Assessment of Parent-Adolescent Partnership in Diabetes Care
A Review of Measures

Purpose
To identify and evaluate psychometric properties of available measures to assess dimensions of parent-adolescent partnership in diabetes care, including parent-adolescent responsibility in diabetes management, parental monitoring, diabetes family conflict, and parental involvement.

Methods
A literature review that included searches of electronic databases from 1990 to April 2009 was conducted. Instruments were reviewed extracting information about aim, target population, and psychometric properties.

Results
Eight instruments were identified. Study samples appear to be large enough for psychometric validation but with a small proportion of fathers. The instruments have been designed and evaluated with adolescents and parents in the United States. Most of the instruments have adequate reliability, both for adolescents’ and parents’ forms. Regarding construct validity, factor structure of most of the instruments was evaluated either with exploratory factor analysis or confirmatory factor analysis. In addition, some measures have significant relationships with age in the direction expected or with other outcomes such as adherence or quality of life. Finally, all the
reviewed studies are cross-sectional and have not yet addressed predictive validity or instrument responsiveness.

Conclusions

Valid measures tapping into aspects of diabetes-related adolescent-parent partnership are available, but longitudinal studies are needed to determine if the instruments are able to detect clinically significant change (e.g., impact on metabolic control, adherence, quality of life). Rather than develop new measures, refinement and further validation of existing instruments is suggested.

Diabetes has a profound impact on the patient as well as on the family as a whole and is often referred to as a “family disease.” When a child or adolescent is diagnosed with diabetes, families are faced with the daily demands of managing the diabetes. As a consequence, the parent-child relationship acquires a new dimension related to specific diabetes management tasks, such as avoiding extreme blood glucose excursions, self-monitoring of blood glucose, and insulin injections.

The parent-child relationship is particularly challenged when the child with diabetes is approaching adolescence and taking primary responsibility for managing the diabetes on a day-to-day basis. Finding a balance between growing autonomy and sufficient parent involvement in diabetes care often proves difficult, resulting in frequent conflicts. Achieving successful diabetes management requires interventions aimed at building and maintaining parent-adolescent partnership and minimizing family conflicts.

The term parent-adolescent partnership is used to describe parents’ and adolescents’ efforts to collaborate as a team around diabetes care. This includes issues such as diabetes-related parental monitoring, sharing diabetes-related responsibility, parent-adolescent communication, parental support, and parent-adolescent collaboration. In view of the growing literature surrounding diabetes parent-adolescent partnership and development of interventions to support this partnership, there is a critical need for well-defined valid and reliable measures.

A previous review has summarized existing measures of diabetes-specific support for use with adolescents with type 1 diabetes, and most of the measures assess family or parental support. Despite the utility of this work, a review describing instruments for measuring other aspects of the parent-adolescent relationship in diabetes care, apart from parental support, would be helpful for both researchers and clinicians.

Therefore, the aim of the present study was to identify and review available measures of parent-adolescent partnership in diabetes care, including parent-adolescent responsibility in diabetes management, parental monitoring, diabetes family conflict, and parental involvement for use with adolescents and/or their parents, and to summarize the psychometric properties of the measures.

Method

Literature Search and Inclusion Criteria

A literature review was conducted that included searches of electronic databases (PsycINFO, PubMed, Science Citation Index, Social Sciences Citation Index) from 1990 to April 2009, searches of relevant journals (Diabetes Care, Diabetic Medicine, The Diabetes Educator, Pediatrics Diabetes, Journal of Adolescent Health, and Journal of Pediatric Psychology), and a review of the references in located articles. Finally, the names of located measures were used in further searches.

The search terms used, either singly or in combination, were as follows: diabetes, adolescents, parenting, maternal, parental monitoring, family conflict, collaboration, communication, responsibility, autonomy, involvement, supervision, measurement, assessment, psychometric, and evaluation.

To be included in the review, the studies had to (1) report psychometric data on a diabetes-specific measure and (2) derive from children/adolescents with diabetes and/or parents of children/adolescents with diabetes. Only publications in the English language were included. In addition, studies that did not have the explicit objective to develop or validate an instrument were included if they reported psychometric data of a new measure of adolescent-partnership (e.g., internal consistency/factor analysis). Only reports about questionnaires or scales, not interviews or structured interviews, were considered for review. Finally, the measures of parental support have been extensively summarized and will not be considered in this review.
Instruments were reviewed for the following characteristics: (a) target population (caregiver and/or adolescents), (b) participants’ characteristics: sociodemographic and clinical data (eg, age, sex, diabetes duration, treatment), and (c) psychometric properties (reliability and validity). Reliability was broken down into 2 categories (internal consistency and test-retest reliability) and validity into 3 categories (content, construct, and convergent validity). Acceptable ranges of internal consistency range from 0.7 to 0.8. Content validity refers to the extent that an instrument represents the content of interest as established by expert judgment. Construct validity refers to whether a scale measures or correlates with a theorized psychological construct that it purports to measure. Convergent validity compares the scale to measures of the same concept developed through other methods.

Results

An initial search produced 77 references related to parent-child/adolescent partnership in diabetes. Twelve instruments were identified: 4 of them aimed to assess parental support, and 8 met the inclusion criteria (see Figure 1). These were the Diabetes Family Conflict Scale (DFCS), the Maternal Reasons for Transferring Diabetes Responsibility,11 the Parental Monitoring of Diabetes Care Scale (PMDC),12 the Collaborative Parent Involvement Scale (CPI),13 the Perceptions of Adolescents’ Assumption of Diabetes Management Scale,14 the Perceptions of Collaboration Questionnaire (PCQ),15 and the Diabetes-Specific Scale of Parental Monitoring of Management.16

Table 1 summarizes the key characteristics of the measures, presenting the definition of related parent-adolescent partnership concepts, the scale/questionnaire used, who completes the questionnaire (child/adolescent, caregiver/parent), the number of items and response format, and a description of the dimensions or subscales.

The DFCS is the most widely used scale for assessing the level of family conflict related to diabetes management. Originally developed by Rubin et al,8 the scale has been recently updated to form the revised DFCS (DFCS-R).9 The original version of the DFCS was a subscale from the Diabetes Family Responsibility and Conflict Scale (DFRCS) and consisted of 15 diabetes management tasks, such as meals, insulin administration, glucose monitoring, exercise, and talking with others about diabetes. Respondents (parent, child/adolescent, or both) had to rate the level of conflict about each diabetes task from 1 (never) to 5 (all the time).

The revision of the DFCS-R consists of 19 items. Diabetes tasks related to urine testing and exercise were removed, and new items were included or expanded to reflect advances in diabetes treatment in the post-Diabetes Control and Complications Trial (DCCT) era. The new items were derived from feedback from parents of children with diabetes during group sessions and from experienced diabetes experts (nurses, physicians, and psychologists). The original 5-point scale was changed to a 3-point scale (1 = almost never, 2 = sometimes, 3 = almost always), with higher scores indicating greater conflict (scale range from 19 = no conflict to 57 = high level of conflict). Validity and reliability of the revised DFCS were tested in a sample of 202 child or adolescent-parent dyads (76% mothers). Factor analysis showed a bifactorial structure—namely, “direct management tasks” and “indirect management tasks.” Internal consistency reliability (Cronbach’s alpha) for the revised DFCS was reported to be .85 and .81, for the youth and parent versions, respectively. Regarding concurrent validity, both adolescent and parent reports of family conflict showed significant relationships with poorer quality of
### Table 1

**Description of the Measures: Number of Items, Response Format, and Dimensions of the Measures**

<table>
<thead>
<tr>
<th>Parent-Adolescent Partnership: Related Concept</th>
<th>Scale/Questionnaire</th>
<th>Responsible for Completing</th>
<th>Total Item Number/Response Format</th>
<th>Dimensions/Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conflict</strong></td>
<td>Diabetes Family Conflict Scale–Revised (DFCS-R)</td>
<td>Parent/caregiver, Child/adolescent</td>
<td>19 items, 3-point scale (1 = never argue, 2 = sometimes argue, 3 = always argue)</td>
<td>Factor 1: direct management tasks (9 items), Factor 2: indirect management tasks (10 items)</td>
</tr>
<tr>
<td><strong>Responsibility</strong></td>
<td>Diabetes Family Responsibility Questionnaire (DFRQ)</td>
<td>Parent/caregiver, Child/adolescent</td>
<td>17 items, 3-point scale (1 = parents take responsibility, 2 = parent and child/adolescent share responsibility, 3 = child/adolescent takes responsibility)</td>
<td>Unidimensional</td>
</tr>
<tr>
<td><strong>Maternal Reasons for Transferring Diabetes Responsibility</strong></td>
<td>Mothers</td>
<td>13 items, 5-point scale (not at all to very much)</td>
<td>Hassles (4 items), Promoting responsibility (2 items), Child competence (4 items), External pressure (3 items)</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Advantages and Disadvantages of Adolescents’ Assumption of Diabetes Management Scales</strong></td>
<td>Parent/caregiver, Child/adolescent</td>
<td>9 items, 5-point scale (1 = strongly disagree to 5 = strongly agree)</td>
<td>Perceived advantages scale (5 items), Perceived disadvantages scale (4 items)</td>
<td></td>
</tr>
<tr>
<td><strong>Parental monitoring</strong></td>
<td>Parental Monitoring of Diabetes Care Scale (PMDC)</td>
<td>Parent/caregiver</td>
<td>18 items, 5-point scale (more than once a day to less than once a week)</td>
<td>Direct oversight of diabetes management behavior (4 items), Oversight of diet (3 items), Supervision of availability of supplies/devices (5 items), Monitor blood glucose (BG) checking (2 items), Nonadherence monitoring (4 items)</td>
</tr>
<tr>
<td><strong>Parental involvement</strong></td>
<td>Collaborative Parent Involvement Scale (CPI)</td>
<td>Child/adolescent</td>
<td>12 items, 5-point scale (1 = almost never to 5 = always)</td>
<td>Dimensions of collaboration: Cognitive compensation (3 items), Interpersonal enjoyment (3 items), Frequency (3 items)</td>
</tr>
<tr>
<td><strong>Parental knowledge</strong></td>
<td>Diabetes-Specific Scale of Parental Monitoring of Management</td>
<td>Parent/caregiver, Child/adolescent</td>
<td>6 items, 5-point scale (1 = doesn’t know to 5 = knows everything)</td>
<td>Unidimensional</td>
</tr>
</tbody>
</table>
life (adolescents [A], $r = -0.36$; parents [P], $r = -0.35$; $P < .01$), negative affect around blood glucose monitoring (A, $r = 0.35$; P, $r = 0.46$; $P < .01$), and poorer metabolic control (A, $r = 0.27$; P, $r = 0.26$; $P < .01$). Also, parents’ conflict scores were associated with parental stress ($r = 0.45$; $P < .01$).

The DFRQ was developed by Anderson et al10 to assess who takes responsibility for 17 diabetes management tasks as perceived by both parents and children/adolescents. The content for the items of the DFRQ was obtained from interviews with health care professionals and families of children with diabetes. No other information about item development was included. For each item, the respondent assigns a 1 if the parent (mother and/or father) is predominantly responsible for that specific task, 2 if the child and parent share the responsibility, and 3 if the child is predominantly responsible for the task; therefore, higher scores indicate that children assume greater responsibility. The psychometric properties of the questionnaire were examined in 121 children with diabetes and their mothers. The items from the DFRQ–mother version were subjected to a component analysis, resulting in a 3-factor solution: general health maintenance tasks (eg, remembering day of clinic appointment), regimen tasks (eg, giving insulin injections), and social presentation of diabetes (eg, telling teachers about diabetes). This factor structure was not replicated in children’s data. Concurrent validity was supported by the finding that age was associated with both mothers’ and children’s DFRQ scores, with older children assuming greater responsibility in their diabetes management tasks (children, $r = 0.74$; mothers, $r = 0.68$; $P < .001$). Also, higher reports of independence, as measured by the Moos Family Environment Scale,17 were associated with mothers’ reports of the child assuming greater responsibility ($r = 0.21$; $P < .05$).

The Maternal Reasons for Transferring Diabetes Responsibility is a self-report developed by Palmer et al11 to explore mothers’ reasons about why they may be transferring illness management responsibility to their children. Thus, mothers have to complete the statement “My decision to give my child more responsibility for managing diabetes was/will be influenced by” from among 13 items using a 5-point scale ranging from 1 (not at all) to 5 (very much). A principal components analysis was performed on responses from 127 mothers of adolescents (ages 10-15 years), which resulted in 4 factors. The factors were labeled as hassles (eg, “feeling tired and burned out over having to help my child manage his/her diabetes”), promoting responsibility (eg, “believing my child will better learn how to manage his/her diabetes if he/she takes more responsibility”), child competence (eg, “believing my child is able to keep his/her diabetes in control on his/her own”), and external pressure (eg, “having other people (friends, relatives, doctors, authors of books or articles) say my child should take on more responsibility”). The items use a 5-point scale ranging from 1 (not at all) to 5 (very much). Internal consistency reliability (Cronbach’s alpha) for the total scale was 0.54.

No evidence for concurrent validity of this measure was provided.

The PMDC is an 18-item instrument developed by Ellis et al12 with the aim of assessing parental monitoring across different diabetes-specific tasks. Items of the initial version of the PMDC scale relating to 5 areas were created from existing measures and expert consensus and assessed for inclusion by 6 experts in diabetes research. Parents were asked to think about their monitoring behavior during the past month when answering the questions. Item response is on a 5-point scale from less than once a week to more than once a day. Items are summed to yield a total monitoring score, with higher scores indicating higher levels of monitoring. The proposed 5-factor structure of the scale was assessed by a confirmatory factor analysis (CFA) with data from 99 parents (recruited at a scheduled clinic visit; 78.8% mothers) of adolescents, resulting in an acceptable fit to the data. The domain subscales were as follows: supervision of the availability of medical supplies/devices (eg, “how often do you check your child’s insulin vials to see if the expected amount has been used?”), monitoring blood glucose checking (eg, “how often do you look at the readings in the BG meter?”), oversight of diet (eg, “how often do you eat meals with your child?”), monitoring of nonadherence (eg, “when your child skips a BG test, how often do you know?”), and direct oversight of diabetes management behaviors (eg, “how often were you present at home when your child tested his/her BG?”). Internal consistency reliability of the total scale (Cronbach’s alpha) was 0.81, and test-retest reliability (intraclass correlation) was 0.80. Significant relationships among parental monitoring of diabetes care (PMDC), diabetes management, and metabolic control were found through structural equation modeling (SEM), supporting the concurrent validity of the PMDC scale. Thus, the final SEM model showed that parental monitoring

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accounted for 38% of variance of diabetes management and had an indirect effect on A1C through diabetes management ($P < .01$).

The CPI, developed by Nansel et al.,\textsuperscript{13} is a youth report measure of parent behaviors related to diabetes management that reflects parent-child collaboration. An initial pool of items was developed based on previous research on parenting youths with diabetes and on results from an interview with adolescents and their parents. After review by a team of experts, a set of 48 items was selected for inclusion and was piloted with a sample of 81 adolescents. Some items with a high skewness score or a low item-to-total correlation were eliminated, and factor analysis of the remaining items resulted in a 20-item unidimensional scale. A panel of experts examined these items to remove doubtful, redundant, or complex items, resulting in an initial scale of 9 items (Cronbach’s alpha = .89) focused on parent collaborative involvement relating to problem solving and tailoring of assistance based on the child’s needs (eg, I have a parent who . . . “helps me plan my diabetes care to fit my schedule,” “knows when I need a little extra help with my diabetes”). Adolescents are asked to respond on a 4-point scale (from 1 = almost never to 4 = almost all the time), with higher scores indicating higher collaborative parental involvement. In a subsequent phase of scale refinement, 7 new items aimed to assess other dimensions of collaborative parental involvement, such as parental awareness of adolescent diabetes management activities, were included, and a 16-item version was proposed and tested in a sample of 122 adolescents. After performing the item and factor analyses, a final unidimensional 12-item scale was identified with Cronbach’s alpha of .91. Concurrent validation was confirmed by a significant positive relationship between collaborative parent involvement (CPI) and adolescents’ and parents’ reports of adherence. Also, higher levels of CPI were associated with better quality of life for adolescents.

The Perceptions of Adolescents’ Assumption of Diabetes Management Scale was developed by Hanna et al\textsuperscript{14} to measure perceived advantages and disadvantages to adolescents assuming diabetes management. Authors developed an initial pool of 46 items based on previous studies in which adolescents and parents were interviewed about what both considered the advantages and disadvantages of adolescent assumption of diabetes management.\textsuperscript{18,19} The advantages scale consisted of items relating to parental relief from burden as well as adolescents’ abilities and independence (eg, “teen independent watching carbohydrates,” “teen more control of life when responsible for exercising”). The perceived disadvantages scale consisted of items relating to parental loss of control, stress, and worry as well as adolescents’ burden of responsibility (eg, “hard when teen had more responsibility than other kids,” “parent worried if teen is remembering to give insulin”). Respondents were asked to rate the degree to which they agreed or disagreed with the statements, from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating higher perceived advantages or disadvantages to adolescents assuming diabetes care, for advantages and disadvantages scales, respectively. After a pilot study with 43 parent-adolescent dyads (91% mothers), a 24-item version (14 advantages and 14 disadvantages) was produced with alpha values ranging from .82 to .93. A factor analysis was performed with a second sample of 100 parent-adolescent dyads (recruited at scheduled clinic visit; 80% mothers) and yielded a 5-item scale for advantages and a 4-item scale for disadvantages, both for parents and adolescents. Reliability values (Cronbach’s alpha) ranged from .78 to .84. Regarding concurrent validity, it was found that adolescents were more likely to be responsible when they perceived more advantages and less responsible when they perceived more disadvantages. Also, when parents and adolescents perceived more disadvantages, they reported more conflict, as measured by the DFCS. In addition, positive attitudes toward adolescents assuming diabetes management, as measured by a semantic differential scale, were positively associated with perceived advantages ($A, r = .40; P < .01$) and negatively with perceived disadvantages ($A, r = -.31; P = -.47; P < .01$), suggesting convergent validity of the scale.

The PCQ was developed for use in a recent study by Berg et al,\textsuperscript{13} with the purpose to examine how adolescents’ and mothers’ perceptions of cognitive and interpersonal functions of collaboration in diabetes management differed and were related to adolescent age and emotional adjustment. The 9 items referred to 3 dimensions of collaboration: cognitive compensation (eg, “working together with my child/my mom is useful as I/she make(s) up for things that I/she/he doesn’t do well”), interpersonal enjoyment (eg, “I enjoy/my child enjoys the support and encouragement I/she/he receives when I work together with my mom/him/her”), and frequency (eg, “my mom/my child and I always work
together to deal with diabetes decisions”). Items are rated with regard to the adolescent on 5-point scales (1 = strongly disagree to 5 = strongly agree; ie, mothers rated their perceptions of collaboration to compensate for the adolescent’s cognitive function, adolescent’s enjoyment, and frequency of collaboration), with higher scores indicating higher perceptions of collaboration between mothers and adolescents in diabetes management. The proposed 3-factor structure of the questionnaire was assessed by CFA with data from 84 mother-adolescent dyads, resulting in an acceptable fit to the data. Concurrent validity was suggested by the negative significant relationships between adolescents’ age and adolescents’ and mothers’ perceptions of collaboration. Thus, older adolescents collaborated less to compensate for cognitive function and enjoyed this collaboration less, as reported by adolescents ($r = –.44$; $r = –.36$; $P < .01$) and parents ($r = –.30$; $r = –.38$; $P < .01$). Also, adolescent enjoyment of collaboration was negatively associated with lower negative emotional adjustment ($r = –.47$; $P < .01$) and positively correlated with adherence ($r = .33$; $P < .01$); that is, the higher the adolescents’ feeling of enjoyment of collaboration with mothers in diabetes management, the better their emotional adjustment and adherence.

The Diabetes-Specific Scale of Parental Monitoring of Management was developed for use in a study by Berg et al.\textsuperscript{16} that aimed to examine the role of parental monitoring in understanding the benefit of parental acceptance on adolescent adherence and metabolic control in a sample of 185 adolescents, as well as their mothers ($n = 185$) and fathers ($n = 145$). The scale consists of 6 items where adolescents rate on a 5-point scale (1 = doesn’t know to 5 = knows everything) how much their mother and then their father really know about 6 aspects of diabetes care (e.g., What are your blood glucose readings? What have you eaten? How much exercise do you get?). Similarly, parents are asked to report their level of knowledge about the same aspects of diabetes care. Reliability values (Cronbach’s alpha) were acceptable and ranged from .86 to .91. Age was negatively associated with adolescents’ report of mothers’ monitoring ($r = –.23$; $P < .01$), fathers’ report of fathers’ monitoring ($r = –.29$; $P < .01$), and mothers’ report of mothers’ monitoring ($r = –.32$; $P < .01$). Also, adherence was positively correlated with adolescents’ report of mothers’ monitoring ($r = .37$; $P < .01$) and adolescents’ report of fathers’ monitoring ($r = .41$; $P < .01$).

Table 2 summarizes the evidence for internal consistency and validity for the reviewed measures.

\section*{Conclusions}

The purpose of the present work was to review existing measures aimed to assess different dimensions of the broad concept of “parent-adolescent partnership.” Eight instruments have been identified that fall into 3 categories. A first set of instruments measures several aspects surrounding the concept of “responsibility,” such as the distribution of responsibilities for diabetes management between parents and adolescents, the reasons for transferring this responsibility from parent to adolescent, or the perceptions about pros and cons of assumption of diabetes management. Two other measures aim to evaluate parental involvement or collaboration, and another two are proposed to assess parental monitoring. Finally, one instrument assesses diabetes-related family conflict. Although the identification of 8 different validated measures of adolescent-parent partnership is in itself to be regarded a positive finding, the strengths and weaknesses of current instruments and challenges need to be appreciated for future research.

First, there is conceptual confusion surrounding related but different terms. Thus, professionals from different backgrounds, such as nursing, developmental psychology, or medicine, may refer to the variables related to the parent-adolescent partnership using a different terminology, lacking conceptual precision. This seems to be the case for parental involvement and parental responsibility, as well as for parental monitoring and parental knowledge. Often, the label \textit{parental involvement or collaboration} is used when assessing parents’ performance of illness-related tasks. However, a parent may be involved in his or her adolescents’ diabetes care without performing specific treatment tasks but being supportive or giving advice when necessary. In the same way, parental monitoring refers to “behaviors,” such as parental overt supervision of the adolescent’s performance of the diabetes management tasks, not only “knowledge” about whether the tasks have been executed. In this sense, one of the reviewed measures is labeled as a parental monitoring scale,\textsuperscript{16} although a closer inspection of its content reveals that it actually assesses parental knowledge.

Second, despite the fact that parent-adolescent collaboration/partnership in diabetes management has been suggested as a central focus for research and intervention, the delay in the development of specific measures is striking. Most of the instruments were published from

\begin{table}[h]
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\begin{tabular}{|c|c|}
\hline
Measure & Description \\
\hline
Parental Involvement Scale & Assesses parental involvement in diabetes management \hline
Parental Monitoring Scale & Measures parental monitoring of diabetes care \hline
Adolescent-Parent Partnership Inventory & Evaluates the perceptions of adolescents about their parent-adolescent partnership \hline
 \end{tabular}
\end{table}

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of the 8 measures were created in the past 5 years, with the exception of the DFRQ and DFCR-S, although the revised version of the conflict subscale was also published recently. This recent proliferation of a wide range of tools gives both researchers and clinicians the opportunity to assess different but complementary dimensions of the parent-adolescent collaboration in diabetes management (i.e., sharing of responsibility, family conflict, parental monitoring, parental involvement, or parental support). At the same time, some measures are primarily focused on the assessment of behaviors in terms of frequency of family arguments.
or number of treatment tasks that the parent or adolescent assumes. On the other hand, several instruments are aimed at evaluating “beliefs” or “perceptions,” such as the perceived advantages or disadvantages to adolescents assuming diabetes care or parents’ reasons for the transfer of diabetes responsibility to their children. The PCQ shows a mixed content assessing both perceptions (compensation and enjoyment subscales) and behaviors (frequency subscale) as dimensions of collaboration between mothers and adolescents in diabetes-related problem solving.

Third, regarding the development of the reviewed measures, 6 were developed following the recommended procedures for test construction (ie, expert consensus in item development and selection). Other measures were apparently developed using less stringent criteria. For example, the PCQ items were derived by drawing on the collaborative literature,20 the items for the Maternal Reasons for Transferring Diabetes Responsibility Scale were based on the general diabetes literature, and the Diabetes-Specific Scale of Parental Monitoring items were based on a previous general parental monitoring scale.21 Most of the samples included in the reviewed studies appear to be large enough for psychometric validation; however, only a small proportion of fathers was included in the samples used for the development and validation of the measures. Fathers often have been excluded from pediatric studies of family issues.22 Parents were often approached during clinic appointments where more mothers than fathers were present, leading to overrepresentation of mothers in the study samples. It would seem worthwhile to recruit more fathers in pediatric/family psychometric studies.

Also, all the instruments have been designed and evaluated with adolescents and parents in the United States. Because of the impact of cultural differences on family relationship patterns and parental monitoring, the applicability of these measures in populations from other countries should be examined. Recent versions from European samples are now available for the DFCS.23

Most of the instruments, except the Maternal Reasons for Transferring Diabetes Responsibility Scale, have adequate reliability; however, the PMDC is the only measure that assessed test-retest reliability. Regarding construct validity, the factor structure of most instruments was evaluated using exploratory factor analysis or confirmatory factor analysis. In addition, some measures show significant relationships with age in the direction expected (eg, DFRQ) or with other outcomes such as quality of life (eg, DFCS-R, CPI), adherence (eg, CPI, PMDC), or glycemic control (eg, DFCS-R). The PMDC showed a strong direct association with adherence and an indirect effect on glycemic control, in accordance with the literature about the role of parental monitoring on health outcomes. Similarly, a significant positive relationship between collaborative parental involvement (CPI) and adolescents’ and parents’ reports of adherence was found. Also, higher levels of diabetes family conflict (DFCS-R) were associated with poorer glycemic control.

Some of the measures, such as the Maternal Reasons for Transferring Diabetes Responsibility and the Perceptions of Adolescents’ Assumption of Diabetes Management Scale, require further refinement and validation.

Finally, all the reviewed studies were cross-sectional and therefore cannot address predictive validity and the instruments’ responsiveness. The latter is particularly important in the context of interventions aimed to improve the child-parent collaboration around diabetes. Further research is warranted to substantiate and improve psychometric properties and clinical utility of the available instruments. Longitudinal studies are needed to determine if the instruments are able to detect clinically significant changes (eg, impact on metabolic control, adherence, quality of life).

Despite the limitations of some measures, researchers and clinicians in the field of pediatric diabetes care can choose from a range of valid tools to examine different dimensions of adolescent-parent partnership. Thus, rather than developing new measures, existing instruments should be refined and further validated. Developing consensus concerning measurement of the different dimensions of adolescent-parent partnership would be of benefit to the field, allowing for international and cross-cultural comparison.

References

4. Laffel LMB, Vangsness L, Connell A, Goebel-Fabbri A, Butler D, Anderson BJ. Impact of ambulatory, family focused teamwork...