order to explore the meaning of these predictive factors and to create a less misleading classification system.

*Slide Eight - Discriminant Function for Inpatient Abuse (Graph)

The matter of misclassification is particularly important when one considers current interest in screening for risk of child abuse. Using those items for this study which are most highly discriminating for child abuse, it is possible to construct a discriminant function which would allow one to see the extent to which subjects in other pediatric social illness categories and the control group might be identified or misidentified as being at risk for child abuse at different levels of a discriminant scale.

This figure expresses the discriminant function scores for all cases and controls as a cumulative percent distribution. It is clear that a few characteristics distinguished the child abuse cases from those in the other diagnostic categories. The impressive difference in the distribution between child abuse and other cases notwithstanding, it must be noted that were one to develop a "quick and dirty" screening instrument on the basis of these features, one would screen in correctly only 75% of actual child abuse cases at the level in which 25% of the other categories would also be screened in.

It is well to point out that in the face of rapidly rising numbers of child abuse case reports, protective service institutions across the United States, which even in better economic times were poorly funded and staffed, have had increasingly to resort to rapid clinical screening methods and radical management alternatives to protect victims of child abuse. Especially because of the known ascertainment bias favoring minority and poor children for the child abuse diagnosis, a phenomenon

partly attributable to the public clinical settings in which most of these diagnoses are made and partly to the reluctance of physicians in private practice to make damning value judgements about the parents of their patients, caution is urged in interpreting these findings to support the value of predictive screening for child abuse. The social policy implications for poor and minority families particulary would be ominous.

*Slide Off

Further study, focussing more specifically and directly on the major discriminating characteristics, shall be necessary to disentangle the seemingly causal strands associated with the symptoms of pediatric social illness. Before more is known about the processes of pathogenesis, the extent and nature of what we already know about misclassification should incline us away from child abuse screening.

In the search for a more etiologic taxonomy of pediatric social illness, we shall have to be vigilant neither to blame the victim nor to fulfil the prophecy of risk.

Slide 1

CONCEPTUAL MODELS IMPLICIT IN PEDIATRIC SOCIAL DIAGNOSES

Diagnosis	Conceptual Model
Child Abuse and Neglect	Intentionally motivated parent or caretaker assaults a defenseless child or witholds care from him.
Accidents	Isolated, random traumatic events.
Failure to Thrive	Idiopathic failure of a baby to gain weight

Slide #2

CHMC STUDY OF PEDIATRIC SOCIAL ILLNESS

NUMBER OF INTERVIEWS IN EACH PATIENT GROUP

INPATIENT TOTAL=303	CASES TOTAL = 165	ACCIDENTS 73	INGESTIONS 34	FAILURE TO THRIVE 42	ABUSE 16
	CONTROLS 138				

EMERGENCY ROOM TOTAL=257	CASES TOTAL = 138	ACCIDENTS 112	INGESTIONS 26
	CONTROLS 119		

CHMC STUDY OF PEDIATRIC SOCIAL ILLNESS

CHARACTERISTICS OF CASE AND CONTROL GROUPS

	MATCHING VARIABLE			
	AGE % ≤18 mo.	RACE % white	MEDICAL PAYMENT % public assisted	SEX % male
INPATIENT				
CASE	53.9	66.7	38.2	57.6
CONTROL	62.3	73.2	31.2	58.0
EMER. RM.				
CASE	33.3	53.6	57.2	55.1
CONTROL	48.7	45.4	54.6	53.8

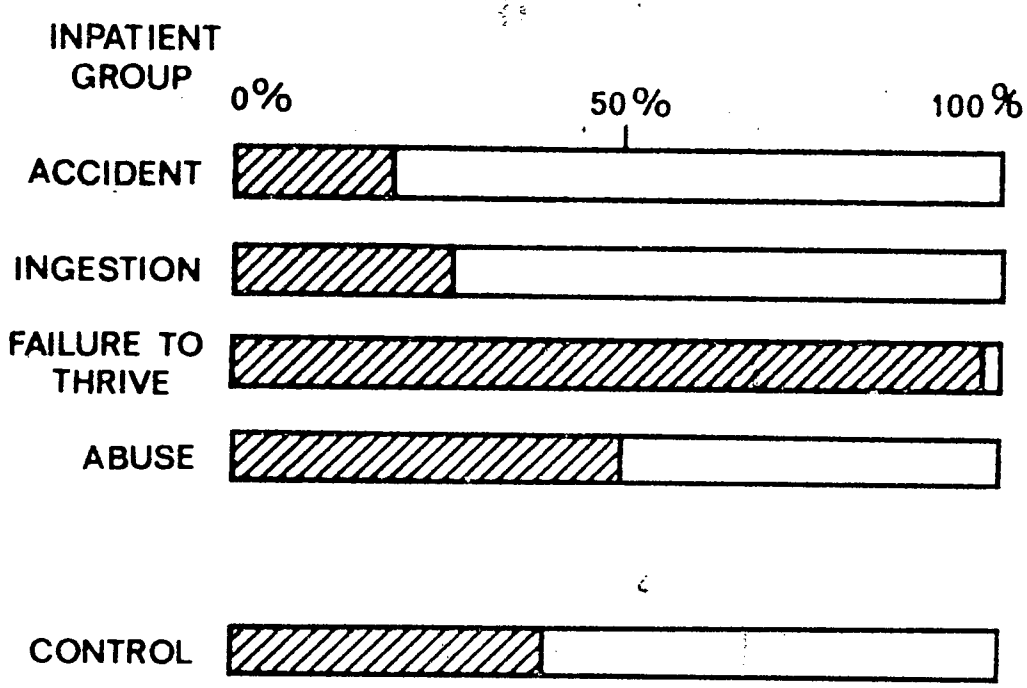
CHMC STUDY OF PEDIATRIC SOCIAL ILLNESS

CHARACTERISTICS OF SPECIFIC CASE GROUPS

	AGE % ≤ 18 mo.	RACE % white	MEDICAL PAYMENT % public assisted	SEX % male
INPATIENT				
ACCIDENT	46.6	68.5	26.0	54.8
INGESTION	29.4	44.1	52.9	44.1
FAILURE TO THRIVE	81.0	83.3	33.3	69.0
ABUSE	68.8	62.5	75.0	68.8
EMER. RM.				
ACCIDENT	32.1	50.0	59.8	53.6
INGESTION	38.5	69.2	46.2	61.5

CHMC STUDY OF PEDIATRIC SOCIAL ILLNESS

PROPORTION UNDER 10th PERCENTILE FOR WEIGHT



CHMC STUDY OF PEDIATRIC SOCIAL ILLNESS

A PRIORI STRESS-STRENGTH SCALES MEANS FOR INPATIENT GROUPS

(standardized to mean and std. dev. of controls)

	STRESS IN MOTHER'S CHILDHOOD	STRESS IN CURRENT HOUSEHOLD	LACK OF SOCIAL SUPPORT
INPATIENT			
ACCIDENT	.04	.59*	.19
INGESTION	.46*	.34	.15
FAILURE TO THRIVE	.47*	.27	.52*
ABUSE	1.15*	1.58*	.83*

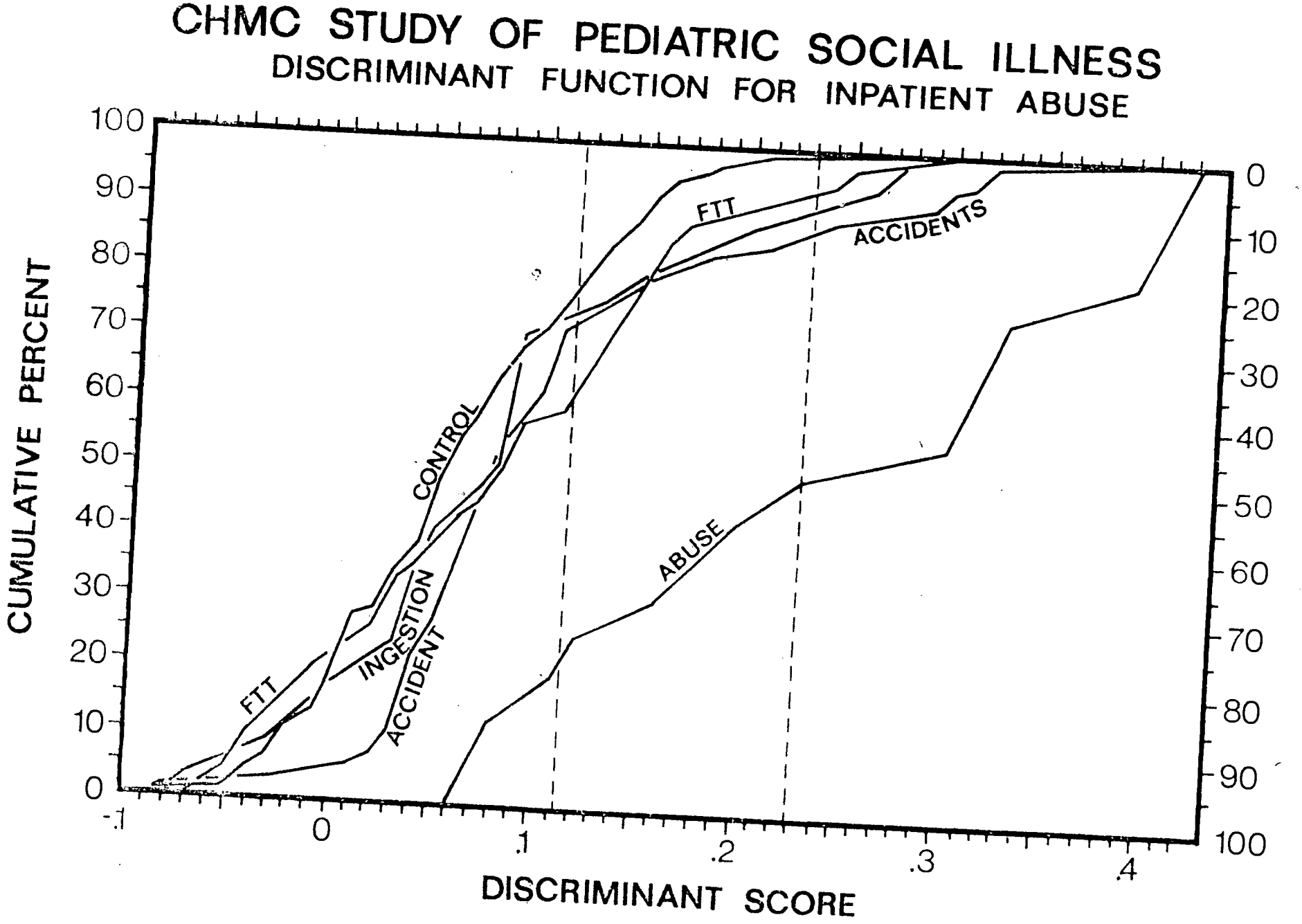
* P < .01 by one-tailed *t* test

CHMC STUDY OF PEDIATRIC SOCIAL ILLNESS

DISCRIMINANT FUNCTION VARIABLES FOR INPATIENT GROUPS

ACCIDENT	INGESTION	FAILURE TO THRIVE	ABUSE	CONTROL
Good Health of Child	Childbearing Problems	Poor Health of Child	Recent Moves	Regular Health Care
Low Household Density	Mo-Ch Seperations	Younger Child	No Phone	Few Recent Moves
Family Doctor	Older Child	Male Child	Mo-Ch Separations	Few Child-rearing Problems
Not Welfare Dependent	Regular Health Care	Mo Less Educ. than Fa	Mo's Childhood Troubles	No Broken Fam in Mo's Childhood
Older Child	Female Child	Neighborhood Unfriendly	Few Children	Child Initiated Separations
Babysitting Help		Family Doctor	Fa Older	Nobody to Care for Ch When Mo Goes Out
Recent Moves			Low Fa Job Status	

Slide #8


CHMC STUDY OF PEDIATRIC SOCIAL ILLNESS
DISCRIMINANT FUNCTION FOR INPATIENT ABUSE
CUMULATIVE PERCENT
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
-.1
0
.1
.2
.3
.4
DISCRIMINANT SCORE
FTT
ACCIDENTS
CONTROL
ABUSE
INGESTION
ACCIDENT
FTT