

# Family and friend support for adolescents with diabetes (\*)

*ANNETTE M. LA GRECA (\*\*)*  
*KRISTEN M. THOMPSON (\*\*)*

Insulin-dependent diabetes mellitus (IDDM) is a chronic disease with a complex and intensive treatment regimen that includes multiple daily insulin injections and frequent monitoring of blood glucose levels, in addition to lifestyle adjustments such as meal planning and exercise (Davidson, 1986). Given the difficulties of daily diabetes management, efforts to support optimal self-care behaviors are essential for preventing serious disease-related complications, such as retinopathy and renal disease (Diabetes Control and Complications Trial, 1993).

Despite the advantages of good diabetes management, treatment adherence is a serious problem for adolescents (Anderson et al., 1990; Jacobson et al., 1987; Johnson, Silverstein, Rosenbloom, Carter, & Cunningham, 1986; Johnson, Freund, Silverstein, Hansen, & Malone, 1990; La Greca, Follansbee, & Skyler, 1990). Thus, understanding factors that may promote or enhance treatment adherence among adolescents with diabetes is a critical area for pediatric re-

search, that would have important implications for health care interventions.

In light of this, social support from family and friends appears to be an especially encouraging avenue for study. Considerable research has highlighted the importance of social support for adults with chronic illness (see Cohen & Wills, 1985; Sarason, Sarason, & Pierce, 1990). However significantly less attention has been focused on social support among adolescents with chronic disease, and most of the existing studies which have addressed this issue have concentrated primarily on support from parents or family members, with limited attention to support from peers or friends. Thus, the present paper describes two recent investigations that examined the ways that family members and peers provided support for adolescents with diabetes.

## 1. FAMILY AND FRIEND SUPPORT OF DIABETES

Family members, particularly parents, are likely to serve as primary sources of support for adolescents with diabetes. Indeed, studies have found that adolescents with supportive, cohesive families have better disease management and glycemic control (Anderson, Miller, Auslander,

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(\*) Requests for reprints should be sent to: Annette M. La Greca, P. O. Box 248185, University of Miami, Coral Gables, FL 33124-0721, USA.

(\*\*) University of Miami, USA.

& Santiago, 1981; Hauser et al., 1990; Hanson, Henggeler, & Burghen, 1987; Hanson, De Guire, Schinkel, Henggeler, & Burghen, 1992). However, what these studies lack is information on the *specific ways* that family members provide support for various diabetes care activities. This type of information would be very useful to health care professionals in designing appropriate supportive interventions, and was a primary focus of the two studies described below.

In addition to family members, friends play a significant role in adolescents' daily lives. Adolescents spend most of their waking hours with peers, either in school or during leisure activities. In fact, friends rank second only to parents in the amount of emotional support they provide (Cauce, Reid, Landesman, & Gonzalez, 1990; Furman, 1989). Despite the importance of adolescents' friends, little attention has been devoted to understanding the ways that friends provide support for adolescents with a chronic illness (see La Greca, 1990; Spirito, DeLawyer, & Stark, 1991). This lack of attention may reflect an unfortunate tendency to view peers as barriers to, as opposed to promoters of, good health practices (e.g., Chassin, Presson, Sherman, Montello, & McGrew, 1986; Gross, Johnson, Wildman, & Mullet, 1981).

Prior research on peer relations has revealed that youngsters with diabetes are concerned about the effect of their disease on their friendships. For example, Jacobson and colleagues (1986) found that 55% of newly-diagnosed children and adolescents with diabetes did not talk about diabetes with their friends, and 35% reported thinking that their friends would like them better if they did not have diabetes. Youngsters who are reluctant to discuss their diabetes with friends may be preventing themselves from obtaining peer support for their diabetes care. To our knowledge, the studies described below are the first to systematically examine the *specific ways that adolescents' friends provide support for their diabetes.*

## 2. THE PRESENT STUDIES

Because very little is known about the specific ways family members and friends provide support for adolescents' diabetes, two studies were

conducted to specifically examine these sources of support. Each study focused on a different population of adolescents. In Study I (La Greca et al., 1995), 74 adolescents from middle-income families were interviewed during routine visits for their diabetes care in a university-based medical center. In Study II (Thompson, La Greca, & Shaw, 1996), 62 adolescents from an *ethnically-diverse, low-income clinic* that was based in a university medical center were interviewed during routine medical appointments. In each of these samples, the primary goal was to describe, from the adolescents' perspective, the ways that family members and friends provided support for their diabetes care.

In each sample, we first examined the extent to which adolescents reported *at least some degree* of support from family members and friends for their diabetes care. We also compared the amount and types of support adolescents' friends and family members provided. Although we expected family members to provide more support overall for diabetes care than friends, the types of support families and friends provide might differ (Berndt, 1989; Cauce et al., 1990). We also compared levels of family and friend support for the two samples, to evaluate whether there were any major differences in support for diabetes care as a *function of youngsters' socio-economic status.*

Structured interviews provided detailed descriptions, from the adolescents' perspective, of the types of behaviors family members and friends performed that they found to be supportive. Adolescents were questioned about several aspects of their diabetes care (insulin shots, blood glucose monitoring, eating proper meals, exercise), and also asked what their family members or friends did to help them «feel good about their diabetes» (i.e., emotional support). These tasks represent the cornerstones of diabetes management (Davidson, 1986).

## 3. METHOD

### 3.1. *Participants*

**Study I.** Participants were 29 girls and 45

boys with IDDM; their average age was 14.2 years (range = 11-18 years), and their average duration of diabetes was 5.2 years (range = .5 to 14 years). The ethnic composition of the sample was 83.8% Caucasian, 10.8% African-American; 1.4% Hispanic, and 4.0% Asian-American. (See La Greca et al., 1995, for a detailed description.)

**Study II.** Participants were 31 girls and 31 boys with IDDM; their average age was 14.9 years (range = 12-19 years), and their average duration of diabetes was 5.1 years (range = .4-17 years). The ethnic composition of the sample was 58.1% Hispanic, 35.5% African-American and 4.8% Caucasian. (See Thompson et al., 1996, for a detailed description of the study and methods.)

### 3.2. Interview Measure of Social Support

In each study, the *Diabetes Social Support Interview (DSSI)* was administered<sup>1</sup>. The DSSI was developed to assess adolescents' reports of support received from family members and friends for their diabetes care (see La Greca et al., 1995); both *qualitative* and *quantitative* information is obtained. Adolescents were asked five questions pertaining to support from family members, and five pertaining to support from friends. *Family* support was assessed by asking adolescents: «*In what ways does your family help you or provide support for...*» four diabetes care tasks (insulin shots, glucose testing, sticking to a meal plan or diet, and exercising regularly). The fifth question pertained to diabetes-specific emotional support: «*In what ways does your family help you to feel good about your diabetes?*» Adolescents were asked the same questions as they pertained to friends.

A. *Quantitative Coding.* After each response, adolescents rated *how often it occurred* (1 = less than twice a month; 2 = twice a month, 3 = once a week, 4 = several times a week, 5 = once a day or more) and *how supportive* the behavior was

(1 = a little supportive, 2 = supportive, 3 = very supportive). For each response, these two ratings were multiplied, so that higher scores reflected more frequent *and* more positive perceived support. Scores for an individual response could range from 1 to 15; if an adolescent did not provide a response to a particular question, or indicated that «no support» was received, the score for that question was 0.

Separate support scores were calculated for each of the five family and five friend tasks (i.e., Family-Insulin; Family-Glucose; Family-Meals; Family-Exercise; Family-Emotions; Friends-Insulin; Friends-Glucose; Friends-Meals; Friends-Exercise; Friends-Emotions) by summing the scores for the individual responses. In addition, overall levels of support from family members (DSSI-Total Family) and from friends (DSSI-Total Friends) were calculated by summing the five questions' scores for family members and for friends, respectively.

B. *Qualitative Coding.* Descriptive categories were established to capture the nature of the adolescents' responses<sup>2</sup>. First, based on pilot testing, 17 categories were used to classify the adolescents' responses (see Table 1). Next, the specific categories were grouped within the four broad types or functions of social support that have consistently emerged in the literature (e.g., Cauce et al., 1990; Cohen & Wills, 1985). (See Table 1.) These four general support functions are: *Tangible or Instrumental aid* (i.e., providing services or resources necessary for diabetes management); *Informational* support (i.e., giving advice or information); *Companionship/ Belonging* support (i.e., behaviors that reflect shared activities, or accommodating one's activities to another's needs); and *Emotional* support (i.e., behaviors that help the person to feel good; that are esteem-enhancing). Average interrater reliabilities for these four general support types were .95 or higher.

<sup>1</sup>A copy of the Diabetes Social Support Interview can be obtained from the first author.

<sup>2</sup>A copy of the manual which provides additional details for administering and scoring the DSSI can be obtained from the first author.

TABLE 1  
*Diabetes Social Support Interview: General Support and Specific Support Categories*

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**I. Tangible or Instrumental Support.**

The family member or friend «does things» for the adolescent that are part of the diabetes regimen or related tasks to make them all consistent?

This can vary from actually doing the task, to helping or assisting in some manner.

1. *Do For.* Doing the task for the person (e.g., «gives me an insulin shot»).
2. *Help Out.* Assisting or helping out with some aspect of the diabetes regimen, though not to the point of taking over the task (e.g., «buys me glucose testing supplies»).
3. *Help Out - Insulin Reactions.* Helping out or having the knowledge to help out if necessary when the child/adolescent has an insulin reaction or low blood glucose.
4. *Reminding.* Reminding the child/adolescent to perform a self-care task. It should precede the task (e.g., «tells me to take insulin»), rather than following it (e.g., «tells me I ate too much»).
5. *Monitoring.* Checking up on a task to see if it has been done, or to find out what the outcome was (e.g., «How were your sugars today?»). This is done in a neutral manner.
6. *Nagging/Intrusive Facilitation.* Helping the child/adolescent with the regimen in a way that could be perceived as negative (e.g., «nagging» or «insisting» the person test, exercise, or eat better).

**II. Informational Support.**

Offering information or advice about diabetes care. This is mainly done by:

7. *Provide Information.* Giving advice or suggestions on diabetes care (e.g., «gives me things to read», «suggests ways to get exercise»).

**III. Companionship/Belonging/Mutuality.**

Behaviors that reflect mutuality in the relationship or in the approach to diabetes care. The best example is doing something with someone, so that both share the activity (e.g., eating the same meals). Also included are efforts to adjust one's schedule or lifestyle to take into account the needs of the child/adolescent with diabetes.

8. *Do With.* Participate in a diabetes care activity as if it were one's own choice (e.g., «we eat the same meals», «they exercise one»).
9. *Cooperate.* Accommodate one's schedule to the diabetes regimen. Compared to «Do With», it falls short of adopting the regimen as if it were one's own, but still reflects an accommodation to the person's regimen (e.g., «my friends change their schedule so that I can take my shots on time»).

**IV. Emotional Support/Esteem Enhancing Support.**

Emotional support or encouragement for diabetes, or showing sensitivity to the person's feelings about diabetes. The intent is to make the person feel good about diabetes care or about themselves.

10. *Praise/Encouragement.* Praise or encouragement for self-care efforts (e.g., «mom encourages me to exercise more», «they tell me that I'm doing well»).
11. *Acceptance.* Accepting the adolescent as he/she is, or helping the child/adolescent to accept diabetes (e.g., «they don't treat me any differently»).
12. *Sensitivity to Feelings.* Actions or words that communicate an understanding of the child/adolescent's feelings about having diabetes or about their self-care.
13. *Positive Outlook.* Helping the child/adolescent feel better by pointing out positive consequences of diabetes, or noting conditions that could be much worse.
14. *Watch.* Watching the child/adolescent with diabetes perform a management task – with the implication that it reflects an interest in the person, or admiration for them (e.g. «when my friends watch me test, I feel like a hero»).
15. *Cheer Up.* Efforts to improve the child/adolescent's mood or feelings about diabetes (e.g., «when I'm feeling bad about diabetes, my friends cheer me up»).
16. *Show an Interest in Diabetes.* Showing an interest in the person with diabetes, such as by trying to learn more about diabetes.
17. *General Support.* Other supportive statements that do not fit into any of the above categories (e.g., «they pray about my diabetes»).

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Adapted from La Greca et al., 1995.

## 4. RESULTS

### 4.1. Descriptions of Adolescents' Social Support

A primary goal of these studies was to understand the ways family members and friends provided support for adolescents' diabetes care. Table 2 lists the percentage of adolescents in each study who gave at least one example of social support for each of the ten interview questions. Across the two samples, the majority of the adolescents reported supportive family behaviors for insulin shots, blood glucose (BG) monitoring, and following a meal plan; a great many also reported family support for exercise and feeling good about diabetes. In contrast, most adolescents reported peer support for meal-related aspects of care, exercising regularly, and for feeling good about diabetes, but fewer reported that their friends supported insulin administration or BG testing. In fact, in the low-income sample (Study II), 24.2% of the adolescents reported no examples of support from their friends, and 11.1% of the adolescents spontaneously indicated that their close friends did not even know that they had diabetes.

In each study, the total number of supportive

responses provided for family members was substantially and significantly higher than the number of supportive responses for friends. Thus, in general, adolescents reported more support from family members than friends for their diabetes care.

Aside from the overall amount of support, *patterns* of support were examined by categorizing adolescents' responses into four general types of support, for each of the five specific diabetes tasks (see Table 3). As is shown in Table 3, the types of support adolescents reported for *insulin administration* and *BG testing* were very similar, and predominantly reflected *tangible* support, both from family members and from friends. For example, parents were described as «giving» or «helping» adolescents with their insulin injections (e.g., «my dad does them in hard to reach spots»). Parents also «helped» their adolescent test blood glucose. Both family members and friends were also frequently described as «reminding» the adolescent when to take shots or test glucose. In addition, friends were described as «helping out» with insulin reactions (e.g., «if I get insulin shock at school, they have candy for me and the numbers to call my doctor»).

For *meal-related aspects* of diabetes care, family support was still largely tangible, but friend

TABLE 2  
Percentage of Adolescents Reporting at Least One Supportive Behavior

Diabetes task/question	SOURCE OF SUPPORT			
	Family Members		Friends	
	Study I	Study II	Study I	Study II
Insulin Administration	98.7	87.1	63.5	35.5
Blood Glucose Testing	96.0	72.6	47.3	25.8
Following a Meal Plan	97.3	88.8	82.4	56.5
Exercising Regularly	83.8	50.0	79.7	53.2
«Feeling Good» about Diabetes	78.4	77.4	85.1	50.0

Note: Study I = La Greca et al., 1995; Study II = Thompson et al., 1996

TABLE 3  
*Comparisons of Types of Support (Percentages) between the Study I and Study II*

Diabetes task/question	SOURCE OF SUPPORT			
	Family Members		Friends	
	Study I	Study II	Study I	Study II
<b>Insulin Administration</b>				
Tangible	93.0	94.1	61.7	92.6
Companionship	1.7	0.0	10.0	<2.0
Emotional	1.7	5.9	25.0	7.4
<b>Blood Glucose Testing</b>				
Tangible	93.0	96.8	64.6	95.2
Companionship	<2.0	<2.0	8.3	<2.0
Emotional	5.2	3.2	22.9	4.8
<b>Following a Meal Plan</b>				
Tangible	72.9	89.9	27.5	78.6
Informational	<2.0	<2.0	<2.0	<2.0
Companionship/belonging	16.5	6.7	61.5	9.5
Emotional	6.8	2.3	7.8	11.9
<b>Exercising Regularly</b>				
Tangible	48.0	57.5	8.7	23.1
Companionship/belonging	26.5	35.0	85.5	74.4
Emotional	20.4	7.5	4.4	2.5
<b>«Feeling Good» about Diabetes</b>				
Tangible	7.0	11.8	7.8	4.8
Informational	<2.0	11.8	<2.0	<2.0
Companionship/belonging	<2.0	2.9	<2.0	17.0
Emotional	88.9	73.5	52.0	78.2

Note: Study I = La Greca et al., 1995; Study II = Thompson et al., 1996

support was also *companionship* oriented, especially among the adolescents in Study I. Family members, usually mothers, were reported to prepare meals for the adolescents and to «re-mind» them of foods they should or should not be eating (e.g., «watches what I eat»). Friends were mostly supportive by adjusting peer activities to the adolescents' eating schedule and accommodating specific food needs (e.g., «they try to eat the same foods I do»).

For *exercise*, support from family members was distributed among *tangible*, *companionship* and *emotional* support. Most often, family

members supported exercise activities by «re-minding» the adolescent or by providing transportation or buying athletic equipment. Family members were also reported to «exercise with» the adolescent, and «praise» and «encourage» exercise activities, as well as «nag» the adolescent to exercise. In contrast, friends' support consisted primarily of *companionship* behaviors, such as sharing various sports activities (e.g., «they go biking with me»).

Finally, for «*feeling good about diabetes*», family members' support primarily reflected emotional support. When examining the specific

subcategories of emotional support, family members were reported to provide substantial «acceptance» of the adolescent (e.g., «they make me feel like everyone else»), to help the teen adopt a «positive outlook» on diabetes (e.g., «they tell me things could be worse»), and to «praise» the adolescent for sticking with the diabetes regimen. Friends' support was oriented toward «acceptance» (e.g., «they don't make me feel different») and «sensitivity to feelings» about diabetes (e.g., «my friends never tease me about my diabetes»).

#### 4.2. Quantitative Analyses

Finally, to complement the qualitative picture provided by the content of responses, the quantitative ratings for adolescents' responses were analyzed. The support ratings for family members and friends are summarized in Figures 1 and 2, and are presented separately for each diabetes task/question.

For each sample of adolescents, ratings of family and friend support were compared using a MANOVA, with *Source* of support (Family, Friends) and *Task* (Insulin, BG Testing, Meals, Exercise, Feeling Good) as within-group factors. In each sample, significant effects for Source, Task, and a Source by Task interaction were obtained. As shown in Figures 1 and 2, differences emerged for family members and friends. In each study, adolescents perceived their families as providing significantly more support than friends for insulin injections, BG testing, and meals (Study I: Insulin:  $F(1,73) = 81.9, p < .001$ ; BG testing:  $F(1,73) = 56.4, p < .001$ ; Meal plan:  $F(1,73) = 39.1, p < .001$ ; Study II: Insulin:  $t(61) = 6.33, p < .0001$ ; BG testing:  $t(61) = 6.43, p < .0001$ ; Meal plan:  $t(60) = 5.75, p < .0001$ ). These differences likely reflect the fact that family members are more actively involved in the daily, routine aspects of diabetes management than peers. However, family members and friends did not differ in reported levels

FIGURE 1  
Level of Support from Family Members and Friends by Diabetes Tasks for Study I

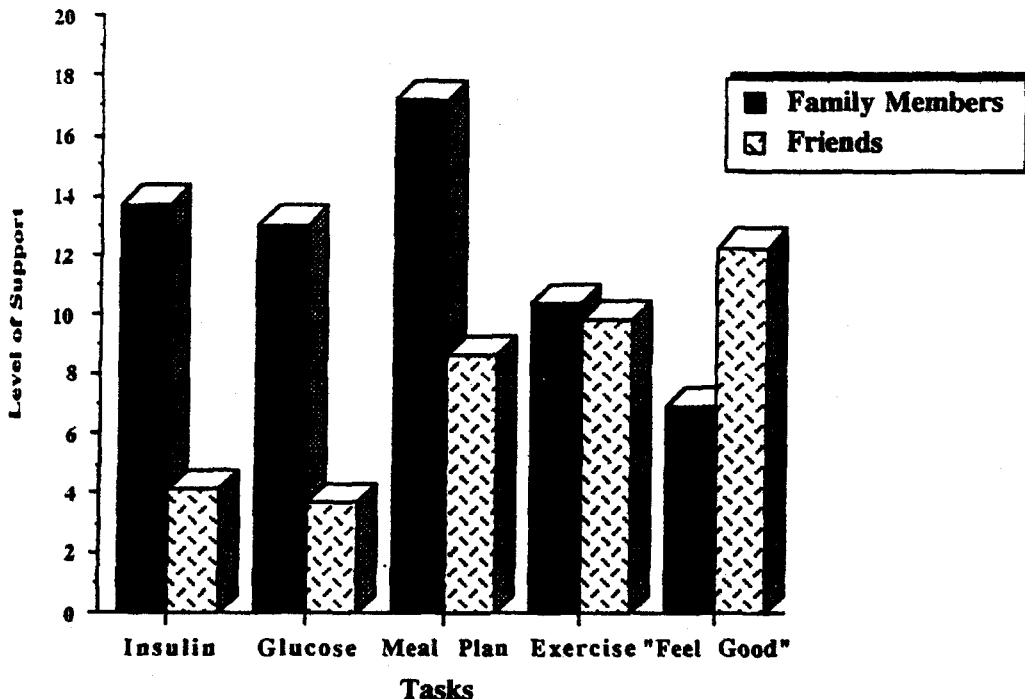
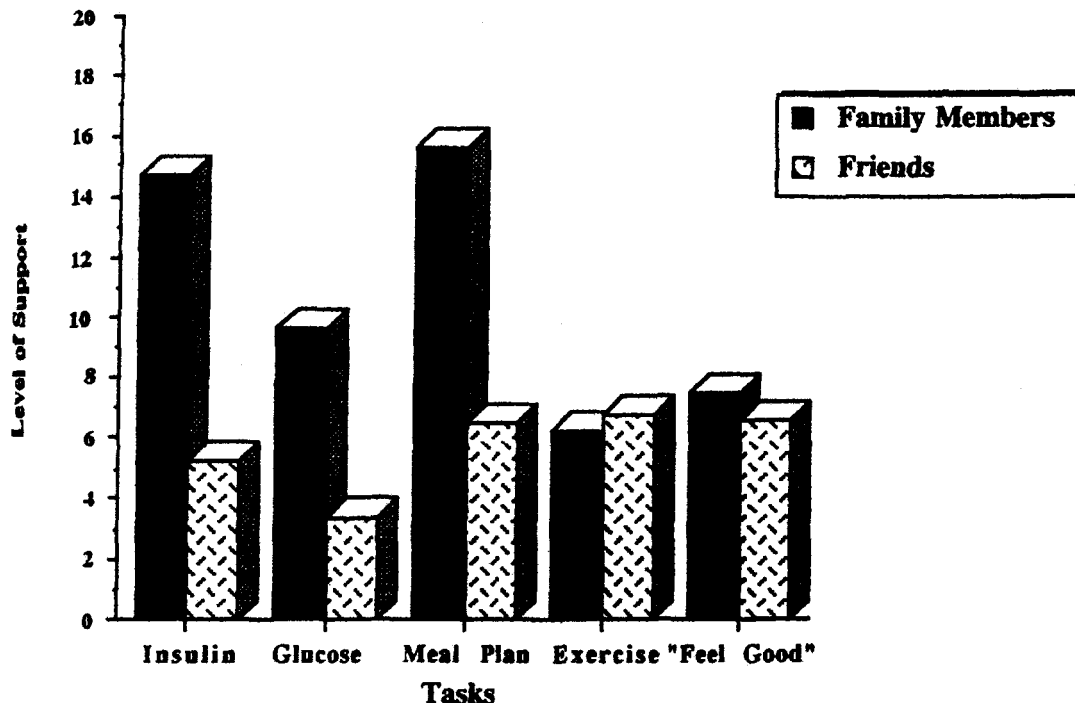


FIGURE 1  
Level of Support from Family Members and Friends by Diabetes Tasks for Study II



of support for exercise. The only key difference in the patterns of responses across the two samples was that, for Study I, adolescents' ratings of friends' support for «feeling good about diabetes» were significantly *higher* than ratings of family members ( $F(1,73) = 7.9, p < .01$ ); for Study II adolescents, family members' support tended to be higher in this area, although not significantly higher. In general, these data closely parallel the qualitative findings regarding the differential support adolescents reported from family members and friends, and again indicate that friends provide an important source of emotional support for adolescents with diabetes, as well as an important source of support for lifestyle aspects of diabetes care, such as exercise.

#### 4.3. Relations Between DSSI and Demographic Variables

One final issue that was examined in each study was the relationship between adolescents'

reports of social support and the demographic variables of age, duration of diabetes, gender, and ethnicity. Only for subjects in Study I did we find that total family support was significantly correlated with age ( $r = -.37, p < .01$ ) and duration of diabetes ( $r = -.26, p < .05$ ), such that younger adolescents and those with a shorter duration of diabetes reported more family support for diabetes care than older adolescents or those with a longer disease duration. For both groups of adolescents, friends' support of diabetes care was unrelated to age or disease duration.

In terms of gender differences, very few significant findings emerged. Among the low-income adolescents in Study II, girls reported more Companionship support from family members than did boys ( $F(1,60) = 4.29, p < .05$ ), but no other gender differences were apparent. Among the adolescents in Study I, the only gender difference was that girls reported more total support from friends than did boys ( $F(1, 73) = 4.69, p < .05$ ).



Finally, ethnic differences were examined in Study II, as this sample included substantial numbers of both Hispanic-American and African-American youth. As with gender, very few ethnic differences were observed. Hispanic-American and African-American adolescents did not differ on the measures of total family and friend support; however, Hispanic-American adolescents reported receiving more *Tangible* support from family members than did African-American youth ( $F(1, 56) = 5.32, p < .05$ ).

## 5. DISCUSSION

To our knowledge, these studies were the first to investigate the specific ways family members and friends provide support for adolescents' diabetes care, within the context of specific diabetes management tasks. Significant differences emerged in the amount and type of diabetes-specific support adolescents' reported receiving as a function of the source (family versus friends) and the task (e.g., glucose testing).

### 5.1. Amount of Support

In both samples of adolescents, family members provided substantially more support for adolescents' diabetes care than did their friends. This is not surprising, in that parents are centrally involved in diabetes management throughout childhood and adolescence (e.g., Anderson et al., 1990; Follansbee, 1989; La Greca et al., 1990). However, adolescents' friends also emerged as important sources of support, especially for emotional and lifestyle aspects of diabetes care.

### 5.2. Type of Support

Of great interest were the findings regarding the types of support provided to adolescents, within the context of different diabetes care tasks. Support from family members was primarily oriented towards *tangible* support, typically in the context of daily management tasks, such as insulin administration or BG monitoring. Family members provided *tangible* support by reminding adolescents of their regimen tasks, helping them with the tasks, and occasionally

doing the tasks for them. Although reported less frequently, the ways that family members provided *emotional* support were largely oriented toward praise and encouragement of self care efforts, conveying a sense of acceptance, and helping adolescents maintain a positive outlook on their diabetes. This was true of adolescents from middle-class socioeconomic backgrounds, as well as those from low-income, ethnically diverse backgrounds.

In contrast with family members, friends provided considerable amounts of *companionship* support, mostly for lifestyle aspects of diabetes (e.g., exercising together, making accommodations to meal plans). In addition, friends provided substantial *emotional* support, which was oriented toward helping the adolescent feel accepted, and showing sensitivity to the adolescent's feelings about having diabetes. In general, these data indicate that friends provide an important source of support for adolescents with diabetes, that is distinct from family support.

Although these patterns of findings for family and friend support were remarkably similar across the two samples, it was also the case that a greater percentage of the low-income adolescents in Study II reported receiving «no support» of any kind from their friends than did those in Study I. In fact, about a quarter of the adolescents in Study II could not provide any examples of support from friends, and almost half of these «no support» teens indicated that their friends were unaware of their diabetes.

These findings suggest a potential area of concern for low-income adolescents. Because friends represent a key source of emotional support for diabetes, adolescents who feel uncomfortable telling their friends about their disease may miss out on a significant source of support for their diabetes care. Most importantly, friends help adolescents with diabetes to feel accepted and show sensitivity to the adolescents' feelings about diabetes. Teens who are reluctant to discuss diabetes with their friends may be limiting their opportunities for peer support. Health care providers may need to be sensitive to this issue, and encourage adolescents to find friends with whom they can share their concerns.

### 5.3. Demographic Variables

In general, few relationships were observed between demographic variables (age, duration of diabetes, gender, ethnicity) and the amount and type of social support adolescents' reported receiving. In fact, the similarity of the results across two very diverse samples of adolescents was striking.

There was some indication, however, that older adolescents received less support from their family members for diabetes care than younger adolescents. This pattern was clearly observed in Study I, with middle-income, predominantly Caucasian adolescents. Because family support was primarily *tangible*, these findings may reflect the greater involvement of parents in the daily management of younger adolescents. As youngsters progress through adolescence, they typically assume a greater share of the responsibility for their diabetes management (Anderson et al., 1990; Follansbee, 1989; La Greca et al., 1990). However, efforts to promote adolescents' independence in diabetes management may have the unintended effect of restricting family support. Given the difficult and demanding treatment regimen for diabetes, a more sensible approach may be to encourage adolescents to gradually assume greater independence in their diabetes care, while also maintaining some degree of active family involvement.

One other noteworthy finding was that Hispanic-American adolescents reported more *tangible* support from family members than did African-American adolescents. Thus, although no significant differences were found in the amount of support provided by Hispanic-American and African-American family members, differences emerged in the manner in which such support is delivered. These results suggest that Hispanic-American family members may take a greater «hands on» approach to supporting adolescents with their diabetes care than do African-American family members.

These findings notwithstanding, overall the results were remarkably similar for the various ethnic groups studied. This indicates that few differences exist in the amount and type of social support provided by family members and friends across the various ethnic groups examined. While further research needs to be conducted in

order to replicate and confirm such findings, in general, adolescents from diverse ethnic backgrounds appeared to be receiving considerable social support from both family members and friends for their diabetes care.

### 5.4. Clinical Implications of the Findings

So, what do the findings of the two studies suggest with regards to understanding adolescents support for their diabetes care? And, how can these findings be used by health care professionals?

First, it appears that peer companionship is important for lifestyle aspects of diabetes care, such as exercise or meal planning. This means that health care professionals should make a concerted effort to understand the kinds of friends adolescents have. Specifically, if adolescents have friends who hold lifestyle values that are consistent with their diabetes treatment (e.g., who eat healthy and exercise regularly), their diabetes management might be facilitated greatly. On the other hand, if adolescents have friends whose behaviors are inconsistent with good health practices (e.g., who eat a lot of fat and sugar, smoke, drink, or are sedentary), they may find it increasingly difficult to follow their diabetes treatment regimen. Along these lines, it has been noted that adolescents' peer groups have been influential in certain health-related behaviors, such as smoking (Mosbach & Leventhal, 1988). Consequently, the types of peers with which adolescents spend time may also strongly influence their diabetes care, namely the lifestyle aspects of their care.

Second, although friends provided significantly less *tangible* support than family members, and less support for insulin shots and BG testing than for other management tasks, nonetheless, friends were shown to play a role in providing some *tangible* support for these daily tasks. This source of support may be surprising to some health care professionals. Adolescents reported their friends often reminded them to test their BG or to take insulin, and helped out when they could be having an insulin reaction. These are specific ways that adolescents' friends aid with their diabetes care in situations that are likely to occur *outside the home environment*. This is valuable information, as most adolescents spend a

significant amount of time away from home, such as in school or in activities with friends. Perhaps health care providers should urge adolescents to discuss their diabetes with their friends, and help to educate adolescents' friends about diabetes. Supporting greater participation from friends may also alleviate some of the stress that family members experience in caring for diabetes (Kovacs et al., 1990).

Third, the findings point to the need for keeping family members involved, in a supportive manner, with adolescents' diabetes care. As discussed above, health care providers typically encourage adolescents to assume increasing levels of responsibility for their diabetes management (Follansbee, 1989). However, it may be essential to encourage adolescents to increasingly assume responsibility for their diabetes care, while also keeping family members actively involved. For instance, family members could assist with self-care efforts, even though the primary responsibility for management shifts to the adolescent. Family members could also share meals and exercise with the adolescent, or provide praise and emotional support for self-management efforts. However, because the specific behaviors adolescents find supportive may differ from one teen to the next, input from the adolescent will be critical for identifying ways for family members to remain involved and supportive. The issue is not whether family members should be involved, but *how best* to keep them involved in a supportive manner.

Finally, a structured interview (DSSI) was designed to gather information on support for diabetes care *from the adolescent's perspective*. This provides an important view of the specific ways family members and friends provide support. The DSSI allowed adolescents to indicate what *they* found to be supportive, rather than having them respond to *a priori* notions of support. Along these lines, it was interesting to observe that responses such as «nagging» were reported by some of the adolescents to be *supportive* (mainly for BG testing and following a meal plan), even though «nagging» is considered to be *nonsupportive* on the Diabetes Family Behavior Checklist (Schafer et al., 1986). This means that it is critical for health care providers to obtain the adolescent's perspective when trying to identify supportive behaviors. Indeed,

the diversity of behaviors that adolescents found supportive for their diabetes care cautions against making general recommendations to parents or friends without obtaining input from the adolescent. Some types of support may be viewed positively by some teens and negatively by others.

### 5.5. Conclusions

In conclusion, despite the need for continued research in this area, our two investigations offer several contributions. The most prominent is that *both* family members and friends appear to be important and complementary sources of support for adolescents with diabetes. Thus, keeping family members actively and supportively involved in adolescents' diabetes care seems critical for good treatment management. The importance of family involvement was apparent for adolescent of varying socioeconomic levels and diverse ethnic backgrounds.

In addition, the findings from these two studies indicate that health care professionals should consider ways to educate and recruit adolescents' friends as sources of *companionship* and *emotional* support for diabetes care. Research has consistently shown adolescents to be the most difficult of all age groups for achieving good treatment adherence and satisfactory glycemic control. Given the importance of glycemic control for preventing and forestalling the adverse health consequences of diabetes, efforts to involve friends and family members in a supportive manner may be invaluable in helping adolescents successfully manage the challenges of a difficult chronic disease.

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## ABSTRACT

The present paper describes two studies of social support provided by family members and friends for adolescents' diabetes care. Using a structured interview, 74 middle-income and 62 socioeconomically disadvantaged adolescents with diabetes described the ways that family members and friends provided support for several aspects of diabetes care (insulin shots, blood glucose monitoring, eating proper meals, exercise, and «feeling good about their diabetes»). In both samples, family members provided more support than did friends for diabetes care, especially for daily management tasks; friends provided considerable emotional support for diabetes. Few differences in support levels were observed as a function of the adolescents' socioeconomic status. However, more of the low-income adolescents had friends who did not provide any support for their diabetes care. Implications of the findings are discussed with respect to encouraging parents to remain involved in adolescents' treatment, and involving peers as supportive companions for the lifestyle aspects of adolescents' diabetes care.

*Key words:* Adolescents, family support, peer support, diabetes care, adherence, friends.

## RESUMO

Este artigo descreve dois estudos sobre o apoio social de familiares e amigos a adolescentes com diabetes. Através de entrevistas estruturadas, 74 adolescentes de classe média e 64 de classe socio-económica desfavorecida descrevem o apoio recebido em vários aspectos do tratamento da diabetes (injecções de insulina, análises da glicémia, alimentação adequada, exercício e no «sentir-se bem com a diabetes»). Em ambas as amostras, os familiares deram mais apoio nos tratamentos do que os amigos, especialmente nas tarefas quotidianas; os amigos deram sobretudo um apoio emocional considerável. Foram reduzidas as diferenças aos níveis de apoio em função do estatuto socio-económico dos adolescentes. No entanto, os adolescentes desfavorecidos tinham mais amigos que não davam apoio no tratamento da diabetes. Discutem-se as implicações dos resultados no sentido de encorajar os pais a participar no tratamento dos adolescentes, e de envolver os pares como companheiros que podem dar um apoio importante nos aspectos da vida social social mais afectados pela diabetes.

*Palavras-chave:* Adolescentes, apoio familiar, apoio dos pares, tratamento da diabetes, aderência, amigos.