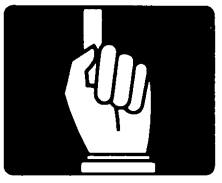
Special Article



Insulin-Dependent Diabetes Mellitus and Child Abuse: Is There a Relationship?

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Many of the family psychosocial variables significantly related to child abuse are also significantly related to insulin-dependent diabetes mellitus (IDDM) control. These variables are reviewed, and an increased child abuse risk factor for children with IDDM is discussed. Behavioral indicators of families experiencing difficulty in coping with IDDM are provided. These indicators are associated with both diabetes control and child abuse and should be recognized by diabetes health-care professionals. DIABETES CARE 1986; 9:302–307.

This review emphasizes the contribution of family psychosocial variables to control of insulin-dependent diabetes mellitus (IDDM) in children. Although the role of psychosocial variables has been previously described,[1,2] the potential impact of these variables may not yet be widely recognized.[3] It is hypothesized that many of the family psychosocial variables related to poor control of IDDM may also contribute to undetected abuse of the child with IDDM.

Literature reporting relationships between psychosocial variables and IDDM and child abuse is summarized. Although there are virtually no empirical investigations or even discussions of a relationship between child abuse and IDDM, many of the psychosocial variables significantly related to child abuse are also significantly related to IDDM control (Table 1). Despite limitations in the available data pool, it has been suggested that children with chronic illness are at greater risk of being abused than are healthy children. Furthermore, the child with IDDM may be at even greater risk of sustaining abuse than are children with other forms of chronic illness.

HEALTH PROBLEMS AND CHILD ABUSE INCIDENCE RATE

Current conceptualizations of child abuse emphasize the number of stressful life events experienced by the family as an important variable related to abuse. Abusing families reportedly experience more stressful events than do nonabusing families.[4,5] Chronic illness in the child has been cited as one such stressor that may contribute to the "risk factor" for abuse.[6,7] The American Association for Protecting Children, a division of the American Humane Association (AHA), annually compiles data included in officially reported cases of child abuse. The incidence rate of citing child disabilities and health problems as a stress source contributing to abuse substantiates the significance of the child illness variable.

Chronic illness affects between 5 and 10% of all children in the United States.[8,9] Higher abuse incidence rates are reported in children with chronic illnesses or disabilities. Gil's[10] 1968 nationwide survey reveals that 14% of the abuse cases involved children with physical disabilities. Soeffing (1975)[11] reviewed statistics from the National Clearinghouse on Child Abuse and Neglect and reports that 14.88% of the confirmed abuse cases involved children with a chronic illness such as diabetes or multiple sclerosis. Nineteen percent of the child abuse cases reported in 1982 and 17% of the 1983 cases cited one of four possible AHA categories of child disability or health problems as an abuse factor.[6,7] These reported percentages most likely underestimate the actual rate of abuse of children with health problems. A recent survey by Camblin[12] indicates that nearly half the states collect no information on "special characteristics" of the abused child. Such stress factors have not been well documented by states reporting to the AHA.

IDDM AND CHILD ABUSE INCIDENCE RATE

Although child disabilities and health problems apparently increase the risk of child abuse, there are no reliable national incidence rate data specifically documenting the number of abuse cases involving children with IDDM. The presence of IDDM could be reported in any one of four AHA categories:

TABLE 1
Research reporting relationships between family psychosocial variables, child abuse, and IDDM control

Family psychosocial variable	Child abuse literature (ref. no.)	IDDM literature (ref. no.)
Family organization	Elmer, 1967 (29) Reid et al., 1981 (27) Young, 1964 (28)	Anderson and Auslander, 1980 (35) Carney et al., 1983 (32) Lowe and Lutzker, 1979 (34)
Cohesion among family members	Perry et al., 1983 (23)	Cederblad et al., 1982 (37)
Marital discord	Ellis and Milner, 1981 (19)	Anderson and Auslander, 1980 (35) Barkley, 1981 (30) Schafer et al., 1982 (31)
Number of positive child contacts	Burgess and Conger, 1978 (17) Garbarino, 1976 (4)	Anderson and Auslander, 1980 (35) Kurtz and Delamater, 1984 (36)
Degree of stress (objective and/or subjective)	Conger et al., 1979 (5) Garbarino, 1976 (4) Morse et al., 1970 (22) Perry et al., 1983 (23)	Anderson and Auslander, 1980 (35) Lustman et al., 1981 (39) Newbrough et al., 1985 (2)
Parental ability to cope with stress	Ellis and Milner, 1981 (19) Morse et al., 1970 (22) Perry et al., 1983 (23)	Cederblad et al., 1982 (37) Delamater et al., 1984 (42)
Parental feelings of adequacy	Ellis and Milner, 1981 (19) Morse et al., 1970 (22)	Newbrough et al., 1985 (2)
Flexibility and appropriateness of parental expectations for child behavior	Ellis and Milner, 1981 (19) Nash et al., 1983 (24)	Kovacs and Feinberg, 1982 (14) Newbrough et al., 1985 (2)
Tolerance for child deviations from parental control	Ellis and Milner, 1981 (19) Nash et al., 1983 (24)	Kovacs and Feinberg, 1982 (14)
Adequacy of disciplinary procedures	Ellis and Milner, 1981 (19) Elmer, 1967 (29) Young, 1964 (28)	Carney et al., 1983 (32) Haynes, 1976 (33) Johnson, 1982 (15) Lowe and Lutzker, 1979 (34)

1) child disability, *2*) health problem, *3*) unspecified or mixed health problem, and *4*) other health problems. The latter two categories also apply to health problems in family members other than the abused child.[6,7] Data gathering by child protection agencies varies widely across states. In one state, IDDM might fall into the child disability category, whereas in another state it might be reported as an unspecified health problem. The percentage of children with IDDM included in previously discussed chronic illness and disability figures is not known.

It could be argued that IDDM differs from many other chronic illnesses that may be physically apparent or significantly reduce life expectancy (e.g., myelomeningocele). However, although diabetes may be a "hidden" disease that affords the child a reasonable life expectancy, the impact of diabetes should not be underestimated. Garner and Thompson[13] have stated that among the major chronic medical disorders of childhood, few affect the young patients, their families, and their social network as profoundly as IDDM. The course and treatment of this illness upsets the homeostasis of all involved because parents and children often must make major alterations in their previous life-styles and take an active, responsible role in day-to-day illness management.[14] Due to the rigorous daily diabetes regimen of diet, exercise, medication, and self-monitoring of blood glucose, high-performance demands are placed on both the child and parents. The treatment regimen often becomes the focus of family conflicts, a testing ground for child independence, and a major source of stress for family members.[1,15] This stress could contribute to parental behaviors included in one of three broad categories of child abuse, i.e., physical abuse, physical neglect, and psychological neglect and abuse.

The battered child syndrome is the result of the first type of abuse and involves overt acts of physical aggression directed at the child victim. Physical neglect of the child is a form of abuse referring to a failure to provide adequate food, shelter, and medical care. For children with IDDM, physical neglect might be restricted to failure to manage the disease in accordance with medical recommendations. However, the role of medical care in the definition of neglect is extremely controversial; the courts have generally found that caretakers are obligated to provide little more than life-saving medication. Withholding of medical treatment due to religious beliefs further clouds the issue of neglect.

The final category involves abuse through psychological factors. In the case of a family experiencing childhood IDDM, psychological neglect could be exhibited by extreme cognitive distancing from the child,[14] i.e., parental acceptance but detachment from the child's diabetes, or rejection and lack of emotional involvement with the child.[16] Overt psychological

abuse represents the opposite pole and involves what Kovacs and Feinberg[14] have described as a "sustained negative affect" by the parent toward the child. Parental behaviors in this realm include continual criticism of the child's IDDM management, attempts to arouse child guilt for poor diabetes control, and failure to recognize improvements in the child's disease management. Psychological neglect and abuse constitute only 10% of all reported abuse cases; data concerning the number of emotional maltreatment cases involving children with IDDM are not available.[6]

PSYCHOSOCIAL VARIABLES RELATED TO CHILD ABUSE

Current child abuse research is examining the complex interactions among the child's characteristics, parent characteristics, and economic and environmental variables to predict what types of families might become abusive.[17,18] Although empirical investigations of these complex interactional relationships are in their infancy, the main effects for many of these variables have been noted. Ellis and Milner[19] delineated cognitions and characteristics of the abusing parent, including inappropriate expectations and anxiety regarding child behavior, low tolerance of child deviations from parental control, inadequate child discipline procedures, feelings of inadequacy, inflexible attitudes, unresponsiveness to changes in child behavior, and an inability to cope with stress.

Perception of stress has recently emerged as another influential parent factor. Although the number of stressful life events seems to be related to child abuse,[4,5] parents vary greatly in their perceptions of such events. Those parents who exacerbate the negative aspects of an event will perceive that event as more stressful than parents who adopt a more balanced view. For example, although almost all parents react to the initial diagnosis of IDDM with emotional upheaval such as tension and shock,[20,21] subsequent parental perceptions of IDDM can vary widely. Some parents engage in "catastrophizing" the diagnosis and view the disease as severely disabling, whereas others "decatastrophize" or minimize the impact of IDDM.[14] Catastrophizing of IDDM increases the amount of IDDM-related stress; parental perceptions of IDDM as extremely stressful could therefore increase the probability of child abuse. Child abuse research lends support to this hypothesis.

In a study of parental cognitions related to abusive behavior, Morse et al.[22] found that parents who abuse are prone to catastrophizing. The abused child was described by those parents as sickly, bad, or a problem child. Mothers reported feeling unable to control their children and experiencing helplessness when confronted with the care of the chronically ill child. Abusing parents also appear to react to their heightened subjective perceptions of an event as stressful rather than to some objective or absolute level of stress inherent in the event itself. For example, Perry and co-workers[23] found that stressful life events had a greater impact on the abuse perpetrators than they did on the nonabusing spouse or on control clients.

Furthermore, the abusing parent reacts to stress in a manner different from the nonabusing parent. In a demanding, stressful laboratory situation, mothers referred from a child abuse program were found to be much more directive and controlling of their children and to report higher levels of parenting stress than nonabusing mothers.[24] The abusing mothers' control was excessive and occurred even though their children's behavior was similar to the behavior of nonabused children and was judged to be compliant and appropriate by independent observers. When the situational stress was reduced, no differences between abusing and nonabusing mothers were detected. The parenting of the abusing mothers became negative only under stressful situations.

Characteristic patterns in the family unit are also related to abuse. Burgess and Conger[17] noted that abusing mothers have fewer positive contacts with the abused child than do control mothers with their nonabused children. Recent research reveals significantly different patterns of physical behaviors and emotional affect in the interactions of abusing and control mothers with their children. Twenty percent of all physical behaviors directed toward children were aversive for abusive mothers, compared with <4% for control subjects. Control mothers demonstrated a positive affect in 35–54% of all observations of emotional affect, whereas abusing mothers' affect was positive in only 20% of the affect observations.[25] Perry and associates[23] found that abusing families experience less cohesion (i.e., commitment, help, and support for other family members), as measured by the Family Environment Scale,[26] than do nonabusing families. Problems between parents are common.[19]

Family organization seems to be related to child abuse. Families in which abuse occurs have been characterized as highly disorganized and unstructured, with parents who lack basic skills in handling day-to-day discipline confrontations.[27] Young[28] reported that 100% of severely abusive families were characterized by inconsistent and ineffective parental discipline. Elmer[29] found that parents in abusive families used myriad disciplinary measures in an inconsistent fashion.

Although the relationship between child abuse and family psychosocial variables requires further investigation, tentative conclusions can be drawn. Higher stress levels, subjective parental emphasis on the degree of stress involved in an event, inconsistent discipline, fewer positive, supportive family interactions, and more aversively controlling parent-child interactions all seem to increase the child abuse probability.

PSYCHOSOCIAL VARIABLES RELATED TO IDDM CONTROL

In families experiencing childhood IDDM, the same parental and family patterns related to child abuse have been demonstrated to be related to the child's metabolic control. For example, marital discord acts as a serious deterrent to effective diabetes management.[30,31] Inadequate, inconsistent disciplinary procedures are related to disease management.[32–34] Johnson[15] reported the important role played by parents in disciplining and motivating their children in diabetes man-

agement. If the parent lacks effective motivational and discipline skills, diabetes management may become an additional source of parent-child confrontation.

Families with children in good diabetes control are typified by low-stress, high-stability environments; good cooperation between parents; few parent-child conflicts; and mothers who control their anxiety despite strong feelings about the child's diabetes management.[35] Kurtz and Delamater[36] reported that high levels of supportive parent regimen-related comments and behaviors and low levels of anger intensity in regimen-specific discussion are related to blood glucose adherence in adolescents with IDDM. Cederblad et al.[37] found that the families of children in good metabolic control reported higher cohesion and less conflict than families whose children were in poor control. Family factors such as supportiveness, competence, and effectiveness with newly diagnosed children predicted the metabolic control levels obtained 1 yr after diagnosis.[38]

The relationship beween these family patterns and diabetes control seems to be at least partially due to emotional stress. A recent review of stress literature concludes that stress leads to hyperglycemia.[39] Stress caused by family problems could have direct adverse control effects through physiologic arousal and/or indirect influences through regimen-compliance problems rooted in family stress. Despite a scarcity in controlled studies investigating stress, clinical case studies suggest that the stress caused by dysfunctional family processes may impact negatively on metabolic control, with metabolic improvement noted after family therapy.[2,40]

In their review, Newbrough and co-workers[2] succinctly summarized the relationship of psychosical variables to IDDM control. Good metabolic control is reportedly related to greater family competence and effectiveness; family stability; family cohesion while maintaining distinct boundaries among family members and encouraging the child's independence; family supportiveness in diabetes management and acceptance of the diabetic child as normal; parental communication and marital satisfaction; parent and child self-esteem; and less family conflict and difficulty in coping with problematic, non-diabetes-related behavior. Poor glycemic control tends to be associated with family economic problems and general chaos and conflict; marital problems; parental guilt and self-focused anxiety; and overprotective, rigidly controlling families, as well as neglectful families.

IDDM AND CHILD ABUSE

IDDM is a pervasive significant stressor. Initial diagnosis, regimen compliance, difficulty in metabolically controlling IDDM, and significant changes in management procedures or in responsibility for management are objectively stressful events. Some parents react with elevated perceptions of the degree of diabetes-related stress. Catastrophizing IDDM could contribute to negative, controlling parenting with fewer incidents of positive, supportive behavior. Subjectively high-stress perceptions are also associated with child abuse and place further stress on the family unit.

Such family behavior patterns are harmful for the child with diabetes due to their association with poorer regimen adherence and glycemic control.[34–37] Poor diabetes management could increase the stress levels and maladaptive family interactions in a cyclical manner. As stress increases and family patterns grow increasingly maladaptive, the probability of deterioration in glycemic control and/or child abuse may increase.

CONCLUSIONS

A large body of literature suggests that the stress of chronic illness is significant. Approximately one-third of the families of chronically ill children seem to cope well; another one-third exhibit adequate coping. The remainder experience great difficulty in coping with many childhood chronic illnesses.[41] IDDM is characterized by a genetic component, a demanding management routine, and an increasing probability of physical complications with disease duration. These factors could exaggerate parental guilt or anxiety and have a greater negative impact on the family coping processes than many other chronic illnesses in children.[42]

Although many of the studies lack rigorous methodology, a review by Kovac and Feinberg[14] suggested that many parents experience significant problems in coping with IDDM in their children. Coping with IDDM is necessary to maintain the family stability associated with better diabetes management and control. For example, Delamater and associates[43] reported pilot results suggesting that increased coping behavior by mothers was significantly associated with better metabolic control in their children.

Parents who seek coping assistance cite resources such as immediate or extended family and friends, diabetes support groups, and American Diabetes Association activities. Consultations with health-care personnel that go beyond the traditional review of diabetes records and physical examinations are invaluable. Professional psychological consultation or therapy may also be sought if stress levels are significantly disrupting the daily lives of family members.

In attempts to minimize the disruptive effects of diabetes and encourage constructive attitudes in individuals with diabetes, professionals involved in diabetes care and education may underestimate the degree of stress caused by IDDM. Although physical stress is widely recognized, psychological stress may often be underestimated or ignored. Yet psychological stress has a debilitative effect on IDDM control and may contribute to family dysfunction and child abuse. Medical practitioners and other professionals involved in diabetes education and care should encourage families to recognize the psychological stress associated with IDDM and seek support through one or more coping resources listed previously. Diabetes-care professionals should also be alert for symptoms of ineffective coping, which could lead to poor diabetes management and/or child abuse. The following are suggested symptoms only; their precise relationship to diabetes control and child abuse has not been empirically studied: *1*) marital

discord, 2) parental inability to make positive comments about the child, 3) parental denigration of or failure to recognize improvements in child behavior, 4) persistent parental statements of hopelessness and inability to deal effectively with the child's IDDM, 5) exaggerated parental perceptions of IDDM stress, 6) excessive parental expectations of child diabetes management and low tolerance of deviations from the regimen, 7) inconsistent disciplinary procedures for child behavior.

Although most health-care professionals would not expect to discover parental abuse of a child patient, cognizance of the stresses created within the family by IDDM and its therapeutic regimen is critical. Poor IDDM control may not respond to manipulations of insulin, diet, or exercise because poor control may be closely tied to family problems. These problems must be treated to improve metabolic control and perhaps to prevent child abuse. Solomon[44] cogently argued for an increased awareness of abuse in the chronically ill child population: "In over seven years of general pediatric practice, I never saw a case of abuse; I simply was not looking for it."

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REFERENCES

[1] Johnson, S. B.: Psychosocial factors in juvenile diabetes: a review. J. Behav. Med. 1980; 3:95–116.

[2] Newbrough, J. R., Simpkins, C. G., and Maurer, H.: A family development approach to studying factors in the management and control of childhood diabetes. Diabetes Care 1985; 8:83–92.

[3] Tattersall, R. B., McCulloch, D. K., and Aneline, M.: Group therapy in the treatment of diabetes. Diabetes Care 1985; 8:180–88.

[4] Garbarino, J.: A preliminary study of some ecological correlates of child abuse: the impact of socioeconomic stress on mothers. Child Dev. 1976; 47:178–85.

[5] Conger, R. D., Burgess, R. L., and Barrett, C.: Child abuse related to life changes and perceptions of illness: some preliminary findings. Family Coordinator 1979; 28:73–78.

[6] American Humane Association: National analyses of 1982 official child neglect and abuse reporting. Denver, CO, 1984.

[7] American Association for Protecting Children, Division of the American Humane Association: National study on 1983 child neglect and abuse reporting. Denver, CO, 1985.

[8] Gortmaker, S. L., and Sappenfield, W.: Chronic childhood disorders: prevalence and impact. Pediatr. Clin. N. Am. 1984; 31:3–18.

[9] Haggarty, R. J.: Forward: chronic disease in children. Pediatr. Clin. N. Am. 1984; 31:1–2.

[10] Gil, D. G.: Incidence of child abuse and demographic characteristics of persons involved. *In* The Battered Child. Helfer, R. E., and Kempe, C. H., Eds. Chicago, IL, Univ. of Chicago Press, 1968:19–40.

[11] Soeffing, M.: Abused children are exceptional children. Exceptional Children 1975; 19:327–30.

[12] Camblin, L. D., Jr.: A survey of state efforts in gathering information on child abuse and neglect in handicapped population. Child Abuse Neglect 1982; 6:465–72.

[13] Garner, A., and Thompson, C.: Juvenile diabetes. *In* Psychological Management of Pediatric Patients, Vol. 1. Magrab, P. R., Ed. Baltimore, MD, University Park, 1978:221–58.

[14] Kovacs, M., and Feinberg, T. L.: Coping with juvenile onset diabetes mellitus. *In* Handbook of Psychology and Health: Issues in Child Health and Adolescent Health, Vol. 2. Baum, A., and Singer, J. L., Eds. Hillsdale, NJ, Erlbaum, 1982:165–212.

[15] Johnson, S. B.: Behavioral management of childhood diabetes. *In* New Directions for Mental Health Services: Treatment for Psychosomatic Problems. Kuldau, J., Ed. San Francisco, CA, Jossey-Bass, 1982:5–18.

[16] Koski, M., Ahlas, A., and Kumento, A.: A psychosomatic follow-up study of childhood diabetics. Acta Paedopsychiatr. 1976; 42:12–26.

[17] Burgess, R. L., and Conger, R. D.: Family interaction in abusive, neglectful, and normal families. Child Dev. 1978; 49:1163–73.

[18] Friedrich, W. N., and Boriskin, B. A.: The role of the child in abuse: a review of the literature. Am. J. Orthopsychiatry 1976; 46:580–90.

[19] Ellis, R. H., and Milner, J. S.: Child abuse and locus of control. Psychol. Rep. 1981; 48:507–10.

[20] Fallstrom, K.: On the personality structure in diabetic schoolchildren. Acta Paediatr. Scand. Suppl. 1974; 251:1–60.

[21] Isenberg, P. L., and Barnett, D. M.: Psychological problems in diabetes mellitus. Med. Clin. N. Am. 1965; 49:1125–36.

[22] Morse, C. W., Sabler, O. J. Z., and Friedman, S. B.: A three-year follow-up study of abused and neglected children. Am. J. Dis. Child. 1970; 120:439–46.

[23] Perry, M. A., Wells, E. A., and Doran, L. D.: Parent characteristics in abusing and nonabusing families. J. Clin. Child Psychol. 1983; 12:329–36.

[24] Nash, E. G., Johnston, C., and Kovitz, K.: A comparison of the mother-child interactions of physically abused and non-abused children during play and task situations. J. Clin. Child Psychol. 1983; 12:337–46.

[25] Lahey, B. B., Conger, R. D., Atkeson, B. M., and Treiber, F. A.: Parenting behavior and emotional status of physically abusive mothers. J. Consult. Clin. Psychol. 1984; 52:1062–71.

[26] Moos, R. H.: Family Environment Scale. Palo Alto, CA, Consulting Psychologists, 1974.

[27] Reid, J. B., Taplin, P. S., and Loeber, R.: A social interactional approach to the treatment of abusive families. *In* Violent Behavior: Social Learning Approaches to Prediction, Management and Treatment. Stuart, R., Ed. New York, Brunner & Mazel, 1981:83–101.

[28] Young, L.: A Study of Child Neglect and Abuse. Princeton, NJ, McGraw-Hill, 1964.

[29] Elmer, E.: Children in Jeopardy: A Study of Abused Minors and Their Families. Pittsburgh, PA, Univ. of Pittsburgh Press, 1967.

[30] Barkley, R. A.: Hyperactive Children. New York, Guilford, 1981.

[31] Schafer, L. C., Glasgow, R. E., and McCaul, K. D.: Increasing the adherence of diabetic adolescents. J. Behav. Med. 1982; 5:353–62.

[32] Carney, R. M., Schechter, K., and Davis, T.: Improving adherence to blood glucose testing in insulin-dependent diabetic children. Behav. Ther. 1983; 14:247–54.

[33] Haynes, R. B.: Determinants of compliance: the disease and mechanics of treatment. *In* Compliance in Health Care. Haynes, R. B., Taylor, D. W., and Sackett, D. L., Eds. Baltimore, MD, The Johns Hopkins Univ. Press, 1976:49–62.

[34] Lowe, K., and Lutzker, J. R.: Increasing compliance to a medical regimen with a juvenile diabetic. Behav. Ther. 1979; 10:57–64.

[35] Anderson, B., and Auslander, W.: Research on diabetes management and the family: a critique. Diabetes Care 1980; 3:696–702.

[36] Kurtz, S. M. S., and Delamater, A. M.: Family interactions, adherence, and metabolic control in IDDM. *In* Annu. Meet. American Diabetes Association, Las Vegas, Nevada, 44th, 1984.

[37] Cederblad, M., Helgesson, M., Larsson, Y., and Ludvigsson, J.: Family structure and diabetes in children. *In* Psychological Aspects of Diabetes in Children and Adolescents. Pediatr. Adolesc. Endocrinol. 1982; 10:94–98.

[38] Baker, L., Rosman, B., Sargent, J., Noqueira, J., and Stanley, C. A.: Family factors predict glycosylated hemoglobin (HbA_1) in juvenile diabetes: a prospective study. Abstract. Diabetes 1983; 32:15A.

[39] Lustman, P., Carney, R., and Amado, H.: Acute stress and metabolism in diabetes. Diabetes Care 1981; 4:658–59.

[40] Minuchin, S., Baker, L., Rosman, B. L., Liebman, R., Milman, L., and Todd, T. C.: A conceptual model of psychosomatic illness in children: family organization and therapy. Arch. Gen. Psychiatry 1975; 32:1031–38.

[41] Hagen, J. W., Anderson, B., and Barclay, C.: Developmental research in medical settings. Discussion Session Biennial Meet. Soc. Res. Child Development, Toronto, April 1985.

[42] McCollum, A.: The Chronically Ill Child. New Haven, CT, Yale Univ. Press, 1981.

[43] Delamater, A. M., Bubb, J., Warren-Bouton, E., and Fisher, E. B.: Diabetes management in the school setting: the role of the school psychologist. School Psychol. Rev. 1984; 13:192–203.

[44] Solomons, G.: Child abuse and developmental disabilities. Dev. Med. Child Neurol. 1979; 21:101–106.