

Coping Strategies of Parents Facing Child Diabetes Mellitus

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This study identified differences in strategies used by mothers and fathers ($N = 60$) in coping with their child's insulin-dependent diabetes mellitus. The Ways of Coping Questionnaire (WCQ) was administered during a home interview. Results showed that both parents used planful problem solving, exercised positive reappraisal, and sought social support frequently, with mothers using more planful problem-solving strategies than fathers. Within the family, analyses showed that fathers were more likely to use distancing, independent of the child's sex, whereas mothers were more likely to frequently use all the coping strategies when the child was a girl. The implications of the results for nursing are discussed.

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INSULIN-DEPENDENT diabetes mellitus (IDDM) is the most common chronic endocrine condition in children (Johnson, 1988; La Greca, 1988), occurring in 8 of 100,000 children under the age of 16 years (Moyer, 1989). In the United States, IDDM is newly diagnosed in 13,000 children each year (American Diabetes Association, 2000a). Children with diabetes are required to adhere to a highly complex medical regimen. Daily diabetic therapy consists of 2 or 3 insulin injections, a strict diet, and a program of physical exercises (American Diabetes Association, 2000a, b, c; La Greca, 1988). Despite possible control of blood-sugar levels, IDDM remains a chronic condition, potentially threatening the child's life. Chronic illness in childhood is a very demanding and stressful experience not only for the children themselves, but also for the whole family (Bouma & Schweitzer, 1990; Cohen, 1999; Gibson, 1988). Parents of children with IDDM must deal with the risk of severe insulin reactions, current and future medical complications, repeated hospitalizations, and the fact that the child's life-span may be reduced. Moreover, assuming responsibility for the child's adherence to daily treatment (Wysocki, Huxtable, Linscheid, &

Wayne, 1989), while responding to his or her developmental needs and the needs of the family, puts a considerable amount of stress on parents (Kovacs, Iyengar, Goldston, Obrosky, Stewart, & Marsh, 1990; Krulik, Turner-Henson, Kanematsu, Al-Ma'aitah, Swan, & Holaday, 1999).

In order to deal with the daily hassles caused by IDDM, parents must have access to various coping mechanisms. Very little has been published that pertains to the personal context of mothers and fathers coping with IDDM. Far less is known about fathers' responses to diabetes and how they differ from mothers' ways of coping. To address this lack of information, the present study aimed to (1) examine whether mothers and fathers differ in their use of coping strategies when dealing with their child's IDDM, (2) investigate whether mothers and fathers use symmetrical or complementary coping strategies, and (3) determine whether the child's sex influences the type of strategies used by mothers and fathers.

STUDY OVERVIEW

Lazarus and Folkman's (1988a, b) theory of stress and coping guided much of the research on individual differences in response to situations and settings that pose a challenge. This theory posits that stress is experienced as a developing dynamic reciprocal transaction. This means that the individual's interaction with a stressor is neither a reaction nor a response, but rather a transaction between his or her appraisal of the level of threat to his or her well-being (Folkman, Chesney, Mckusick, Ironson,

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Johnson, & Coates, 1991). In other words, the individual feels stressed only when he or she assesses the event taxing his or her psychological resources (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986).

When this knowledge is applied to understanding parents' reactions to their child's IDDM, it becomes clear that the illness is perceived as a threat. In dealing with the threat posed by IDDM, parents will engage in a two-step process of appraisal. According to Folkman and Lazarus (1988a), the first step involves evaluating whether the event is potentially harmful, beneficial, or benign to him or herself or to a beloved person such as his or her child. This first step is referred to as *primary appraisal*. The second step, which is termed *secondary appraisal*, involves determining whether he or she can overcome the stressful experience so as to minimize the negative consequences and to optimize successful adaptation. Primary and secondary appraisals can occur simultaneously. Once the parent has appraised the complexity of the situation, he or she will then mobilize his or her personal resources in an effort to cope. Coping involves the use of cognitive and behavioral strategies to deal with the demands imposed by the stressful experience. In Lazarus' theory, the emphasis is on the process of coping as opposed to whether coping leads to a good or bad adjustment. There are at least two major functions of coping—one is problem-focused and the other is emotion-focused (Lazarus, 1993). Both forms of coping may be used simultaneously in all stressful situations (Beresford, 1994; Folkman & Lazarus, 1988b).

DO MOTHERS AND FATHERS DIFFER IN THEIR USE OF COPING STRATEGIES?

When searching for differences between mothers' and fathers' ways of coping, it is important to bear in mind that mothers are the main care providers and are more likely to be involved in managing their children's medical regimens (Anderson & Auslander, 1980; Moyer, 1989). Indeed, the majority of studies have focused primarily on mothers' responses to their child's illness and their responsibility for successful management of treatment procedures (Eiser, Havermans, Kirby, Eiser, & Pancer, 1993). Although limited information exists on the coping strategies used by fathers, the available data suggest that fathers use different strategies (Cohen, 1999; Dashiff, 1993). To our knowledge, only one study looked at differences between mothers' and fathers' perception of and

reactions to diabetes (Dashiff, 1993). For example, in Dashiff's (1993) study of adolescent girls with IDDM, the author found that mothers were more likely to use strategies related to the management of the illness, whereas fathers were more likely to choose coping strategies that distanced themselves from the stressors related to diabetes. Interestingly, Smith, Dickerson, Saylor, and Jones (1989) found that fathers distance themselves from their child's IDDM because they experience difficulties in becoming involved in the child's daily care.

Other research involving parents of children with cancer and cystic fibrosis point to differences as well. These findings suggest a similar pattern of coping to that used by parents of children with IDDM. For instance, studies examining how mothers and fathers cope with their child's cancer (Hurley, 1984; Koocher & O'Malley, 1981; Larson, Wittrock, & Sandgren, 1994) found that fathers try to avoid the stress caused by the child's illness by using escape strategies such as increasing their job-related workload or by finding ways to distance themselves psychologically. According to Gibson's study (1988) of parental coping with children's cystic fibrosis, the use of problem-solving strategies facilitates the use of a positive reappraisal strategy for coping. This latter form of coping and coping strategies that rely on social support were also found, in other studies on cancer (Barbarin, Hughes, & Chesler, 1985; Larson et al., 1994), to be used more by mothers than by fathers. Positive reappraisal coping enables parents to draw on their own resources and focus on the positive aspects of their situation. Indeed, positive reappraisal may modify the parent's emotional state by reducing negative emotions such as anger and sadness while generating positive emotions like satisfaction and pride (Folkman & Lazarus, 1988b). On the other hand, according to Folkman and Lazarus (1988b), escape-avoidance is reported to be one of the most common ways that people deal with stress. Escape-avoidance, mainly through wishful thinking, is used to a great extent by parents of children with cancer, and to an even greater extent by parents of children infected with the HIV virus (Hardy, Armstrong, Routh, Albrecht, & Davis, 1994).

DO MOTHERS AND FATHERS USE SYMMETRICAL OR COMPLEMENTARY COPING STRATEGIES?

The term *symmetrical* refers to patterns of coping in which both or neither of the spouses uses a particular coping strategy (Barbarin et al., 1985).

Complementary, on the other hand, describes patterns in which one spouse uses a strategy very frequently and the other rarely. Barbarin et al. (1985) suggest that parents of children with a chronic illness may use symmetrical or complementary coping strategies. They found that parents of children with cancer were more likely to use symmetrical strategies. In dealing with IDDM, it would seem that parents' coping strategies would be more symmetrical. This makes sense in light of the transactional character of the individual coping process of each parent (as proposed by Lazarus' model) that is embedded in the context of the parental dyad as well as the whole familial system.

DOES THE SEX OF THE CHILD WITH IDDM INFLUENCE THE TYPE OF COPING STRATEGIES USED BY MOTHERS AND FATHERS?

Coping with a child's chronic illness is a complex process that is influenced by the child's characteristics—namely his or her sex. With regard to IDDM, researchers (Eiser et al., 1993) have shown that the child's sex has a differential effect on parental feelings of self-confidence in managing diabetes. Mothers reported having more confidence when the child is a girl. Fathers reported that engaging in activities with the family helped them to face the illness when the child with diabetes was a girl rather than a boy. Although the latter finding (Eiser et al., 1993) suggests that the child's sex influences parents' coping and feelings of confidence, there is a lack of research examining the interaction between the sex of the child and the sex of the parent. We do not know whether, within a family, the mother's and father's use of coping strategies varies as a function of the child's sex. By studying a group of families with a child with IDDM, we attempted to address this lack of information in the current study. Because a number of studies have suggested that the child's sex plays an important role in influencing parents' coping strategies, we expected to find that, within a family, the coping strategies used by the mother and the father would vary according to the child's sex.

To recapitulate, the goals of the study were to address 3 empirical questions: (1) Do mothers and fathers of a child with IDDM use different coping strategies? (2) Within the couple, do mothers and fathers use symmetrical or complementary coping strategies? and (3) Does the sex of the child with IDDM influence the type of coping strategies used by mothers and fathers? Based on Dashiff's study (1993), we expected mothers to exercise more

planful problem solving, whereas fathers would use distancing strategies. Based on the research conducted by Barbarin et al. (1985), we expected both parents to use symmetrical strategies. Finally, as suggested by Eiser et al. (1993), we expected to find that, within a family, the type of coping strategy used by the mother and father would vary according to their child's sex.

METHODS

Participants

Our sample comprised 30 couples who met the following criteria: (1) two-parent family, (2) child with IDDM between 8 and 11 years of age, and (3) child's diabetes diagnosed at least 2 years before our study. The first criterion was set to avoid confounding the stress associated with the child's illness with the possible stress associated with single parenting. The second criterion was established to ensure that the children were at approximately the same developmental level. IDDM is frequently diagnosed in childhood at approximately 5 to 6 years of age (Johnson, 1988). The third criterion was set so that parents would have had the time to evolve and maintain their coping strategies.

Forty-five of the parents were French-speaking, and 15 were English-speaking. The mothers' mean age was 38.6 years ($SD = 4.8$), and the fathers' mean age was 42.2 years ($SD = 6.7$). Eighteen mothers (60%) were employed full time outside the home. Fifty-nine fathers (98.33%) were employed. One father was retired (Table 1). The couples were the parents of 13 boys and 17 girls whose mean age was 9.6 (± 1.2 years). The IDDM had been diagnosed an average of 4.9 years before the study took place. After the initial hospitalization, during which the diagnosis of IDDM was made, 28 children had been rehospitalized at least once either to control their glycemia or because of gastric problems.

Instrument

The Ways of Coping Questionnaire (WCQ), designed by Folkman and Lazarus (1988a), was used to assess the frequency and type of coping strategies used by parents in response to their child's IDDM. This instrument was chosen for three reasons: (1) it was derived from Folkman and Lazarus' theory; (2) it is applicable in various research contexts, including chronic illness; and (3) the administration time is short (20 to 30 minutes). A French translation of the WCQ was used with the

Table 1. Demographic Characteristics of Mothers (n = 30) and Fathers (n = 30): Numbers and Percentages

Variables	Parents (N = 60)	Mothers (n = 30)	Fathers (n = 30)
Age: Mean \pm SD	40.4 \pm 6.0	38.6 \pm 4.8	42.2 \pm 6.7
Ethnic Background: n (%)			
French Canadian	39 (65)	19 (63)	20 (67)
English Canadian	14 (23)	7 (23)	7 (23)
Other	7 (12)	4 (13)	3 (10)
Religion: n (%)			
Catholic	47 (78)	23 (77)	24 (80)
Protestant	13 (22)	7 (23)	6 (20)
Employment: n (%)			
Professional	16 (27)	8 (27)	8 (27)
White collar	21 (35)	7 (23)	14 (47)
Blue collar	10 (17)	3 (10)	7 (23)
Full-time student	3 (5)	3 (10)	0 (0)
Homemaker	10 (17)	9 (30)	1 (3)
Level of education: n (%)			
University	20 (33)	9 (30)	11 (37)
College	16 (27)	9 (30)	7 (23)
High school	22 (37)	11 (37)	11 (37)
Elementary school	2 (3)	1 (3)	1 (3)

Note. Because percentages were rounded, totals do not always equal 100%.

French-speaking participants (Schwartzman & Senneville, 1993).

The WCQ is a 66-item, self-report instrument. Each item or statement represents a specific coping strategy. Parents indicate the frequency with which they use each coping strategy on a scale ranging from 0 (not used at all/does not apply) to 3 (very often). A higher score indicates that the subject frequently uses the coping strategy that the item reflects. Of the 66 items, only 50 constitute the WCQ's 8 subscales. The remaining 16 items are not included in any of the subscales (Table 2). The subscales are confrontation, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal. Each subscale yields a score. The subscales do not contain an equal number of items (Table 2). We added the 16 additional items to the 50 items in the subscales to generate a total score that describes the frequency of use of all the WCQ coping strategies. The subscales offer a measure of the type and frequency of use of each particular category of coping strategy. The total scale with the other 16 items is an indicator of the amount of use of coping strategies—their frequency without reference to their type. In summary, we obtained eight subscales and a total score for each participant.

The WCQ is reported to have good internal consistency with Cronbach's alphas for the subscales ranging between 0.61 and 0.79. The WCQ

also has a good construct and concurrent validity (Tennen & Herzberger, 1987). According to the investigators (Folkman et al., 1986; Folkman & Lazarus, 1988a), the results of their various studies using this instrument and the concepts of the transactional theory of stress and coping from which the WCQ is derived are compatible. However, convergent validity of the WCQ has not been reported (Tennen & Herzberger, 1987). In this study, the WCQ global scale and the eight subscales showed very good internal consistency ($\alpha = 0.90$ for the English version; $\alpha = 0.82$ for the French version). The alpha reliability coefficients for each subscale were high. They were higher for the English version than the French version: confrontation (0.87 v 0.79), distancing (0.91 v 0.82), self-control (0.86 v 0.77), seeking social support (0.88 v 0.81), accepting responsibility (0.89 v 0.80), escape-avoidance (0.91 v 0.80), planful problem solving (0.86 v 0.82), and positive reappraisal (0.86 v 0.80).

To make the WCQ even more pertinent to parents who face IDDM, we slightly modified two items in order to link them more directly to the illness. For instance, the words "ex. doctor" were added in brackets to the item, "I tried to get the person (ex. doctor) responsible to change his or her mind." The word "important" was added after the word "nothing" in the statement, "I went on as if nothing important had happened."

To add a more contextual/personal aspect to the

Table 2. Examples of Items on the WCQ Sub-Scales

Subscale	Number of Items	Example of Items
Confrontation	6	"I did something that I didn't think would work, but at least I was doing something."
Distancing	6	"I didn't let it get to me; I refused to think too much about it."
Self-control	7	"I tried to keep my feelings for myself."
Seeking social support	6	"I talked to someone (e.g., nurse) who can do something concrete about the problem."
Accepting responsibility	4	"I criticized or lectured myself."
Escape-avoidance	8	"I tried to make myself feel better by eating, drinking, smoking, using drugs, or medications, etc."
Planful problem solving	6	"I tried to get the person (e.g., doctor, nurse) to change his or her mind."
Positive reappraisal	7	"I came out of the experience better than when I went in."
Items not in the subscales	16	"I felt that time will make a difference—the only thing is to wait"; "I prepared myself for the worst"; "I accepted the next best thing to what I wanted."

scores of the WCQ, parents' personal strategies not tapped by the instrument were also examined. The purpose of these additional qualitative data was to get a broader picture (Oakland & Ostell, 1996) and a deeper understanding of coping in the context of IDDM. Qualitative data analysis involved two steps. The first step required several readings by the two authors of parents' verbatim statements. The purpose of this step was to become familiar with the content. The second step consisted of separately searching for and identifying common themes of coping efforts. Next, we discussed the identified themes and reached a consensus. Finally, we jointly selected titles for the themes. There are two ways of scoring the WCQ—the raw and the relative techniques. We used the relative scoring technique. The raw scoring technique consists of adding the scores of the items of each subscale. The relative technique consists of calculating the proportion of all the endorsements of items within each subscale by first computing the mean item scores for each subscale (Knussen, Sloper, Cunningham, & Turner, 1992). This is achieved by dividing the sum of the ratings by the number of items in the scale. Then the mean item scores are divided by the sum of the mean item scores for each subscale. Relative scores offer a better insight into coping processes by controlling for the unequal number of items in the different subscales (Knussen et al., 1992; Vitaliano, Mairo, Russo, & Becker, 1987).

Procedures

Three methods of subject recruitment were used. After obtaining approval from its Research Board, the local Juvenile Diabetic Foundation helped us mail letters to parents of children with IDDM. The purpose of the study was described and parents were invited to participate. Notices were distributed to parents during social activities of the association of parents of children with diabetes. Announcements describing the study and providing contact information were placed in two local papers and in two major children's hospitals in the city of Montreal.

Parents who agreed to participate were contacted to set up a home interview. Data were collected during this interview, which was conducted with both parents. Once they had provided informed written consent, parents were asked about various family characteristics such as family size, income, and education. They then responded individually to the WCQ. Parents were instructed to think about their child's medical condition when

responding to the statements. They were also asked to think about the ways they coped with their child's diabetes. When the questionnaire was completed, the parents were asked to write descriptions of the coping strategies that they used that were not mentioned in the questionnaire. After the interview, parents were debriefed. They were told that answering the kinds of questions we had asked could trigger some negative emotions. They were invited to talk about their child's illness if they so desired, and they were offered referrals for psychological help should they feel the need. Only one mother availed herself of this offer.

RESULTS

In this results section, we present our preliminary analyses and the results of our three research questions. First, we verified the internal consistency of the subscales. In order to determine if there were differences in parents' scores as a function of sociodemographic variables (shown in Table 1), a multiple regression analysis was performed on the total coping scores with parental income, education, and employment (analyzed jointly and separately) serving as predictor variables. See Table 1 for demographic data. None of the sociodemographic variables had a significant effect on total coping scores ($F[3, 56] = 0.99, p < .4$). These variables were, therefore, not included in the subsequent analyses. A descriptive analysis was used to determine the types of coping strategies the parents used.

To address the first research question, that is, whether mothers and fathers differ in their coping strategies, we used a descriptive analysis and the additional qualitative data that identified coping strategies not tapped by the WCQ. We also performed a between-group analysis as well as a within-group analysis. The between-group analysis consisted of a stepwise logistic regression because of the small sample size ($N = 60$). In fact, scores on the eight subscales were probably not all normally distributed because of the small size of the sample. The use of logistic regression solved this potential problem because it has no assumption about the distribution of the predictor variables (Tabachnick & Fidell, 1996). The sex of the parent was used as an outcome of the regression model and the total coping score, and the eight subscale scores were used as predictors. Conceptually speaking, total coping score was chosen as a predictor variable in order to include the information provided by the 16 items that did not belong to a subscale. To verify if and how the inclusion of the

total score in the regression would alter the outcomes, the logistic regression was first performed with the total score and then without it. There was no statistically significant difference between the 2 regressions. Because inclusion or removal of predictor variables from the equation of stepwise regression are based solely on statistical criteria (Tabachnik & Fidell, 1996), total score was kept in the analysis. We used sex as an outcome variable to statistically determine which subscales of the WCQ discriminate best between mothers and fathers. To explore within-couple differences in the use of coping strategies, we performed a paired *t*-test for each subscale as well as for the total score.

Results of the descriptive analysis showed that mothers and fathers used all of the types of coping strategies measured by the WCQ. As shown in Table 3, parents of children with IDDM used planful problem solving (20%), positive reappraisal (19%), and social support strategies (18%) more frequently than they used self-control (14%), distancing (11%), confrontation (8%), escape-avoidance (6%), and accepting responsibility (5%).

The additional qualitative data showed that, when asked about other coping strategies, parents mentioned the following: (1) live one day at a time (two mothers), (2) be optimistic (one mother), (3) be grateful that the child does not have cancer (three mothers and two fathers), (4) hope for a medical cure (two mothers), (5) maintain normal family activity while attending to the child's needs (one father), (6) be more empathetic towards the child's condition (two mothers), (7) help the child accept his or her diabetes (three fathers), (8) minimize the severity of the child's illness (two fathers), (9) transfer the notion of minimizing the

Table 3. Proportion of Use of Coping Strategies: Means and Standard Deviations of Each Coping Scale

Coping Scales	Parents (N = 60)	Mothers (n = 30)	Fathers (n = 30)
Confrontation	0.08 ± 0.04	0.08 ± 0.04	0.07 ± 0.04
Distancing	0.11 ± 0.06	0.09 ± 0.04	0.12 ± 0.08
Self-control	0.14 ± 0.06	0.14 ± 0.04	0.15 ± 0.07
Seeking social support	0.18 ± 0.06	0.18 ± 0.06	0.18 ± 0.06
Accepting responsibility	0.05 ± 0.05	0.05 ± 0.05	0.05 ± 0.06
Escape-avoidance	0.06 ± 0.05	0.06 ± 0.05	0.07 ± 0.05
Planful problem solving	0.20 ± 0.06	0.20 ± 0.05	0.19 ± 0.07
Positive reappraisal	0.19 ± 0.06	0.19 ± 0.06	0.18 ± 0.07

Note. Because means (relative scores) were rounded, totals do not equal 1 (100%).

Table 4. Regression Coefficient, Wald Statistic, and Odds Ratio of the Reduced Model

Variables	B	Wald	Odds Ratio
Planful problem solving	0.2342	6.7559	1.2639*
Constant	-0.20134	6.0196	

**p* < .0093

severity of the illness to the child (one mother), (10) help the child take control of his or her life situation (two mothers), (11) persuade the child to control his or her diet so as to minimize parental stress (one mother), (12) obtain the most recent medical information from the physician or nurse to increase understanding of the child's illness in order to act more efficiently in case of emergency (one father), and (13) think about the past when the child was not ill (one mother).

In our investigation of the differences between mothers' and fathers' coping strategies in the entire sample, the results of the stepwise regression analysis showed that a test of the full model of regression with all nine variables (eight subscales and the total score) against a constant-only model was not reliable ($\chi^2 [50, N = 60] = 58.9, p < .18$). This indicated that the predictor variables (total coping score and the subscales) as a set could not discriminate between mothers and fathers ($\chi^2 [9, N = 60] = 9.84, p < .36$). The stepwise elimination of predictor variables according to their discriminatory power showed that the only variable retained by the model was planful problem solving. This subscale reliably discriminated between mothers and fathers (Wald statistic = 6.76, *p* < .0093). Mothers were 1.3 times more likely than fathers to use planful problem-solving coping strategies (Table 4). This result was obtained when both backward and forward methods of entering variables in the logistic model were used.

When we compared mothers and fathers within couples, some of the results were different. In addition to the mothers' greater use of planful problem solving, the paired *t*-tests performed on the WCQ scores of couples showed that mothers used all of the strategies (total coping score) significantly more often than did fathers (72.37 *v* 57.90; *t*(29) = 3.13, *p* < .005). Furthermore, when examining each coping strategy separately, we found that fathers used distancing significantly more than mothers (0.12 *v* 0.09; *t*[29] = 2.28, *p* < .05).

To address the second research question, that is, whether mothers' and fathers' coping strategies relate to each other in a symmetrical or a comple-

mentary manner, we also performed paired *t*-tests. This within-group analysis was used to explore how spouses' strategies are related to each other. Paired *t*-tests were chosen because they not only indicate a simple correlation between coping strategies of married couples, but they also highlight the direction of the relationship, that is, who used more or less of each coping strategy. Results of the within-couple paired *t*-test showed that for planful problem solving, escape-avoidance, positive reappraisal, accepting responsibility, seeking social support, and self-control strategies, spouses use symmetrical coping strategies ($p > .05$). They both used these strategies frequently and used the escape-avoidance and accepting responsibility coping strategies less frequently. Distancing was the only coping strategy used by spouses in a complementary way, that is, in a pattern in which mothers used this strategy very frequently and their spouses rarely ($p < .05$).

To address the third research question, we also performed paired *t*-tests. This within-group analysis was used to examine whether the sex of the child was related to parental coping strategies. The paired *t*-tests yielded results showing that, when the child with diabetes was a girl ($N = 17$), mothers used significantly more coping strategies than fathers ($78.35 \nu 58.65$; $t[16] = 3.04$, $p = .008$).

DISCUSSION

Folkman and Lazarus' (1988a) theory has been used in previous studies to understand how people adapt to many stressors. Applying Lazarus' theory to understand how parents cope with their child's IDDM was relevant in this study. Consistent with our expectations, we were able to find differences between mothers' and fathers' coping strategies. Mothers used more planful problem solving than fathers. Furthermore, fathers used more distancing than their spouses to cope with their child's illness. As we expected, this study showed that mothers and fathers use coping efforts related in a symmetrical manner. Another goal of this study was to examine whether coping strategies are influenced by the sex of the child. As we hypothesized, mothers used the overall coping strategies considerably more often than fathers when the child with IDDM was a girl.

Some of the parents of children with IDDM use the same coping strategies as parents of children with other chronic illnesses. This is an interesting finding as researchers have used different instruments to measure coping and because IDDM is usually not as life threatening as cancer or cystic

fibrosis. The finding that mothers used more coping strategies than their spouses was also reported in the literature on cystic fibrosis (Kornias-Biela, 1990). Furthermore, like mothers of children with cancer (Barbarin et al., 1985), mothers of children with IDDM used less distancing than their spouses. The greater use of planful problem-solving strategies by mothers as compared with fathers mirrors findings about mothers of children with cancer (Larson et al., 1994). Like parents coping with their child's cystic fibrosis or cancer, some parents of children with IDDM reported that they try to remain optimistic, continue to hope for a medical cure, accept the child's illness, minimize the illness, and try to maintain usual family activities.

This study showed that both parents most frequently used planful problem solving, exercised positive reappraisal, and sought social support, with planful problem-solving the most frequently endorsed. According to Folkman and Lazarus (1980), planful problem solving is a major form of problem-focused coping, which consists of rational techniques such as "I knew what had to be done, so I doubled my efforts to make things work." During the home interview, three mothers offered concrete examples of personal planful problem-solving strategies. They spoke of problems they had had to face that stemmed from teachers' lack of understanding when their children suffered from hypoglycemia during class. In each case, it happened more than once that the child was not allowed to drink his or her juice or leave the classroom. In one case, the mother successfully confronted the teacher. In another, the mother gave a talk on diabetes and the implications of diabetes to the teachers and the school board. The third mother distributed pamphlets produced by the Canadian Diabetes Foundation at her daughter's school.

On the other hand, parents may also frequently use an emotion-focused strategy such as positive reappraisal to increase a sense of control over their emotional states (Folkman, 1984). Positive reappraisal aims to find some positive elements in IDDM. Parents frequently endorsed WCQ items such as "I was inspired to do something creative about the problem" and "I changed or grew as a person," which support this interpretation. Additional examples of positive reappraisal emerged in parents' statements about minimizing the severity of the child's illness or being grateful that the child did not have cancer.

Some parents' coping strategies seem to be directed toward seeking help and obtaining medical advice from a medical team. One parent stated that

he tries to obtain the most recent medical information in order to act more efficiently when confronted with a medical emergency. This interpretation is supported by the high scores that were attributed to items such as "I talked to someone who could do something concrete about the problem." Indeed, information seeking is a coping strategy frequently employed by people attempting to gain control over a chronic medical condition (Hamburg & Inoff, 1985). Seeking social support from medical staff may also serve a dual purpose in that medical professionals may help parents to obtain emotional support and manage negative emotions during difficult times.

The parents in this sample used distancing, confrontation, and escape-avoidance strategies less than they used the three strategies mentioned previously. They used the strategy of accepting responsibility least. Distancing describes efforts to detach oneself from the stressor. One explanation of why distancing was used less often by the participants may be that, when the study took place, they had had at least two years to come to terms with and accept IDDM. We may speculate that the parents used confrontation less often for the same reason because it has an aggressive and hostile component that may be more intense at the onset of the coping process, than immediately following the initial shock of the diagnosis of IDDM. Escape-avoidance, which is associated with distress and anxiety (Folkman & Lazarus, 1988b), was also less often reported by parents of children with cystic fibrosis (Hymovich & Baker, 1985). IDDM and cystic fibrosis do not appear to elicit escape-avoidance strategies. Perhaps this is because these chronic illnesses are usually not as imminently fatal as cancer and HIV, and they do not involve the contagion factor of HIV. Consequently, parents of children with IDDM may feel that, despite the potential threat to their children's lives, they can exert control over the short-term course of diabetes. Accepting responsibility involves acknowledging one's own role in the problem while trying to ameliorate the situation (Folkman et al., 1986). We made no prediction about the use of this coping strategy, which may involve feelings of guilt, but we initially thought that parents might feel responsible because of a hereditary component. Despite theory and the fact that IDDM is known to be, at least in part, a hereditary illness, our results showed that accepting responsibility was the least frequently endorsed coping strategy. Perhaps this low frequency is due, in part, to the lapse of time. Indeed, our study took place an average of 4.9

years after the diagnosis. Emotions such as guilt, shock, anger, or distress are more likely to be experienced by parents at the moment of or shortly after the diagnosis is made. Moreover, Folkman and Lazarus (1986) hold that accepting responsibility as a form of coping is more frequent in depressed people. The parents who may have had these feelings may have had sufficient time to deal with and overcome feelings of guilt and depression.

This study replicated the results of Dashiff (1993) on sex differences in coping, namely that mothers used more planful problem solving than fathers. This latter finding may be attributable to the fact that mothers are responsible for administering insulin injections to children under 13 years of age (Anderson & Auslander, 1980; Anderson, Jung, Miller, & Santiago, 1990; Hauser & Solomon, 1985; Smith et al., 1989). Our within-couple analysis also corroborated the Dashiff's finding (1993) that fathers use distancing more frequently than mothers. What does this mean? In his review of the literature on parental coping with a disabled child, Beresford (1994) estimated that the association between distancing and level of distress is less pronounced and mainly contradictory when it comes to fathers. How does this relate to diabetes? One possible explanation for the greater use of distancing by fathers within couples is the marital interaction phenomenon. Some men may withdraw because they feel that their wives are too emotionally involved with their child's illness. One may also speculate that some mothers may want to take greater control of the IDDM management in order to reduce their distress levels and, therefore, keep husbands from participating. Eventually, the fathers may stop trying to be involved.

Within-couple analysis also showed that all of the coping strategies, except distancing, were symmetrical. We thereby found support for the findings of Barbarin et al. (1985), which indicated that spouses generally use symmetrical, rather than complementary, coping strategies. It is interesting to note that the congruence between the patterns of spousal coping may be influenced by a number of factors that we did not investigate in this study. Such factors include family processes, the dynamics of interaction between spouses, and the quality of marital communication. This could also be related to the time (4.9 years) elapsed after diagnosis. Perhaps, initially, mothers' and fathers' coping strategies were less symmetrical.

Regarding the effects of the child's sex on parents' coping, it is unclear why mothers had a

significantly higher total coping score than fathers when the child with IDDM was a girl. Mothers have been reported to be more likely to perceive girls with IDDM as more vulnerable to diabetes than boys (Canning, Harris, & Kelleher, 1996; Holden, Chmielewski, & Nelson, 1997). Some research has shown that parents perceive the disease to be more serious and the death risk higher in girls (Canning et al., 1996). Because coping is usually intimately related to the appraisal of stress, one may hesitantly advance the argument that a mother's use of more coping strategies when the child is a girl reflects a greater distress level because of stronger identification with a daughter's suffering.

Our data do not confirm some of the sex differences in parental strategies found in other studies, such as mothers' greater use of social support and positive reappraisal strategies (Barbarin et al., 1985; Hymovich & Baker, 1985; Larson et al., 1994). These two coping strategies were used by both parents to the same extent. Whether this is due to the particularity of IDDM remains to be explored. Furthermore, although Folkman et al. (1986) argue that people use distancing to a great extent when they have to accept a situation, this was not supported by our study. Does a father's more frequent use of distancing indicate that he has not yet accepted his child's illness? Do parents ever really accept a child's illness, even after many years have passed?

Limitations

There are some limitations of this study. First, the ability to generalize from our results is limited by the small size of the sample. Secondly, moderate to high correlations between the WCQ subscales may have limited the findings of the logistic regression analysis. Results of the current study need to be replicated with other samples. Despite these limitations, one strength of this study is that it helped bring some insight into coping processes in parents and, more particularly, within couples.

Future Studies

We see this investigation as a first step in exploring how parents cope with children who suffer from IDDM. The qualitative component of our study indicates that, in future research, using additional scales and open interviews will further clarify coping processes and coping influence within couples. Open interviews would lead to content analyses that might yield strategies not tapped by the various coping scales in use and by simply asking for additional information. Moreover, lon-

gitudinal studies would help us gain a deeper understanding of the ever-unfolding character of the process of coping with a chronic illness as time passes. Future research should also address the question of which strategies lead to more successful parental coping in terms of individual, couple, and family functioning. Furthermore, future studies are required to determine whether fathers resort to distancing more often when they are still trying to accept a child's chronic illness, and to investigate whether stay-at-home mothers are more involved with their child's IDDM and whether their spouses are more distant because they need to compensate. It would also be of interest to assess possible strains in marital relationships caused by children's chronic illnesses. Finally, future studies on the hardships of IDDM should consider child adjustment, too; for instance, how are girls affected by their mothers' greater involvement?

Implications for Nursing Practice

One important finding of this study is that mothers seem to be more involved in their child's illness than fathers. How can fathers become more involved in relation to the sex of the child with IDDM? This study sheds light on the finding that mothers resort to more coping strategies when the affected child is a girl. What about boys? How does IDDM affect parents' perception of stress, the meaning they attribute to the illness, and, consequently, their coping efforts when diabetes affects their daughter versus their son?

Pediatric nurses dealing with the family of a child with IDDM need to be aware of issues related to sex in order to better address the developmental needs of each child while taking into consideration mothers' and fathers' concerns and vulnerabilities. Another important finding highlighted by our within-couple analysis is that fathers more frequently use distancing as a coping mechanism. How can nurses work with the couple to increase marital support and facilitate greater involvement on the father's part? What role do nurses really play when it comes to intervention in the homeostasis of the family? These are important clinical issues that need to be addressed. Perhaps the familial system is functional with the mother's increased involvement, but the father's involvement remains crucial because he provides emotional and/or instrumental support (i.e., provision of technical information about the disease) to his spouse in her daily care for the child with IDDM. Health care providers in general, and nurses in particular, need to be aware of this issue. Developing a trusting relationship

between the medical staff and the father as soon as possible before discharge from the hospital after the initial diagnosis of IDDM would be helpful in encouraging him to become more involved in the child's health care. Furthermore, because parents reported frequently seeking social (namely, medical) support, nurses working with families dealing with IDDM should be sensitive to such parental coping as they are the major providers of medical information and/or support. Parents also need concrete assistance from the medical team to help them to maintain a positive outlook regarding the child's illness.

In summary, when a crisis occurs with a child with IDDM, it is often the nurses who are at the forefront in dealing with the parents, answering their questions, and dealing with their anxieties. Nurses who deal with families coping with IDDM play a key role in empowering parents to effectively deal with their child's diabetes. Later on, nurses can assist parents in educating their growing child to take control over his or her illness.

Using Lazarus and Folkman's transactional model of stress and coping, this study provides insight into some of the coping strategies used by parents when dealing with their child's IDDM. Lazarus' model emphasize the transactional nature of the relationship between cognitive appraisal of stress and the choice of coping strategies, on one hand, and the stressful encounter on the other hand. Such a conceptual frame is appealing when examining the coping strategies of parents, but it does not do justice to the complexity of the phenomenon of coping with a child's chronic illness. Lazarus' model of coping would benefit from an integration with concepts borrowed from a systemic family approach (i.e., homeostatic regulation). Only then can coping processes in parents be more fully understood. Parents' coping stems from, takes place in, and is oriented toward personal adaptation as well as the adjustment of the whole family system. Results pertaining to the issue of complementarity and/or similarity of coping strategies in couples would take their full meaning in the context of such an integrative conceptual framework.

CONCLUSION

The results of our study suggest that some parents of children with IDDM use the same coping strategies as parents facing other childhood chronic illnesses. Like mothers of children with cancer and cystic fibrosis, mothers of children with IDDM use more planful problem solving and less distancing than fathers. In dealing with IDDM as well as in coping with cancer and cystic fibrosis, parents try to remain optimistic, continue to hope for a medical cure, accept the child's illness, minimize the illness, and maintain usual family activities. Thus, this study may have similar implications for nursing practice in the context of other childhood chronic illnesses. Intervention targeted either at the child or at one of his or her parents may affect the psychomedical coping of the child as well as the psychological coping of the parent. In dealing with parents or with the ill child directly, it is important to bear in mind the complex ties that link all the family members. In other words, the whole family suffers from the chronic illness affecting the child. Therefore, efforts should be made to encourage the entire family to develop and mobilize strategies that will optimize personal and family adjustment.

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