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Carole B. Menzel

ABSTRACT

Title of Thesis: Psychosocial Evaluation of Children with
Endocrine Disease

Carole Blue Menzel, Master of Science, 1985

Thesis directed by: Jerome E. Singer, Ph. D.
Department of Medical Psychology

In an effort to document psychosocial effects of chronic illness in children, groups of adolescent males with insulin-dependent diabetes mellitus or short stature/delayed adolescent maturation were surveyed, and results compared to those of a control group. Each child's self-esteem, social competence, behavior problems, and his parent's attitudes toward child rearing were measured using questionnaires. No significant differences were found between groups for the child's self-esteem. Short stature boys rated themselves less socially competent than did control group boys. Parents of both illness groups rated their children as having more behavior problems than did control group parents. Although group means for parent attitudes did not differ, there were different patterns of correlation between the attitudes and the child's social competence and behavior problems. Results indicate that specific aspects of a disorder must be considered in any attempt to improve the psychosocial adjustment of a chronically ill child.

PSYCHOSOCIAL EVALUATION OF
CHILDREN WITH ENDOCRINE DISEASE

by

Carole Blue Menzel

Thesis Submitted to the Faculty of the
Department of Medical Psychology Graduate Program
of the Uniformed Services University of the Health Sciences
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INTRODUCTION

Chronic illness often results in a number of problems not directly related to the physical disease itself. A child with a chronic illness has to deal not only with the specific problems associated with the disorder, but also the additional strain it imposes on normal psychosocial development. A child's maturation process may thus be complicated by the simultaneous need to deal with the consequences of an illness. Adolescence may be a particularly difficult time for a chronically ill child, as he may feel stigmatized and be made dependent by his medical condition at a time when peer identification and a transition to independence are highly sought after. Although many medical care personnel feel that chronically ill children tend to be less well adjusted than their healthy peers, the full potential of the problem, variability of outcome, and potential for positive intervention are not well documented. The first step in designing and implementing a treatment system to enhance the psychosocial adjustment of these patients is the evaluation of the extent of the problems.

Two of the major chronic disorders in children, both in terms of prevalence and effect on the child, are insulin-dependent diabetes mellitus, and short stature/delayed adolescent maturation. These two groups were surveyed in an attempt to document patterns of psychosocial adjustment and dysfunction in chronically ill children.

BACKGROUND

Diabetes Mellitus:

Insulin-dependent diabetes mellitus is one of the most common disorders of childhood, and is a life-long chronic illness. Recent estimates of the prevalence of diabetes mellitus suggest that one per six hundred to eight hundred children of school age are affected. The incidence of this disease in the United States is on the order of ten thousand new cases each year (Rudolph, 1982).

Insulin-dependent diabetes mellitus (IDDM) is a metabolic disorder whose precise etiology is not known. The characteristics of the disease, however, are well known. The beta cells of the pancreas do not produce sufficient insulin, and the body thus loses its ability to utilize and store sources of energy, and to transport glucose into the cells. There is no cure for IDDM; it can only be controlled through regular injections of insulin.

Children with diabetes mellitus have to make difficult adjustments requiring both psychological acceptance of a life long serious illness and compliance with a complex regimen of treatment. Although diabetes is considered a "hidden" disease it cannot be easily hidden from anyone who knows the child well. The need to eat more regularly than others, avoid sweets, take shots, monitor exercise, test urine and blood, and carry a sugar source in case of hypoglycemic episodes can serve to make the child feel stigmatized or different from his peers. The patient is faced

with a life-long commitment to daily diabetes management tasks (Johnson, 1980).

The attitude that a child develops toward himself and his diabetes is very important. While diabetes cannot be ignored, it ought not become the core component of the child's identity. Bruhn (1977) maintains that one of the key factors in the quality of a diabetic's self-care is his/her self image. This is influenced, in part, by peer group identification and relationships.

Although many children with diabetes mellitus have healthy attitudes about themselves and their disease, problems are often seen in this population. Swift, Seidman, and Stein (1967) evaluated a large group of children with diabetes and compared them to a group of individually matched controls. They noted increased anxiety, less adequate self-image, and more disturbed dependence-independence balance in the diabetics. In a study of self-esteem in diabetic adolescents, Hauser and co-workers (1979) found that, as a group, the diabetics did not have significantly different levels of self-esteem than the controls. However, when they looked more closely within the group of diabetics, they found that self-esteem was significantly associated with duration of the diabetes. The longer an adolescent had been diabetic, the more likely it was for him/her to have low self-esteem. Johnson and Rosenbloom (1982) report that in some diabetic youth, feelings of being different result in lowered self-esteem and avoidance of interpersonal relationships.

Short Stature/Delayed Adolescent Maturation:

Disturbances of growth and development are the most common presenting complaints in the pediatric endocrine clinic. It is estimated that over one million children in the United States have abnormally short stature and that there are at least ten million children whose growth is potentially abnormal (Silver and Gotlin, 1980).

The most common diagnosis for adolescents with delayed development yet normal serum gonadotropins is constitutional delayed growth pattern. These patients do not have true endocrine deficiencies but are slow in attaining their ultimate height, which usually is within the normal range (Bacon, et al., 1982). The cause of this condition is not known. These children are of normal size at birth, but typically begin to experience deceleration of growth rate at the age of three to six months (Horner, et al., 1978). This decelerated growth may continue for several years at which time the growth rate frequently becomes normal again. Ultimate height is not compromised, but its attainment is delayed beyond the usual time. The bone age and height age of children with constitutional delayed growth are retarded behind their chronological age. Sexual maturation is also delayed, since the hormones which contribute to the pubertal growth spurt are also responsible for secondary sexual development.

A traditional assumption is that children with short stature encounter significant social, academic, and psychological difficulties throughout development (Drash, 1969).

These children are thought to experience low self-esteem and a high degree of social isolation, withdrawal, and immaturity all as a consequence of their short stature.

In one of the earlier studies reported, Kinsey (1948) found late maturing males to be introverted, socially inept, and timid with decreased social activity as adults compared to males maturing early or at an average age. Another study (Jones, et al., 1971) found that boys with late maturation patterns were perceived by their peers as less mature, less attractive, more attention seeking, and restless. Even after graduation from high school, when maturation was completed, the late maturing males studied used more childish social techniques and had more feelings of inadequacy and rejection.

Other studies, however, have challenged the notion of inevitable psychologic maladjustment in children with growth disorders. In a study of growth hormone deficient children, Drotar, et al., (1980) reported no significant differences in psychological adjustment, sex role development, or body image maturity between the short children and a matched comparison group. Stabler and Underwood (1977) found no differences in locus of control or anxiety in similar groups of children.

In a more recent study, Gordon (1982) found that a group of children with constitutional short stature had higher scores on parental ratings of behavior problems than did a comparison group with normal stature. There were also implications of impaired self-concept in the short children.

OBJECTIVES

Many children with a chronic illness may have psychological adjustment problems associated with their medical condition, and would thus potentially benefit from having these issues addressed. The focus of this study was on the child's self-esteem, social competence, and behavior problems, and on his parent's attitudes toward child rearing. The consequences of a disease that has a multi-component treatment regimen that imposes restrictions on the child (diabetes mellitus) was compared to one with a much less restrictive therapeutic regimen yet more dramatic and obvious somatic consequences (short stature). This study was not meant to be a longitudinal investigation of the children and the changes in their psychological adjustment. Rather, it was a one time meeting with each child and parent in an attempt to determine patterns of psychological adjustment and dysfunction. The objective of this pilot project was to characterize the psychosocial effects of chronic illness and to identify factors which correlate with adjustment. Achieving this goal would be an initial step toward positive intervention.

METHOD

Subjects:

Subjects were male pediatric patients from Bethesda Naval Hospital and their parents. Specific groups studied were those with insulin-dependent diabetes mellitus (Group I) and short stature/delayed adolescent maturation (Group II). The adolescents in Group II had a height less than two standard deviations below the mean for their chronological age and/or puberty development delayed at least two years from the mean. The control group (Group III) was composed of children with acute medical problems, or who were being seen for their annual physical examination. The groups were matched for age, and all the children were dependents of military personnel. Groups I and II were from the Pediatric Endocrinology Clinic. Group III was selected from the Pediatric Clinic. Subjects were surveyed in conjunction with their regularly scheduled clinic appointment. Participation was voluntary and based on informed consent.

The age range of the children included in the study was 12 to 17 years. Even though diabetes mellitus is often diagnosed at a younger age, this age range was used for meaningful comparison with the delayed puberty patients. Since the majority of children referred for evaluation of delayed growth are male (Bacon, et al., 1982), to facilitate comparison, only males were included in all the groups.

Procedure:

Parents of all the children were given the Child Behavior Checklist to complete (Achenbach, 1979). This is a systematic, factor analytically derived measure which yields indices of overall social competence and behavior problems, and provides specific assessments of internalizing difficulties (such as depression and social withdrawal) as well as externalizing ones (such as hyperactivity and aggressive behavior). The checklist is composed of two parts. Part I includes three social competence subscales: the activities scale, which rates the amount and quality of the child's participation in sports, hobbies, clubs, and chores; the social scale, which rates the child's interpersonal behavior with others (siblings, parents, peers) and his behavior alone; and the school scale, which rates the child's academic performance and attempts to determine the presence of school problems. The parent is asked to rate the child on each item compared to other children of the same age. Part II is made up of items describing a variety of behavior problems. The parent rates the child on each item on a three point scale, from 0 (not true of child) to 2 (very true or often true of child). The parent is instructed to base the ratings of behavior problems on the previous twelve months. One week test-retest reliabilities of Child Behavior Checklist scores obtained from parents of 12 to 16 year old boys indicate satisfactory stability in scores. Achenbach and Edelbrock (1983) report Pearson correlations of .93 for the social competence scale and

.89 for the behavior problems scale. Also, there were no significant differences reported between mothers' scores and fathers' scores for this age/sex group. Pearson correlations for interparent agreement were .77 for social competence and .69 for behavior problems.

Parents were also asked to complete the Maryland Parent Attitude Survey (Pumroy, 1966). This survey is designed to measure parents' attitudes toward child rearing with social desirability controlled. The survey consists of ninety five pairs of statements. The task of the respondent is to read each pair of statements and decide which of the two most represents his/her attitude. It is then scored to determine the number of items chosen in each of four classification categories: Disciplinary, Indulgent, Protective, Rejecting. Test-retest reliabilities for a period of three months range from .622 to .730 for the four scales. Split half reliabilities of the four scales range from .666 to .843, which is similar to other instruments of this nature. With regard to interparent agreement, it was found that males tend to score higher on the Disciplinary scale than do females, while females tend to score higher than males on the Indulgent scale. To control for this, different T-score scales were calculated to be used in scoring (Pumroy, 1966).

The children were given a modified version of the Child Behavior Checklist to complete. This self-report questionnaire contained the same social competence items as the parent form, but they were worded in the first person. The children were not given the behavior problems portion of

the checklist.

To assess feelings of self-esteem, each child was given the Coopersmith Self-Esteem Inventory. This scale measures evaluative attitudes toward the self and gives a score of global self-esteem. The form is self-administered and consists of fifty short statements that are answered "like me" or "unlike me". A test-retest reliability was reported as .88 over five weeks, and .70 over three years (Coopersmith, 1967).

RESULTS

Data from each measure were analyzed by means of randomized one-way analyses of variance to determine if there were any significant differences between groups. Raw scores were used in the statistical analysis of responses to the Child Behavior Checklist (both the parent and child forms) and the Self-Esteem Inventory. T-scores were used in the analysis of the Parent Attitude Survey to adjust for the tendency for mothers to rate differently than fathers (Pumroy, 1966). The T-score scales used were those calculated by the survey author. When a significant difference between groups was found, a Tukey HSD post hoc comparison was computed to determine the means between which the difference(s) existed. Tukey HSD is a conservative post hoc comparison procedure.

The groups were compared for age of the child for all three groups as well as duration of the disorder for groups I and II. There were no significant differences for either age ($F=.097$, $df=2/26$) or duration of disorder ($F=2.061$, $df=1/16$).

Results from the child version of the Child Behavior Checklist showed there was a significant difference between groups on the total social competence score ($F=3.502$, $df=2/26$, $p<.05$). When the individual subscales were analyzed, it was discovered that there was a significant difference between groups on the social subscale ($F=3.590$, $df=2/26$, $p<.05$), but not for either the activities or the

school subscales. (See Table 1). Post hoc analysis showed that the self ratings of the short stature boys were significantly lower than those of the control boys ($p < .05$) for both total social competence and the social subscale. The diabetic boys' and the short stature boys' ratings did not differ significantly from each other, and neither did the diabetic boys' and control boys' ratings.

There were no significant differences between groups on scores from the Self-Esteem Inventory ($F = .001$, $df = 2/26$). Further analysis also indicated that there was no significant correlation between duration of the disorder and ratings of self-esteem for groups I and II.

Results from the parent form of the Child Behavior Checklist yielded no significant differences between groups on ratings of the child's total social competence ($F = 1.347$, $df = 2/26$), or any of the social competence subscales (activities $F = 1.023$, social $F = .190$, school $F = 2.309$). There were significant differences between groups, however, on ratings of behavior problems (Total Behavior Problems $F = 4.725$, $df = 2/26$, $p < .01$). This significant difference existed for both internalizing problems ($F = 5.177$, $p < .01$) and externalizing problems ($F = 3.329$, $p < .05$). (See Table 2). Post hoc analysis indicated that both group I ($p < .05$) and group II ($p < .01$) parents rated their children as having significantly more trouble with internalizing behavior problems than did the control group parents. There was no significant difference between ratings from group I and group II parents. Group II parents also rated their

children as having more externalizing problems than did the control group parents ($p < .05$). There were no significant differences between group I and group II or group III for ratings of externalizing problems. The only significant difference for parent ratings of total behavior problems was between groups II and III. The parents of the delayed growth boys rated their children as having significantly greater problems than did the parents of the control group boys ($p < .01$).

Analysis of the scores from the Maryland Parent Attitude Survey yielded no significant differences between groups for any of the scales.

Pearson product-moment correlations were computed to examine the relationship between the parent attitudes (disciplinarian, indulgent, protective, rejecting), parent ratings of social competence and behavior problems, and child ratings of self-esteem and social competence. There was a negative correlation ($r = -.639$, $p < .10$) between disciplinarian parental attitude and the child's rating of his social competence in the diabetic group. For the short stature and control groups, however, there was an insignificant low positive correlation. This same trend continued for the relationship between disciplinarian attitude and parental rating of the child's social competence as well as the child's rating of his self-esteem. (See Table 3).

For indulgent parental attitude, there was a positive correlation ($r = .647$, $p < .08$) with child's rating of his social competence in the diabetic group. This was similar

to the control group ($r=.509$, $p=.10$). However, there was zero correlation for the short stature group. There were no significant correlations for any group between indulgence and either parental rating of child's social competence or child's rating of his self-esteem. (See Table 4).

There were no significant correlations for any group between parental protectiveness and child's rating of his social competence. However, while the correlation was positive for the diabetic group ($r=.544$), it was of a comparable magnitude yet negative for the short stature ($r= -.506$) and control ($r= -.417$) groups. For the control group, there was a significant negative correlation ($r= -.642$, $p<.05$) between parental protectiveness and child's self-esteem. This correlation was positive but not significant for the diabetic group ($r=.443$), whereas there was zero correlation for the short stature group. (See Table 5).

There was a significant negative correlation ($r= -.641$, $p<.05$) between a rejecting parental attitude and the parents' rating of child's social competence in the control group. There were no other significant correlations between rejecting parental attitude and social competence or self-esteem for any group. (See Table 6).

There was a significant positive correlation between parental protectiveness and externalizing behavior problems for both the diabetic ($r=.723$, $p<.05$) and delayed growth ($r=.658$, $p<.05$) groups. There was zero correlation, however, for the control group. Furthermore, there was no significant correlation for any group between parental

protectiveness and ratings of internalizing problems. (See Table 5).

Though not reaching significance, there was a positive correlation in the diabetic group ($r=.460$) between parental indulgence and total behavior problems. For the short stature group, the correlation was of a comparable magnitude, yet negative ($r= -.418$). This phenomenon of opposite trends in the two groups holds for both internalizing and externalizing problems. (See Table 4).

Finally, there were no significant correlations in any group between either disciplinarian or rejecting parental attitudes and ratings of behavior problems. Further, it is interesting to note that there was no significant correlation between any of the parental attitudes and ratings of behavior problems in the control group.

DISCUSSION

The results indicate that there is a difference in psychosocial adjustment between adolescents with a chronic disorder and their healthy peers. However, the results from the two ill groups differ from each other on several measures. Therefore, conclusions should not be drawn concerning all chronically ill children based on results from a group of children with one particular illness.

The short stature boys judged themselves less socially competent than either the diabetic or control group boys judged themselves, particularly in terms of their social behavior. This difference in level of social competence is only true for the adolescents' self ratings and does not hold for the parents' evaluation of the youths' functioning. Interestingly, the short stature group boys' feelings of inferiority in social competence did not result in lower self esteem. The short stature boys may consider factors such as school performance and participation in hobbies more important to their feelings of esteem than social interactions. The evaluation of self-esteem might therefore weight these areas of more subjective importance greater and result in a level of self-esteem similar to that of healthy children. There were no differences for ratings of participation in activities or school performance.

Although the parents did not differ in their ratings of their child's social competence, there were differences in their ratings of behavior problems in the child. Again,

however, there were differences between the two ill groups. Parents of both the diabetic and short stature groups rated their boys as having significantly greater behavior problems than the control group parents rated their children. Whereas both groups were rated as having greater internalizing problems than the control group was rated, only the short stature group was rated as having significantly greater externalizing problems.

One concern is how parental attitudes may potentially affect psychosocial adjustment of the children. The results of this study indicate that there is a relationship (though not necessarily causal) between parental attitudes and the child's social competence and behavior problems. However, some parental attitudes are associated with opposite tendencies in groups of children with different disorders. For the diabetic group, there was a negative correlation between disciplinarian parental attitude and both the child's rated social competence (both child and parent ratings) and self-esteem. For the short stature group, on the other hand, the correlations between disciplinarian attitude and both the child's social competence and his self-esteem were positive. There was a strong positive correlation between parental protectiveness and externalizing behavior problems for both the diabetic and short stature groups. This correlation was zero for the control group.

In conclusion, this study indicates that there are problems of psychosocial adjustment in chronically ill

children. However, results from the two ill groups studied indicate that one should not make broad generalizations concerning the psychosocial consequences of chronic illness. The particular physiological characteristics and consequences of a disorder may result in quite different psychosocial effects. Furthermore, parental attitudes do not correlate with factors of psychosocial functioning in the same way for all disorders. Therefore, the specific aspects of the disorder must be considered in any attempt to improve the psychosocial adjustment of chronically ill children.

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Table 1
Social Competence and Self-Esteem Scores
Child Data

	<u>Diabetic (n=8)</u>		<u>Short (n=10)</u>		<u>Control (n=11)</u>		
	Mean	SD	Mean	SD	Mean	SD	F
Social Competence	19.69	3.09	16.35	4.24	20.86	3.98	3.50 *
Activities	8.00	2.39	6.00	2.29	7.59	1.83	2.29
Social	7.06	1.86	5.35	2.38	8.18	2.54	3.59 *
School	4.63	0.79	5.00	1.05	5.09	0.83	0.71
Self-Esteem	76.00	12.05	76.00	11.96	76.18	14.79	.001

* $p < .05$

Table 2
Social Competence and Behavior Problems Scores
Parent Data

	<u>Diabetic (n=8)</u>		<u>Short (n=10)</u>		<u>Control (n=11)</u>		
	Mean	SD	Mean	SD	Mean	SD	F
Social Competence	17.19	3.08	18.70	4.42	20.09	3.79	1.35
Activities	6.75	2.63	7.50	1.86	8.00	1.26	1.02
Social	6.56	1.76	6.55	2.66	7.14	2.45	0.19
School	3.87	1.03	4.65	1.25	4.95	1.08	2.31
Behavior Problems	28.25	15.46	38.00	26.52	12.55	7.84	4.73 **
Internalizing	14.38	8.57	16.50	10.74	5.27	3.80	5.18 **
Externalizing	11.13	6.10	18.80	15.76	6.73	5.22	3.33 *

* $p < .05$

** $p < .01$

TABLE 3

Pearson Correlations of Disciplinarian Parental Attitude and Child's Social Competence, Self-Esteem, and Behavior Problems

	<u>Diabetic</u>	<u>Short</u>	<u>Control</u>
Social Competence (child's rating)	-.639	+.353	+.250
Social Competence (parent's rating)	-.132	+.425	+.136
Self-Esteem	-.331	+.518	+.230
Behavior Problems	-.290	+.055	+.471
Internalizing problems	-.183	+.074	+.161
Externalizing problems	-.316	+.099	+.408

TABLE 4

Pearson Correlations of Indulgent Parental Attitude and
Child's Social Competence, Self-Esteem, and Behavior Problems

	<u>Diabetic</u>	<u>Short</u>	<u>Control</u>
Social Competence (child's rating)	+.647	.000	+.509
Social Competence (parent's rating)	+.166	+.104	+.363
Self-Esteem	+.473	+.028	+.141
Behavior Problems	+.460	-.418	-.173
Internalizing problems	+.388	-.428	+.223
Externalizing problems	+.465	-.437	-.357

TABLE 5

Pearson Correlations of Protective Parental Attitude and Child's Social Competence, Self-Esteem, and Behavior Problems

	<u>Diabetic</u>	<u>Short</u>	<u>Control</u>
Social Competence (child's rating)	+.544	-.506	-.417
Social Competence (parent's rating)	.000	-.290	+.304
Self-Esteem	+.443	.000	-.642 *
Behavior Problems	+.494	+.656 *	-.105
Internalizing problems	+.406	+.528	-.086
Externalizing problems	+.723 *	+.658 *	.000

* $p < .05$

TABLE 6

Pearson Correlations of Rejecting Parental Attitude and Child's Social Competence, Self-Esteem, and Behavior Problems

	<u>Diabetic</u>	<u>Short</u>	<u>Control</u>
Social Competence (child's rating)	+.047	+.105	-.262
Social Competence (parent's rating)	+.138	-.171	-.641 *
Self-Esteem	-.195	-.412	+.246
Behavior Problems	-.361	-.234	-.169
Internalizing problems	-.382	-.119	-.229
Externalizing problems	-.514	-.248	-.071

* $p < .05$