Published in final edited form as:

J Child Health Care. 2011 September ; 15(3): 199–209. doi:10.1177/1367493511406567.

Parenting goals: Predictors of parent involvement in disease management of children with type 1 diabetes

Elizabeth M Robinson,

Department of Clinical Psychology, Virginia Commonwealth University, USA

Ronald J Iannotti,

Prevention Research Branch, Eunice Kennedy Shriver National Institute of Child Health and Human Development, USA

Stefan Schneider,

Department of Psychology, Stony Brook University, USA

Tonja R Nansel,

Prevention Research Branch, Eunice Kennedy Shriver National Institute of Child Health and Human Development, USA

Denise L Haynie, and

Prevention Research Branch, Eunice Kennedy Shriver National Institute of Child Health and Human Development, USA

Douglas O Sobel

Department of Pediatrics, Georgetown University School of Medicine, USA

Abstract

The purpose of this study was to develop a measure of diabetes-specific parenting goals for parents of children with type 1 diabetes and to examine whether parenting goals predict a change in parenting involvement in disease management. An independent sample of primary caretakers of 87 children aged 10 to 16 years with type 1 diabetes completed the measure of parenting goals (diabetes-specific and general goals); both parent and child completed measures of parent responsibility for diabetes management at baseline and 6 months. Parents ranked diabetes-specific parenting goals as more important than general parenting goals, and rankings were moderately stable over time. Parenting goals were related to parent responsibility for diabetes management. The relative ranking of diabetes-specific parenting goals predicted changes in parent involvement over 6 months, with baseline ranking of goals predicting more parental involvement at follow-up. Parenting goals may play an important role in family management of type 1 diabetes.

Keywords

diabetes; parenting; adolescent; chronic illness

© The Author(s) 2011

Corresponding author: Ronald J Iannotti, Staff Scientist, 6100 Executive Blvd., Rm. 7B13Q, MSC 7510, Bethesda, MD 20892, USA, iannottr@mail.nih.gov.

Introduction

As type 1 diabetes mellitus (T1DM) is usually diagnosed during childhood, the burden of diabetes management typically falls on both children and parents (Anderson et al., 1997). However, few families are able to maintain metabolic control within the recommended guidelines (Grey et al., 2000). Previous research on general family functioning and diabetes management suggests that parenting behaviors may be important in facilitating healthy adaptation to diabetes (Grey et al., 2000; Hamilton and Daneman, 2002; Wysocki, 1993) and parent involvement may be essential for successful diabetes management (Ellis et al., 2007; Grey et al., 2001; Skinner et al., 2005).

Parenting goals organize and affect, and presumably guide, parent cognition and behavior during interactions with children (Dix, 2002; Hastings and Grusec, 1998; Kuczynski, 1984; Pervin, 1989). Parenting goals have been shown to direct parental behavior and affect parenting strategies, parent-child communication, and subsequent child behavior (McPherson, 2009; Mounts and Kim, 2007). For example, parents use different strategies when they have long-term goals, such as health and safety, as opposed to short-term goals; for long-term goals, parents are more conscious, deliberate, and cognitive in their socialization strategies (Dawber and Kuczynski, 1999; Kuczynski, 1984). Children presented with long-term goals by their parents were more compliant when their parents were nurturing and conveyed reasoning behind the goals (Kuczynski, 1984). Three long-term general parenting goals are: (1) the physical safety and health of a child; (2) promoting a child's ability for self-maintenance; and, (3) the development of a child's values, whether pertaining to culture, religion, family, or intellectual achievement (Dix and Branca, 2003). Other general parenting goals that have been identified include: being loyal to one's family; following family routines; achieving at school; being popular among friends; being happy; and, respecting cultural traditions (Dix and Branca, 2003). By middle-to-late childhood, children with T1DM share responsibility for diabetes management with their parents and, as they move through adolescence, have increasing responsibility for self-care (Anderson et al., 1990). As such, parental goals for their children with T1DM should include goals that are specific to issues around diabetes management. One aim of this paper is to develop a measure of parenting goals tailored to parents of children with T1DM. Such diabetes-specific parenting goals may encourage consistent long-term adherence to a daily regimen from which even brief lapses can have adverse outcomes (Plotnick, 1994).

Diabetes-specific parenting goals, such as having their child maintain blood glucose levels within a physician-recommended target range, may be in conflict with broader child development goals, such as having their child enjoy a normal childhood. Most studies of families with children with T1DM focus on diabetes management, not general development. We know little about general parenting goals of families with children with T1DM. Parents typically want everything for their child but must set priorities. How parents rank general versus diabetes-specific parenting goals could indicate whether normal social, emotional, and cognitive development is affected by parents having to prioritize diabetes management goals over general goals (Grusec et al., 2000). Given that parents do not treat all goals with the same importance, there is good reason for assessing how parents prioritize or rank disease-related and general developmental goals within a single measure (Grusec et al.,

2000). It is the tension between general and diabetes priorities that differentiate parenting goals. It is important to know how families deal with this tension and how they accommodate potentially conflicting priorities of parenting focused on the developing child versus the demands of a chronic illness. Therefore, a second purpose of this paper is to examine how parents prioritize diabetes-specific parenting goals versus general parenting goals.

Some have suggested that family goal-setting is an essential component of diabetes management (Delamater, 2009). If true, parenting goals should influence parenting behavior with regard to diabetes management. However, little is known about the impact of parenting goals on parent behaviors in the context of a pediatric chronic illness, such as T1DM (Marteau et al, 1987). Parent involvement in diabetes-related tasks has not only been associated with better self-care behavior and metabolic control in children with T1DM, but also with better psychological health. The question remains, however, as to whether diabetes-specific parenting goals influence parent involvement in diabetes management or are merely a contemporaneous correlate of parent involvement. Thus, a third aim of this paper is to examine whether diabetes-specific parenting goals are related to subsequent parent involvement in diabetes management.

Existing measures of parenting goals have largely been comprised of open-ended interviews which do not allow for objective comparison across participants and goal types. We developed a forced-choice instrument for assessing parenting goals for late childhood and early adolescence, including both general parenting goals and goals specific to the management of T1DM. Evaluation of the measure included examining the stability of these goals over time. Further, we analyzed: (1) how parents rank-ordered general and diabetes-specific goals; and, (2) whether relative priority parents give to diabetes-specific parenting goals predict 6-month longitudinal change in parent involvement in diabetes management.

Methods

Phase I: Parenting goals assessment development

Parental goals common to most parents were identified from the literature (Dix and Branca, 2003; Hastings and Grusec, 1998; Kuczynski, 1984). Pediatric endocrinology clinic staff was interviewed about treatment goals for diabetes management. Formative semi-structured interviews were conducted with nine parent-child dyads (children aged 8 to 18 years, 5 males and 4 females) recruited through a diabetes support network; participants provided written consent (or assent in the case of young children). Interviews were transcribed and parental expectations and goals for both normal development and diabetes management were identified. From all of these sources, a list of general parenting goals and non-redundant diabetes goals was created. Apriority was placed on representing all essential areas of general parenting goals and diabetes-management goals, rather than reducing the number of items to create an artificial balance in the number of goals for each. The items were reviewed by a panel, including developmental and counseling psychologists to eliminate redundancy, assure relevance to early- and mid-adolescents, and to capture all essential general and diabetes-management parenting goals. The final list of 25 items included 16 general parenting goals and 9 diabetes management goals. General parenting

goals included items such as: “Achieve at school” and “Follow moral or religious values.” Diabetes-specific goals included “Maintain HbA1c below 8.0%” and “Accept responsibility for his/her diabetes management.”

Research has shown that there are common goals endorsed by all parents across cultures (Dix, 2002; Dix and Branca, 2003; Hastings and Grusec, 1998; Kuczynski, 1984; Pervin, 1989), indicating that, unless the assessment is structured to necessitate choice, parents will strongly endorse all general and diabetes-specific goals. Therefore, a Q-sort procedure (Baron, 1996; Vaughn et al., 1988) was used to force parents to indicate how they would prioritize potentially conflicting goals, paralleling similar decisions during family management of adolescent diabetes. Each goal was printed on an index card and presented to parents in a standard order that intermingled general and diabetes specific goals. Parents were asked to place only five goals in each of five envelopes labeled: “Most Important;” “Very Important;” “Important;” “Less Important;” and, “Least Important.” This scale was administered to an independent sample of 9 parents using the Q-sort technique. Following cognitive interviews with these parents, wording of instructions and items was finalized.

Phase II: Measure evaluation

Children aged 10 to 16 years ($M = 12.9$, $SD = 2.0$) diagnosed with T1DM for at least one year and the parent who was identified by the family as having primary responsibility for their diabetes management were recruited from an urban pediatric endocrinology clinic. Patients were excluded from the study if they were diagnosed with an additional major chronic illness (except for well-controlled asthma or thyroid problems), or if youth or parent were non-English speaking/writing. Of 120 families contacted, 87 agreed to participate and completed the assessments. One parent-child dyad was excluded from analysis as a result of missing data. Thus, 86 families were included in the baseline analysis (47 females and 39 males). Of these 86 dyads, 80 (93%) completed follow-up assessments at 6 months. There were no significant differences in descriptive variables between participants who completed follow-up assessments and those lost to follow-up.

Procedures

Parents provided written informed consent and youths provided written assent. All assessments were administered by trained interviewers and completed in the home or another convenient location selected by the parent. Assessments were administered at baseline and were repeated 6 months later. Each participant (parent and youth) was given an incentive of \$25. Institutional Review Board approval was obtained from all institutions involved.

Measures

Subject characteristics—Patient age and gender were obtained from medical records. Parents provided information about age of diagnosis, diabetes regimen, race/ethnicity, family composition and socioeconomic status.

Parenting goals—Parents were instructed to complete the task according to his or her own personal parenting goals, not reflecting those of a secondary caregiver, and for their

child with diabetes who was participating in the study, not their children in general. Each goal was assigned a score of 1 (least important) to 5 (most important) depending on the envelope into which it was placed by the parent. Mean rankings for each of the 25 goals were examined. In addition, separate summary scores for the 16 general goals and 9 diabetes-specific goals were calculated. Use of the Q-sort method with forced distribution of responses precluded use of traditional measures of internal consistency (Baron, 1996). Stability over 6 months is reported below.

Parent responsibility for diabetes management—The extent of parent responsibility for 40 diabetes management activities from the Diabetes Independence Survey (Wysocki et al., 1996) and the Diabetes Behavior Rating Scale (McNabb et al., 1994) was reported by both parent and youth. For each task, parent and youth reported “whose job it is in your family to see that it is done” on a 5-point scale from “It’s all my job” to “It’s all my (parent’s/child’s) job.” The scale was scored to indicate the extent to which a parent had responsibility for the child’s diabetes management.

Analysis plan

Descriptive statistics were calculated for all measures. Analytic procedures for comparing individual items within ipsative measures are limited (Baron, 1996); however, paired samples t-tests permit comparisons of rankings of general versus diabetes-specific parenting goals at baseline and at 6 months. Spearman correlation was used to examine the stability of parenting goals over time.

Mean rankings for the diabetes-specific parenting goals permitted analyses of whether the relative importance of these goals predicted subsequent parent involvement or whether parent involvement predicted subsequent goals. In order to examine prospective relationships between parenting goals and parent diabetes management involvement, parent involvement at 6 months was regressed on the mean priority given diabetes-specific goals at baseline, controlling for parent involvement at baseline. In addition, parenting goals at 6 months were regressed on parent involvement at baseline, controlling for parenting goals at baseline. These models indicated the degree to which diabetes-specific goals predicted changes in parent involvement and the degree to which parent involvement predicted changes in diabetes-specific goals. Because parental involvement in diabetes management is related to the child’s age, gender, and duration of illness (Anderson et al., 1997), these were controlled in multiple regression analyses.

Results

Parenting goals demographic characteristics of the baseline and 6-month samples are reported in Table 1. The sample was 76.7 % white, which is representative of the clinic population from which it was drawn.

Parenting goal priorities

At baseline, diabetes-specific goals ($M = 3.48$, $SD = 0.49$) received a significantly higher average ranking by parents than did general goals ($M = 2.73$, $SD = 0.27$, $t(85) = 9.14$, $p <$

0.001). Two goals received the highest mean ranking: “Accept responsibility for his/her diabetes management” ($M = 4.22$, $SD = 0.99$), a diabetes-specific goal which 50.6% of parents ranked as most important; and “Take good care of his/her health” ($M = 4.22$, $SD = 0.80$), a general goal, although closely related to diabetes care, which 42.5% of parents ranked as most important. Goals receiving the two lowest mean rankings were “Be popular with friends” ($M = 1.30$, $SD = 0.58$) and “Follow our family routines” ($M = 1.70$, $SD = 0.87$), for which 73.6% and 50.6% of parents ranked as least important respectively. A list of parenting goals ranked by mean score at baseline is presented in Table 2.

Stability of diabetes-specific parenting goals

Average ranking of diabetes-specific goals was moderately stable over 6 months ($r = 0.57$, $p < 0.001$). At 6 months, diabetes-specific goals ($M = 3.53$, $SD = 0.54$) consistently received a significantly higher average ranking than general goals did ($M = 2.70$, $SD = 0.30$, $t(79) = 8.82$, $p < 0.001$).

Parenting goals predicting parent responsibility for diabetes management

Parent responsibility for diabetes management—The measure of parent responsibility for diabetes management had good internal consistency (Cronbach’s alpha for youth report = 0.93; parent report = 0.93). Child and parent reports of parent responsibility for diabetes management were positively correlated at both time points: baseline ($r = .63$, $p < 0.001$) and 6 months ($r = 0.71$, $p < 0.001$). Therefore, to avoid problems with collinearity and to reduce respondent bias as a source of measurement error, a mean of parent and child report was used to indicate parent responsibility for diabetes management (Baranowski, 1985).

Bivariate analyses—Correlations among demographic and primary study variables at 6 months are presented in Table 3. Baseline diabetes-specific goals ($M = 3.48$, $SD = 0.49$) were not significantly correlated with parent responsibility for diabetes management at baseline ($M = 2.77$, $SD = 0.58$, $r = 0.18$, $p > 0.05$), but diabetes-specific goals at baseline were significantly related to parent responsibility for diabetes management at 6 months ($M = 2.65$, $SD = 0.60$, $r = 0.27$, $p < 0.05$).

Parent responsibility for diabetes management—Regression analyses were conducted to determine whether diabetes-specific parenting goals at baseline predicted subsequent changes in parent diabetes management involvement 6 month later. Regression analysis indicated that baseline diabetes-specific goals significantly predicted parent responsibility for diabetes management at 6 months ($\beta = 0.10$, $p < .05$) after controlling for age, duration of diagnosis, and baseline parent responsibility. To explore whether this was a bi-directional relationship, i.e., that diabetes-specific parenting goals were a product of parents’ diabetes management behaviors, we conducted regression analysis where diabetes-specific parenting goals at 6 months served as the dependent variable using the same independent variables. Baseline diabetes-specific goals ($\beta = 0.61$, $p < 0.001$), but not parent responsibility for diabetes management ($\beta = -0.21$), predicted diabetes-specific goals at 6 months. Results are displayed in Table 4.

Discussion

A measure of disease-specific parenting goals was developed and employed in a longitudinal design to examine the potential impact of diabetes-specific parenting goals. The measure, developed using input from parents and clinicians, suggests that disease-specific goals are more salient to parents of children with this chronic illness than those concerning general parenting; this pattern was consistent across a period of 6 months. Furthermore, disease-specific parenting goals at baseline were predictive of changes in parenting behaviors related to diabetes management 6 months later such that parents who rated diabetes-specific goals as more important subsequently took more responsibility for their children's diabetes management. There was no evidence to suggest that diabetes-specific goals were a product of previous parental responsibility.

The measure of parenting goals appears to have face validity. Parents in the development sample identified these goals as important issues for them. The goals also seemed to represent difficult choices that parents of children with T1DM frequently face. Anecdotally, parents in the study sample expressed the difficulty of choosing between goals, indicating that all of the goals were important. However, they also expressed concern that they did, indeed, make choices favoring diabetes management goals over normal child development goals. These preferences were evident in the results: diabetes-specific parenting goals were consistently prioritized over general parenting goals.

Prioritization of diabetes-specific parenting goals predicted subsequent levels of parent involvement in diabetes management; however, differences in diabetes-specific goals were not predicted by previous parent involvement. Previous research suggests that parental involvement is essential in achieving optimal diabetes management (Ellis et al., 2007; Grey et al., 2001; Skinner et al., 2005). Therefore, the predictive effect of parenting goals on the level of parental involvement in diabetes management could help efforts to improve management of T1DM, i.e., identifying families at risk of decreasing parental involvement in diabetes management. Families that do not prioritize diabetes-specific goals would be candidates for interventions that emphasize treatment goals within the parenting goal hierarchy.

There are several limitations of these data worth noting. All measures were self-report; however, parent responsibility for diabetes management was correlated across observers (parent and child), suggesting cross-observer consistency. Another potential limitation is that within a chronic illness population, some of the general parenting goals could have been interpreted as contributing to diabetes management, including "Take good care of his/her health," which received the highest ranking among general goals and second overall. According to the social domain theory, parents perceive the moral domain (i.e., the system of rules that regulates social interactions) as distinct from the psychological domain (i.e., including prudential issues such as harm to self, safety, comfort and health), which may have different implications for their behaviors (Smetana, 1999). Within this framework, "Take good care of his/her health" falls within the prudential domain and is considered a general goal. However, parents endorsing this item may have interpreted it as related to diabetes management. Had "Take good care of his/her health" been included with the

diabetes-specific goals, the average ranking of diabetes-specific goals would have been even higher than estimated in our analyses. Qualitative research comparing parents' perceptions of the general parenting goals in families with and without children with T1DM may address this question.

Another potential limitation of this study is that many of the assessments focus on diabetes management; it is possible that this caused parents to emphasize diabetes-specific goals more than they may have otherwise. However, during pilot study interviews, parents openly talked about the tension between their general parenting goals and how these were subsumed by diabetes-specific goals, suggesting that these findings are robust reflections of the real dilemmas faced by parents of children with T1DM.

Strengths of this study include the development and application of a new measure to address an understudied area and the use of a longitudinal design allowing an examination of the directionality of relationships. In addition, the longitudinal sample had a high retention rate across 6 months. Another strength of the study is the use of forced choice ranking methodology to evaluate parenting goals. Q-sort methodology, also known as ipsative measurement, is best used in a case where there is an anticipated response bias (Baron, 1996). In the case of the parenting goals measure, it is unlikely that parents would have rated any of the goals, diabetes-specific or general, as unimportant, creating a ceiling effect. The Q-sort technique requires that parents reveal their priorities when goals conflict. One purpose of this study was to examine the relative importance of illness-specific versus general goals. In reality, parents have competing demands for their time and parenting efforts and, given the additional burden of raising a child with T1DM, make decisions that prioritize their parenting goals and subsequent behaviors.

Parental involvement is essential for diabetes management of children with T1DM. One way to increase parental involvement may be to increase the relative importance parents place on diabetes management goals. Determining how parents prioritize parenting goals could be used to assist clinicians in predicting future increases or decreases in parent involvement and identify families who would benefit from efforts to increase the value they place on diabetes management goals.

Acknowledgments

Funding

Funding was provided by the Intramural Research Program of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development.

References

- Anderson B, Ho J, Brackett J, Finkelstein D, Laffel L. Parental involvement in diabetes management tasks: Relationships to blood glucose monitoring adherence and metabolic control in young adolescents with insulin-dependent diabetes mellitus. *Journal of Pediatrics*. 1997; 130(2):257–265. [PubMed: 9042129]
- Anderson BJ, Auslander WF, Jung KC, Miller J, Santiago JV. Assessing family sharing of diabetes responsibilities. *Journal of Pediatric Psychology*. 1990; 15(4):477–492. [PubMed: 2258796]

- Baranowski T. Methodologic issues in self-report of health behavior. *The Journal of School Health*. 1985; 55(5):179–182. [PubMed: 3847673]
- Baron H. Strengths and limitations of ipsative measurement. *Journal of Occupational and Organizational Psychology*. 1996; 69(1):49–56.
- Dawber T, Kuczynski L. The question of ownness: Influence of relationship context on parental socialization strategies. *Journal of Social and Personal Relationships*. 1999; 16:475–493.
- Delamater AM. Psychological care of children and adolescents with diabetes. *Pediatric Diabetes*. 2009; 10(Suppl 12):175–184. [PubMed: 19754628]
- Dix, T.; Branca, S. Parenting as a goal-regulation process. In: Kuczynski, L., editor. *Handbook of Dynamics in Parent-Child Relations*. Thousand Oaks, CA: Sage; 2003. p. 167-187.
- Dix, T. Parenting on behalf of the child: Empathic goals in the regulation of responsive parenting. In: Sigel, IE.; McGillicuddy-DeLisi, AV.; Goodnow, JJ., editors. *Parental Belief Systems: Psychological Consequences for Children*. 2nd edn. Hillsdale, NJ: Erlbaum; 2002. p. 319-346.
- Ellis DA, Podolski CL, Frey M, Naar-King S, Wang B, Moltz K. The role of parental monitoring in adolescent health outcomes: Impact on regimen adherence in youth with type 1 diabetes. *Journal of Pediatric Psychology*. 2007; 32(8):907–917. [PubMed: 17426045]
- Grey M, Boland EA, Davidson M, Li J, Tamborlane WV. Coping skills training for youth with diabetes mellitus has long-lasting effects on metabolic control and quality of life. *Journal of Pediatrics*. 2000; 137(1):107–113. [PubMed: 10891831]
- Grey M, Davidson M, Boland EA, Tamborlane WV. Clinical and psychosocial factors associated with achievement of treatment goals in adolescents with diabetes mellitus. *Journal of Adolescent Health*. 2001; 28(5):377–385. [PubMed: 11336867]
- Grusec JE, Goodnow JJ, Kuczynski L. New directions in analyses of parenting contributions to children's acquisition of values. *Child Development*. 2000; 71:205–211. [PubMed: 10836575]
- Hamilton J, Daneman D. Deteriorating diabetes control during adolescence: Physiological or psychosocial? *Journal of Pediatric Endocrinology and Metabolism*. 2002; 15(2):115–126. [PubMed: 11874175]
- Hastings D, Grusec JE. Parenting goals as organizers of responses to parent-child disagreement. *Developmental Psychology*. 1998; 34(3):465–479. [PubMed: 9597357]
- Kuczynski L. Socialization goals and mother-child interaction: Strategies for long-term and short-term compliance. *Developmental Psychology*. 1984; 20(6):1061–1073.
- McNabb WL, Quinn MT, Murphy DM, Thorp FK, Cook S. Increasing children's responsibility for diabetes self-care: The In Control study. *The Diabetes Educator*. 1994; 20(2):121–124. [PubMed: 7851224]
- McPherson GE. The role of parents in children's musical development. *Psychology of Music*. 2009; 37(1):91–110.
- Marteau TM, Johnston M, Baum JD, Bloch S. Goals of treatment in diabetes: A comparison of doctors and parents of children with diabetes. *Journal of Behavioral Medicine*. 1987; 10(1):33–48. [PubMed: 3586000]
- Mounts NS, Kim HS. Parental goals regarding peer relationships and management of peers in a multiethnic sample. *New Directions for Child and Adolescent Development*. 2007; 116:17–33. [PubMed: 17623403]
- Pervin, A. *Goal Concepts in Personality and Social Psychology*. Hillsdale, NJ: Erlbaum; 1989.
- Plotnick L. Insulin-dependent diabetes mellitus. *Pediatrics in Review*. 1994; 15:137–148. [PubMed: 8015997]
- Smetana JG. The role of parent in moral development: A social domain analysis. *Journal of Moral Education*. 1999; 28:311–321.
- Skinner, TC.; Murphy, H.; Huws-Thomas, MV.; Snoek, FJ.; Snoek, T. Diabetes in adolescence. In: Snoek, FJ.; Snoek, S.; Skinner, TC., editors. *Psychology in Diabetes Care*. Chichester: Wiley; 2005. p. 27-44.
- Vaughn BE, Block JH, Block J. Parental agreement on child-rearing during early-childhood and the psychological characteristics of adolescents. *Child Development*. 1988; 59(4):1020–1033. [PubMed: 3168611]

- Wysocki T. Associations among teen-parent relationships, metabolic control, and adjustment to diabetes in adolescents. *Journal of Pediatric Psychology*. 1993; 18(4):441–452. [PubMed: 8410569]
- Wysocki T, Meinhold PM, Taylor A, Hough BS, Barnard MU, Clarke WL, Bellando BJ, Bourgois MJ. Psychometric properties and normative data for the parent version of the diabetes independence survey. *The Diabetes Educator*. 1996; 22(6):587–591. [PubMed: 8970288]

Table 1

Sample demographic characteristics at baseline and 6 months

Variable	Baseline (n=86)		6 months (n=80)	
	Child	Parent	Child	Parent
Mean age (SD)	12.91 (2.03)		13.94 (2.07)	
Sex (%)				
Male	45.3		45.0	
Female	54.7		55.0	
Race/ethnicity (%)				
Hispanic/Latino	5.8	9.3	3.8	7.5
Black/African American	14.0	14.0	15.0	15.0
White	74.4	76.7	76.3	78.8
Other	15.1	11.6	12.6	8.8
Mean duration of diagnosis in years (SD)	6.33 (3.83)		6.45 (3.92)	
Medication regimen (%)				
Insulin pump	25.6		25.0	
Insulin injections with Lantus/Glargine	9.3		6.3	
Insulin injections: not Lantus/Glargine	65.1		68.8	
Relationship to child (%)				
Mother		87.2		87.5
Father		10.5		10.0
Other/unknown		2.3		2.5
Marital status (%)				
Married		77.9		78.8
Divorced		10.5		11.3
Other		11.7		9.2
Number of siblings (SD)	1.75 (1.00)		1.77 (1.00)	
Family income (%)				
Under 40k		9.4		6.3
40k–69,999		13.9	15.1	
70k–99,999;		31.4	25.0	
100k+Missing		40.7 4.7	47.5	6.3

Table 2

Parenting goals items ranked by mean score

Rank	Goal type	I want my child to ...	Mean
1	D	Accept responsibility for his/her diabetes management	4.22
1	G	Take good care of his/her health	4.22
3	D	Acquire the skills and ability to manage diabetes on own	3.99
4	D	Maintain HbA1c below 8.0%	3.72
5	G	Be dependable and responsible	3.70
6	D	Have diabetes management not interfere with what s/he wants to do in life.	3.63
7	D	Maintain blood glucose levels in the 80 to 140 range	3.55
8	G	Be self-sufficient	3.49
9	G	Be able to enjoy a normal childhood	3.38
10	G	Follow moral or religious values	3.35
11	D	Maintain a positive attitude toward diabetes	3.29
12	G	Care about his/her family	3.24
13	D	Understand the potential long-term consequences of diabetes	3.20
13	G	Be their own person	3.20
15	D	Establish a routine for diabetes management	3.06
16	G	Achieve at school	3.00
17	G	Have fun	2.73
18	D	Be willing to make sacrifices for his/her diabetes	2.67
19	G	Have a successful career	2.36
20	G	Be well-behaved	2.08
21	G	Not worry about the future	2.06
21	G	Stay out of trouble	2.06
23	G	Respect cultural traditions and customs	1.83
24	G	Follow our family routines	1.70
25	G	Be popular with friends	1.30

D=diabetes-specific goal; G=general goal.

Table 3

Cross-sectional zero-order correlations between measures at baseline and 6 months and stability of measures across time

	1	2	3	4	5
1. Diabetes-specific goals (P)	0.57***	0.18	−0.09	0.13	.02
2. Parent responsibility for diabetes management (P/C)	0.07	0.91***	−.53***	0.13	−0.06
3. Age	−0.03	−0.58***	0.99***	−0.18	0.34**
4. Sex	0.01	0.15	−0.22	NA	0.20
5. Duration of diagnosis	0.01	−0.06	0.35**	0.18	1.0***

Correlations at baseline are above the diagonal. Correlations at 6 months are below the diagonal. Correlations along the diagonal indicate stability of measures across baseline and 6 months.

* $p<0.05$,
** $p<0.01$,
*** $p<0.001$. P =parent-report; C =child-report.

Table 4

Multiple regression models using baseline measures to predict parent responsibility and diabetes-specific goals at 6 months

Variable	β	F	R ²
Model 1			
Outcome: Parent responsibility for Diabetes management at 6 months		22.01**	0.36
Age	-0.18**		
Duration of diagnosis	0.04		
Parent responsibility for Diabetes management at baseline	0.80**		
Diabetes-specific goals at baseline	0.10*		
Model 2			
Outcome: Diabetes-specific goals at 6 months		10.70**	0.36
Age	-0.08		
Duration of diagnosis	0.00		
Diabetes-specific goals at baseline	0.61**		
Parent responsibility for diabetes management at baseline	-0.21		

* $p < 0.05$,

** $p < 0.01$.