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Diabetes Interaction Study: Communicating Understanding And Social Support

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**DIABETES INTERACTION STUDY:
COMMUNICATING UNDERSTANDING AND SOCIAL SUPPORT**

by

DANA MAY

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

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CHAPTER 1: INTRODUCTION

Diabetes is the fifth leading cause of death in the United States with 1.5 million Americans diagnosed with the disease, including 166,000 children and adolescents (Pettitt et al., 2014). Healthcare costs for diabetes related treatment are burdensome, estimated at \$245 billion annually (ADA, 2013). People with diabetes are also at higher risk for heart disease, blindness, kidney failure, extremity amputations, and other chronic conditions. These risks are amplified by poor self-care.

Living with diabetes requires intensive daily management and treatment, including daily blood glucose testing and insulin management through multiple insulin injections, carbohydrate counting, regular exercise and frequent contact with healthcare providers (ADA, 2011). Furthermore while diabetes care is complex, time consuming, and effortful even for adults, it is even more so for adolescents, who are developing independence and personal responsibility for their own self-care. Insulin regimens require constant individual tailoring to accommodate the developmental level of the child, as well as lifestyle and changing insulin needs (Silverstein, 2005). Three quarters of type 1 diabetes is diagnosed in youth younger than 18 years old, and adolescents experience more problems managing diabetes care than both younger children and adults (Silverstein, 2005). Thus, further development of prevention and intervention strategies should be considered to improve diabetes management among adolescents (Hamilton, 2002; Miller-Johnson et al., 1994; Naranjo, Mulvaney, McGrath, Garner, & Hood, 2014).

Although several behavioral interventions have shown favorable outcomes for improving diabetes management in adolescents (e.g., behavioral family systems therapy, multisystemic family therapy) (Ellis, 2005; Wysocki, 2006), there has been a push to develop *brief* interventions for patients with diabetes to improve self-care and health outcomes. Brief interventions have the potential to be more cost-effective and more easily deliverable to patients than more lengthy behavioral interventions that require multiple visits. Accessibility of services may be particularly important to rural, low income, or uninsured families; adolescents in low income and uninsured families are at higher risk for poor diabetes management and health outcomes (Harris, Greco, Wysocki, Elder-Danda, & White, 1999; Palta et al., 1997). The current study aims to develop a brief intervention based on person-centered communication techniques to provide parents individualized feedback regarding their communication style with their adolescents with type 1 diabetes. It is argued that this individualized feedback can create additional opportunities for adolescents to discuss self-care decisions with their parents, and reduce diabetes care related conflicts.

Diabetes in Developmental Context

Mastery of diabetes self-care occurs against the backdrop of broader adolescent development, which remains important to consider as interventions are designed for this population. Parental support is one of the fundamental components of parenting that supports the healthy psychosocial development of adolescents (Barber, Olsen, Collins, & Burchinal, 2005). Successfully balancing both adolescent autonomy and parental support within the parent-adolescent relationship is an indicator of secure attachment during adolescence (Allen & Land, 1999). Parental responses can be characterized by

supportive (i.e. warm and sensitive to the emotional experience) or non-supportive (i.e. punitive or dismissive responses) interaction behaviors. Research indicates supportive parenting is an important antecedent to reduced academic problems, internalizing problems, externalizing problems and risk-taking behaviors (Barnes & Farrell, 1992; Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Helsen, Vollebergh, & Meeus, 2000; Steinberg, 2001). Throughout childhood and into adolescence, parents have a key role in helping when their children experience psychological distress (Salisch, 2001). Children whose parents are responsive to their distress develop tolerance for negative affect in the long-term. Drawing from the adult relationship literature, it is known that understanding and validation promote healthy relationship functioning, and facilitate arousal reduction; however, critical or rejecting responses from significant others inhibit future emotional expression and increase emotional arousal, which are associated with psychopathology (Fruzzetti & Iverson, 2004).

Parents strive to support their adolescents; however, a pull for agency is a normal aspect of adolescent development that serves to maintain autonomy and control of the teen's own behaviors (Deci & Ryan, 2000). Adolescents develop a variety of strategies that maintain their relationships with their parents, including polite refusal, negotiation, and justification and rely less on childhood resistance strategies (i.e. direct defiance and passive noncompliance) (Parkin & Kuczynski, 2012; Power, McGrath, Hughes, & Manire, 1994). The use of assertive agency strategies by adolescents during parent-adolescent conflict can potentially lead to positive outcomes by allowing the opportunity for renegotiation within the relationship (Dix, Stewart, Gershoff, & Day, 2007; Morrissey & Gondoli, 2012). Therefore, parents must find ways to continue to

support their adolescents' diabetes self-care, even in the face of adolescent arguments and resistance.

Adolescence as an Optimal Time for Parental Interventions

Parental involvement in adolescent diabetes management has been shown to be essential for adolescents to maintain adequate diabetes management (Berg et al., 2011; D. Ellis et al., 2007; King, Berg, Butner, Butler, & Wiebe, 2014; Naranjo et al., 2014; Palmer et al., 2011; Wiebe et al., 2005). Given the importance of parental involvement in the daily life of adolescents, effective treatments to improve adolescents' diabetes management may need to be dyadic in structure.

As children develop into adolescents, they are able to take on more responsibility for their diabetes management (Hanna & Decker, 2010; Ingersoll, 1986). Although increased personal responsibility is appropriate over time, it is recommended that parents maintain a high level of involvement in the diabetes management of their adolescents, in particular, making insulin adjustments and meal planning (La Greca, 1990; Silverstein, 2005). Higher levels of parent-adolescent sharing of diabetes responsibility are related to better diabetes care adherence (Vesco et al., 2010). A gradual transition to independent self-care is ideal, during which adolescents gain responsibility in small increments that match their current ability (La Greca, 1990; Palmer, 2004; Silverstein, 2005). For a successful transition to self-care, it is important to find a division of responsibility that is comfortable for everyone involved (Hanna, 2012; Sieffge-Krenke, 2002).

Communication style between parents and adolescents has received particular attention as a factor affecting diabetes management during the transition to independent

diabetes management and therefore a potential target family interventions. Positive family communication and conflict resolution skills are strong predictors of adherence to diabetes self-management and metabolic control (V. A. Miller & Drotar, 2007; Miller-Johnson et al., 1994; Wysocki, 1993). Youth with diabetes in more cohesive families have better metabolic control and diabetes management than youth in families who are less cohesive or chaotic (Duke et al., 2008; Forsander, Sundelin, & Persson, 2000; Hanson, De Guire, Schinkel, & Kolterman, 1995). However, in an observational study of adolescent-parent discussions about diabetes management, the majority of parental-adolescent interactions regarding diabetes were rated as non-supportive (Weinger, O'Donnell, & Ritholz, 2001). Adolescents report various sources of diabetes-related conflict including parental worry and intrusive behaviors, parental lack of understanding and blaming behaviors, and parental focus on the future that competes with the adolescent's focus on the present (Weinger, O'Donnell, & Ritholz, 2001).

A supportive environment for adolescents to disclose personal experience, as opposed to an environment that promotes secrecy, is associated with better diabetes adherence and metabolic control (Osborn, Berg, Hughes, Pham, & Wiebe, 2013). Furthermore, families that share diabetes-related decision-making and create an environment in which adolescents express personal opinions and share information with their parents have better adherence (V. A. Miller & Jawad, 2014). Specifically, higher levels of person-centered communication during conversations about diabetes care are related to better psychosocial adjustment and metabolic control in adolescents with type 1 diabetes (Jaser & Grey, 2010). Parental supportive communication appears to be one

factor that influences adolescent self-care that is potentially modifiable and therefore can serve as an intervention target.

Family interventions for adolescents with type 1 diabetes.

It is clear that parents are an integral part of the daily lives of adolescents and diabetes management for youth; therefore, it is important to include parents in interventions seeking to target this population. Targeting the interactions among parents and adolescents, specifically increasing parental support for diabetes management through increasing positive communication, can be particularly productive. Consistent with this idea, a variety of family interventions have been developed to improve family interactions with the intention of indirectly influencing diabetes management.

Behavioral family systems therapy (BFST) provides problem-solving, communications skills training, cognitive restructuring and functional and structural family therapy over 10 sessions with adolescents and their parents (Wysocki, 2006; Wysocki et al., 2007). The communication training targets common parent-adolescent communication through instructions, feedback, modeling, and rehearsal. In a randomized controlled trial of BFST that enrolled adolescents with chronically poorly controlled diabetes, educational support groups and BFST had similar effects in improving metabolic control relative to standard care at treatment termination. However, only BFST had long-term effects in improving metabolic control over 12 months.

The Coping Skills Training (CST) intervention was tested in a family-based format where parents and youth received six weekly intervention sessions focused on building constructive coping styles and patterns of behavior, including communication, social problem solving, recognition of associations between thoughts, feelings and

behavior, guided self-dialogue, stress management, and conflict resolution of diabetes-specific stressors (Grey, 2004). CST has been shown to improve metabolic control and psychosocial outcomes for youth.

Multisystemic Therapy (MST) is an intensive home-based family intervention that has been adapted for the treatment of serious illness management in adolescents with diabetes (Ellis, 2005). Treatment lasts approximately 6 months and targets the multiple systems in which youth are embedded, including family based interventions for reducing problematic family interactions, improving parenting skills, and increasing parent/family support for diabetes management. In several randomized controlled trials, MST has been shown to be superior to both standard medical care and attention control in improving diabetes management and metabolic control (Ellis et al., 2012; Ellis et al., 2007).

Self-Directed Positive Parenting Program (Triple P) is a 10-week self-directed program that provides a family intervention promoting healthy teenage development in youth with diabetes (Doherty, Calam, & Sanders, 2013). The program includes a parent workbook and series of chronic illness tip sheets with a strong emphasis on developing positive parent-adolescent relationships and attitudes and putting strategies into practice. A randomized-control-trial of Self-Directed Triple P demonstrated reductions in diabetes-related family conflict, adolescent problem behaviors, and parenting style (Doherty et al., 2013). However, no effects on diabetes management or metabolic control were shown despite changes in family interactions.

Brief Interventions for Adolescent with Type 1 Diabetes

Although previously developed family-based interventions targeting increased family support in general, and parent-child communication in particular, have been shown to improve diabetes management and health in adolescents, there has been a push within the pediatric field, and health care as a larger industry, to provide briefer psychological interventions within primary and specialty care clinics. Health care is focused on practical, beneficial, cost-effective treatments for diabetes that address the psychological factors of disease management (Glasgowa et al., 1997; Gonder-Frederick, Cox, & Ritterband, 2002). This approach is driven by a variety of factors including patient access to care, more integrated understanding of health and illness, early screening for co-morbid psychological factors, and improving patient and provider satisfaction, all of which exist within the context of managed care with a push for briefer patient contacts and lowering medical costs (Blount, 2003; Blount et al., 2007). To this end, there is a call for psychologists to be involved as part of routine clinical visits to identify and manage psychological and behavioral problems that may interfere with diabetes care for patients and their families (Delamater et al., 2014).

In the intervention literature for youth with diabetes, a few clinic-based brief interventions have been developed and tested. For example, the Teamwork intervention is a 4-session, clinic-delivered intervention focusing on helping families develop a plan for sharing diabetes management in a way that reduces parent-adolescent conflict (Anderson, Brackett, Ho, & Laffel, 1999). WE-CAN is a 7-session, clinic-delivered intervention focusing on problem solving, communication, and appropriate responsibility sharing (Gee, Nansel, & Liu, 2015; Nansel, Iannotti, & Liu, 2012).

Motivational Interviewing (MI) is another brief set of techniques that have been tested as an intervention to improve diabetes management in youth and young adults (Channon et al., 2007; Erickson, Gerstle, & Feldstein, 2005; Ruback, Sandbæk, Lauritzen, & Christensen, 2005). Motivational interviewing includes four primary processes including: 1) engaging in rapport building, 2) focusing on topic of change, 3) evoking personal motivations for change, and 4) planning for change, which includes developing commitment to change and making specific plans (Miller & Rollnick 2012). Overlying these four processes is a person-centered communication style. The communication style used in motivational interviewing provides supportive, non-judgmental guidance by carefully listening to the unique viewpoints of the client while honoring the client's autonomy and emphasizing individual strengths and intrinsic values (Rollnick, Miller, & Butler, 2008) in order to increase motivation for behavior change (e.g., diabetes management).

Four primary person-centered communication skills are stressed: open-ended questions, affirmations, reflections, and summarization. Open-ended questions are broadly stated and allow for more in-depth responses, instead of a single word. Affirmations are statements that highlight the speaker's strengths. Reflections range from repeating or paraphrasing the speaker's words to reframing the speaker's statements. Summarizations are longer reflections that provide a synopsis of a conversation or portion of a conversation. Together these person-centered communication skills communicate empathy, facilitate conversations, show respect for the speaker, and increase positive feelings about the interaction (Naar-King & Suarez, 2011). Understanding the perspective of the adolescent, their personal reasons for

behavior change and any ambivalence for behavior change is also essential for facilitating behavior change and strengthening a supportive relationship.

The communication style used in MI is well suited for adolescents because it assumes various levels of ambivalence and allows the listener to respond with non-judgmental support while supporting personal agency. The interventionist is able to support the autonomy of the adolescent through reflecting ambivalence about behavior change that demonstrates the value of the adolescent's perspective (Naar-King & Ellis, 2011). One study testing the efficacy of MI to improve diabetes management among adolescents with type 1 diabetes provided four MI sessions with a psychologist as during routine diabetes clinic visits and found improvements in metabolic control, quality of life and general well-being (Channon et al., 2007). In another study, a group motivational interviewing intervention was provided to adolescents with poorly controlled type 1 diabetes, which yielded improvements in metabolic control (Viner, Christie, Taylor, & Hey, 2003).

The core person-centered communication skills used in motivational interviewing may be useful for parents to employ while discussing diabetes self-care with their adolescents. Parents have far more opportunities to discuss diabetes self-care with their children, compared to clinicians. These opportunities allow parents to support the adolescent and reduce resistance to diabetes care. Techniques such as asking open-ended questions, highlighting the adolescent's strengths, and reflective listening are suitable for parents to employ when discussing diabetes management at home. These person-centered communication techniques provide a framework that stands in opposition to the primary areas of parent-adolescent diabetes-related conflict identified

by Weinger, O'Donnel, et al. (2001). Encouraging these communication skills during diabetes management conversations may be a fruitful area to focus intervention efforts given the literature showing that parent-child communication and conflict have an important influence on adolescent diabetes care. In addition, given that the pull for agency is a normative aspect of the parent-adolescent relationship, this is an opportune place and time to provide parents guidance to reduce conflict regarding diabetes care.

As brief interventions have gained popularity, a number of studies have tested the use of direct feedback regarding current behaviors as a means of changing family interactions. For example, one type of feedback targeting parent-infant/toddler interactions involves providing feedback regarding the mother or father's responsiveness to the infant, in a subsequent session with the parent (Kalinauskiene et al., 2009; Lawrence, Davies, & Ramchandani, 2013). This method has also been adapted to provide feedback to home-based child care providers regarding sensitivity, empathy, and care-giving techniques. Feedback on videotaped interactions for parents and children has also been utilized to improve existing interventions such as the Family Check Up and the Incredible Years (Phaneuf, Lee McIntyre, & Roane, 2007; Smith, Dishion, Moore, Shaw, & Wilson, 2013). Direct feedback on interactions has also been used as an intervention for adults coping with chronic illness, including cancer and chronic pain (Davey, Kissil, Lynch, Harmon, & Hodgson, 2013; L. R. Miller, Cano, & Wurm, 2013). Single session assessment based feedback has been employed extensively for problematic drinking behaviors (Riper et al., 2009) and other impulse control behaviors (i.e. gambling) (Cunningham, Hodgins, Toneatto, & Murphy, 2012). The current research on feedback interventions indicate feedback is most effective

when it is timely, individualized, non-punitive, and supportive (Larson, Patel, Evans, & Saiman, 2013; Shute, 2008). However, direct feedback has not been tested in the adolescent diabetes literature as a strategy for improving family interactions, including communication patterns, that could lead to improved diabetes management.

In summary, parental involvement and support for diabetes management is a crucial factor in maintaining optimal adolescent diabetes management and health. Positive family communication skills have been identified as one aspect of parental support that can facilitate good diabetes management. Although several interventions have been developed that show improved family communication and support can improve diabetes management and health outcomes such as metabolic control, these have been mostly lengthy and high cost in nature. If successful, brief interventions have the advantage of being more easily disseminated to a larger proportion of families in need and having lower costs. Brief feedback to parents on communication skills has been shown to improve child behavior and family interactions but has not been tested as an intervention for families of youth with diabetes. Person-centered communication skills are an optimal framework for helping parents due to the utility working with adolescents with chronic illness.

Aims of the Current Study

The current study has the following aims and hypotheses:

1. The first aim of this project was to develop and conduct an initial evaluation of an experimental manipulation that targeted improved communication between adolescents with diabetes and their parents by providing targeted feedback to parents on their use of a person-centered communication style during

discussions about diabetes care. It was hypothesized that the feedback could be delivered as designed and parents and adolescents would find the feedback useful in improving communication and diabetes management.

2. A second aim of this project was to examine the extent to which this type of feedback improves parent communication behaviors. It was hypothesized that this type of feedback would lead to improved parent communication skills regarding diabetes care (i.e. more person-centered communication and less critical communication) compared to communication within a control group who received educational information about diabetes care on both behavioral observations of parent-adolescent interactions and questionnaire ratings of communication skills.
3. A third aim of this project was to investigate the impact of the feedback on parent and adolescent's perceptions of emotional support. In addition to improving parental communication (Aim 2), it was hypothesized that this type of feedback would increase the parent and adolescent's perceptions of emotional support (i.e., perceived closeness and perceived supportive communication) compared to the perceptions of the control group.
4. An exploratory aim of this project was to explore the impact of the feedback on parental self-efficacy and adolescent self-efficacy regarding diabetes care. It was hypothesized that parents and adolescents in the feedback group would show greater increases in self-efficacy compared to the control group.
5. A second exploratory aim of this project was to examine baseline conflict and social support as potential moderators of the effectiveness of feedback.

CHAPTER 2: METHOD

Participants

Adolescents with type 1 diabetes and their parents were recruited from a children's hospital endocrinology clinic located in a suburb of Detroit, Michigan. Families were eligible to participate if they met the following inclusion criteria: 1) diagnosed with type 1 diabetes; 2) aged 13.0 – 17.9 years; 3) sufficient mastery of English to communicate with therapist and complete study measures reported by the parent and 4) no reported moderate/severe developmental delays that impair communication by parental report. Seventy-nine families were enrolled in the study. See Figure 1 for the CONSORT diagram. The majority of the families in the sample were Caucasian (89.7%), high socioeconomic status (42.3% family annual income > \$100,000 and 59% of parents with bachelor's degree or higher). Most adolescents also came from homes with two or more caregivers living in the home (69.3%). Power analyses were completed to estimate the necessary number of participants based on a small effect size, significance level of $p = .05$, and power of .8, yielding the most conservative sample size for the proposed analyses required $n = 68$. There was 10% attrition to follow-up.

Procedure

This study was a randomized experiment with a repeated-measures design. Families were randomly assigned to receive individualized feedback about their communication style or educational information. To ensure equivalence across conditions, randomization was stratified by youth age (13.0-15.5 years and 15.5-17.9).

Data were collected at four time points (baseline, pre-manipulation, post-manipulation, follow up) through paper and pencil measures and coding of parent-

adolescent interactions. See Figure 2 for a diagram of study flow. An initial set of questionnaires were mailed to families at baseline and completed prior to the research session to reduce time burden during the research session. The clinic session occurred before or after a scheduled endocrinology clinic appointment or scheduled at the families convenience. Upon arrival, parents and adolescent were greeted, consent and assent were completed and the mailed questionnaires were reviewed for completeness.

The PI served as the study interventionist. The interventionist first engaged in a brief rapport building discussion with the parent and adolescent regarding diabetes management at home. Next, participants were asked to discuss a diabetes management related problem that they recently experienced together. To determine the specific diabetes-related management problem to be discussed, parents and adolescents completed a common diabetes management challenge checklist rating each problem from 0 (not at all a problem) to 5 (a major problem), then the interventionist selected a problem that both participants rated as a moderate problem to discuss. In dyads that rated all topics as “not at all a problem,” the interventionist selected the topics “caring for diabetes when away from home” and “checking blood sugar throughout the day”. Dyads were allowed to diverge from the topic to maximize the natural flow of conversation. See Table 1 for frequency of conversation topics. The interventionist observed the dyad during the conversation, and completed ratings of specific positive and negative communication elements on the part of the parent (see intervention description below). The interventionist randomized the participants after she had completed her rating of parent communication, in order to remain blind during the

rating process. Parents and adolescents completed pre-manipulation questionnaires rating their experience in their conversation about diabetes-related problem.

After the first problem discussion, participants assigned to the control condition reviewed information about diabetes management with the interventionist and were given written handouts. For participants assigned to the feedback condition, the interventionist provided feedback to the parents regarding their communication style in oral and written form. Following the feedback manipulation, parents in this group were encouraged to practice the skills discussed in the feedback in the second conversation. Adolescents were not present during this portion of the session and therefore were not aware of which intervention their parents received. Each parent and adolescent dyad then completed a second conversation about another diabetes-related problem from the checklist. Following the second conversation, parents and adolescents completed post-manipulation questionnaires rating their experience in the second conversation and parents completed manipulation satisfaction ratings.

Both discussions were recorded for later coding by research assistants for parental communication behaviors. (See description of coding procedures below). Participants were then asked about their experience in the session, without disclosing their assigned condition to them, and paid for their participation in the initial portion of the session. Participants were mailed follow up questionnaires two weeks after the initial session and received additional compensation when the questionnaires were returned. Upon return of the completed questionnaires, debriefing was completed by mail through a letter. The follow up time for these letters was 9 to 60 days. Families who did not

complete follow up questionnaires were sent a debriefing letter at the conclusion of the study.

Conditions

Feedback Condition.

The intervention condition (Feedback) consisted of providing individualized feedback to parents on their communication style, based primarily on person-centered communication skills and other aspects of positive communication. The interventionist provided both verbal and written feedback to the parent. The content of the feedback was determined through rating the of the discussion between the parent and adolescent, and then applying a decision algorithm to determine the topics on which to provide feedback. The following areas were rated using a zero to two scale: 1) expressing love and concern for the adolescent, 2) expressing understanding of the adolescent's ideas and perspective 3) use of humor and positive demeanor, 4) using reflections or paraphrasing the adolescent's statements or sentiments, 5) providing affirmations of the adolescent's strengths, efforts, and/or past success, and 6) asking open-ended questions to solicit additional information from the adolescent. Critical communication was not included in the feedback due to positive orientation and brevity of feedback. See Table 2 for parental statements exemplifying each communication skill. Feedback included two communication strengths and one communication weakness with the individuals highest ratings considered a strength and lowest considered a weakness. See Appendix A for detailed algorithm. The interventionist used motivational interviewing based feedback principles to deliver feedback to the parent regarding communication strengths and weaknesses. The interventionist briefly engaged in the

four main processes of engaging, focusing, evoking, and planning, employed the communication techniques of asking open-ended questions, affirming, reflective listening, summarizing, and provided feedback in the MI spirit including compassion, collaboration, acceptance, and evocation. See Appendix B, C, D for parent communication rating form, feedback script, and written feedback template.

Control Condition.

The control condition consisted of providing parents diabetes-related educational information addressing diabetes and smoking, traveling with diabetes, and emergency preparedness for persons with diabetes. Two pediatric endocrinologists reviewed the educational information for appropriateness and accuracy prior to its use with participants. Parents were asked to select the order of the topics to be reviewed during the session; however, all three topics were covered with each parent. All participants received usual diabetes care as determined by their diabetes care providers.

Measures (Copies are provided measures is provided in Appendix E).

Demographics.

Demographic information was collected via questionnaire from all parents including parent and adolescent race, gender, and age; length of diagnosis, parental marital status, family income, parental employment; and number of people in the home at baseline.

Satisfaction.

Parent and adolescent satisfaction were measured using a satisfaction survey created specifically for this study. Post-manipulation, parents were asked to rate their satisfaction with the information received overall as well as in regard to improving

communication with their child, increasing communication with their child, and improving diabetes management, on a 7-point Likert scale. Free-response questions were also asked to identify the most and least helpful aspects of the information received. At follow-up, parents were asked a single yes or no item if they had followed up on the information provided with an open response follow up as well as asking a 5-point Likert item regarding the extent of information was helpful. Both parents and adolescents were asked to report on a 5-point Likert scale if any changes in communication were noticed.

Communication Skill.

Observed Person-Centered and Critical Communication. Video recordings were coded for parental person-centered communication skill and critical communication during the conversations with their adolescent regarding challenges with diabetes management. The coding scheme mirrored that of the interventionist's ratings during the research session observation rating, which included 1) expressing love/concern, 2) expressing understanding, 3) providing general and feelings reflections, 4) affirming the adolescent's strengths, previous success and/or efforts to change, 5) asking open-ended questions, as well as critical communication. A coding manual was created using motivational interviewing literature (W. R. Miller & Rollnick, 2012; Naar-King & Suarez, 2011). See the Appendix C for the complete coding manual. Two independent raters were trained using the manual, 10 practice ratings, and discussion with the lead author during a month of initial training meetings. Throughout the rating process, eight meetings were held to monitor coding and discuss ambiguous interaction samples. Disagreements in coding were discussed and a consensus was then reflected in the final coding. The coding manual was also edited to reflect these discussions and

provide clarification for further coding. The raters both rated 10% of the families and established a high degree of inter-rater reliability across all coding categories (ICC = 0.94).

Perceived Communication Skill. There is currently no measure, to the author's knowledge, of a measure that assesses an adolescent's perception of parental communication skill; therefore, a similar existing measure was adapted for the present study. To measure the adolescent's evaluation of communication skills, the Client Evaluation of Motivational Interviewing (CEMI)(Madson et al., 2013) was tailored to ask about parental communication techniques. The revised scale for the present study was referred to as Adolescent Evaluation of Parent Communication. Adolescents rated their parent on person centered communication skills and other communication techniques that support behavior change pre- and post-manipulation. A total score and two subscales were calculated, *relational* and *technical*. The relational scale reflected the parent's collaborative communication. The technical scale reflected the parent's skill in behavior change such as "helped you discuss your need to change". Adolescents completed this scale following each conversation. In this sample, the total score had poor reliability and therefore was not used ($\alpha = 0.22$). However, the technical subscale had adequate reliability ($\alpha = 0.75$). The relational subscale had questionable reliability and therefore was interpreted with caution ($\alpha = 0.68$).

Perceived Emotional Support.

Perceived Closeness. To measure perceived closeness between the parent and adolescent, the Inclusion of Others in the Self Scale was used (Aron, Aron, & Smollan, 1992). In this scale, parents and adolescents selected an image of Venn-like

diagrams of closeness that reflected the closeness of their current relationship, which is then coded from 1 to 7 with higher values indicating more closeness. Parents and adolescents completed this item at baseline, pre- and post-manipulation.

Experience of Supportive Communication. To measure parent and adolescent experience of disclosure, empathy, and intimacy following the conversation, the Measure of Intimate Event questionnaire was adapted from an adult version to measure parent-adolescent communication (Mitchell et al., 2008; Prager & Buhrmester, 1998). On this 17-item measure, parents and adolescents rated each item on a 4-point Likert scale from “0 = not at all true” to “3 = very true.” Parents and adolescents completed parallel versions pre- and post-manipulation. From this questionnaire, 4 scores were calculated, a total score and three subscales, *extent of disclosure*, *empathetic responding*, and *emotional intimacy*. The extent of disclosure scale was measured by three items asking about sharing personal experience, feelings or emotions, and expressing a need, wish, or want. Three items asking about feeling understood, supported or cared for, and criticized during the conversation created the empathetic responding subscale. The emotional intimacy subscale was comprised of two items related to feeling close during and after the conversation. In this sample, the adolescent report of total experience and emotional intimacy subscale had good reliability ($\alpha = 0.87$ and $\alpha = .70$ respectively), however, the extent of disclosure and empathetic responding scales had low reliability ($\alpha = 0.57$ and $\alpha = .52$ respectively) and therefore were interpreted with caution. Parental report of the total scale and extent of disclosure had moderate reliability ($\alpha = 0.68$ and $\alpha = 0.61$ respectively),

therefore, were interpreted with caution. The parental empathetic responding and emotional intimacy subscales had low reliability and were not interpreted.

Self-Efficacy.

Parenting Self-Efficacy. The Parenting Self-Agency Measure (Dumka, Stoerzinger, Jackson, & Roosa, 1996) assessed parental self-efficacy at baseline and post-manipulation. Parents rated each of the five statements on a 7-point Likert scale from 1 = rarely to 7 = always. In this sample, this scale had high internal reliability ($\alpha = 0.78$).

Diabetes Self-Efficacy. To measure adolescent diabetes self-efficacy, adolescent completed the Confidence in Diabetes Self-Care Scale (van der Ven et al., 2003) at baseline and post-manipulation. Adolescents rated each statement on a 5-point Likert scale from “no, I am sure I cannot” to “yes, I am sure I can.” In this sample, this scale had high internal reliability ($\alpha = 0.93$).

Possible Moderators.

Several possible moderators were explored to determine if the parental feedback was more useful for at risk families (i.e. high conflict or low support dyads) or for younger or older adolescents. These possible moderators were measured at baseline.

Diabetes Social Support. To measure the perception of emotional support for completing diabetes management behaviors of the adolescent from parents, 10 items from the Diabetes Social Support Questionnaire-Family were used (La Creca & Bearman, 2002). These 10 items were selected to reflect the emotional components of support including feeling understood and comfort expressing feelings about diabetes care. Parents and adolescent report the frequency of each behavior on a five-point

scale from “never” to “at least once a day”. In this sample, this scale had high internal reliability (parent $\alpha = 0.86$, youth $\alpha = 0.86$).

Diabetes-Related Conflict. The Diabetes Family Conflict Scale was used to measure diabetes conflict between parents and their adolescent (Hood, Butler, Anderson, & Laffel, 2007). Parents and adolescent report the frequency of arguments about each diabetes behavior on a three-point scale from “almost never” to “almost always”. In this sample, this scale had high internal reliability (parent $\alpha = 0.85$, youth $\alpha = 0.86$).

CHAPTER 3: RESULTS

Data Cleaning and Management

All analyses were conducted using SPSS Version 22.0, IBM. The data were screened for accuracy and patterns suggesting nonrandom missing data. Missing values were imputed for each item individually. Due to a low percentage of missing data (i.e. less than 9% of any variable), missing items were replaced with the sample mean for the missing item. The Confidence in Diabetes Self-Care Scale was not administered to 12 adolescents due to an administration error; therefore, these cases were not included in the analyses of this scale ($n = 67$ for these analyses).

Gender of adolescent, age of adolescent, age of diagnosis, family income, and length of manipulation were examined as possible covariates for each of the following analyses. No significant relationships between these potential covariates and outcomes were identified; therefore, no demographic variables were included in the following models.

Descriptors of Groups

Sample characteristics are summarized in Table 3. There were no significant differences between randomization groups on any demographic (i.e. gender, age, racial background, or parental relationship to the child) or outcome variables at baseline, except for the technical subscale of the adolescent experience of communication skill questionnaire (Education: $M = 2.32$, $SD = .59$; Feedback: $M = 2.58$, $SD = .53$, $t(77) = -2.09$, $p = .04$). Analyses utilizing this subscale were interpreted with caution. There was a marginally significant difference between randomization groups on the length of face-to-face time with the interventionist (Education: $M = 16.98$, $SD = 4.23$; Feedback: $M =$

18.93, SD = 4.34, $p = .05$). Length of manipulation was also examined as a covariate; however, it was not significantly correlated with any of the outcome variables.

Overall, study attrition was low, with 90% of the sample completing the post-test. The length of time from the clinic-based session to completion of the follow up questionnaires ranged from 9 days to 47 days ($M = 19.8$ SD = 7.8). There were two outliers that completed the follow up at 47 days; these were removed from analyses.

Hypothesis 1: *The feedback would be able to be delivered as designed and parents and adolescents would find the feedback useful in improving communication and diabetes management.*

Experimental Fidelity.

The interventionist was a clinical psychology doctoral student who completed a day long workshop by a certified motivational interviewing trainer. The interventionist attended bi-weekly motivational interviewing review meetings with a clinical psychologist throughout data collection. Quarterly supervision meetings with a pediatric psychologist were held to review videos of feedback and troubleshoot challenges. The interventionist also received two updates on protocol adherence ratings (described below) during data collection.

A rater blind to condition coded each manipulation interaction for the interventionist's adherence to 15 key factors of the feedback manipulation. The interventionist adhered to the protocol for 98.63% of these factors across dyads. Conversely, the percentage of completion of the same items was 0% for the educational manipulation. Overall warmth and communication style of the interventionist were also

coded on a Likert scale from 0 (no warmth/critical) to 2 (very warm/critical). The ratings indicate the interventionist demonstrated the highest levels of warmth in both conditions ($M = 2.00$, $SD = 0$). Ratings also revealed there were no instances of invalidation during the manipulation with any participants.

Feedback Content.

Table 4 outlines the various types of parental communication strengths and weaknesses that were addressed. Parents were generally supportive and loving with the most common areas of parental strength being expressing love and concerns and responding with understanding. Yet, parents lacked specific communication skills that promote understanding, such as reflections and open-ended questions.

Feedback Satisfaction.

Independent samples t-test were conducted to test the hypothesis that parents in the feedback condition would be more satisfied with the information provided during the visit than parents in the education condition. At the conclusion of the research session, parent in both groups found the information helpful (Education: 5.99, Feedback: 6.17 out of 7 possible) but there were no differences between groups, $t(77) = -0.91$, $p = .37$. At follow up, parents in both groups remained satisfied with the information provided during the face to face session (Education: 3.71, Feedback: 3.82 out of 5, $t(62) = -0.56$, $p = .58$) and parents in both groups reported following up on the information provided (Education: 54.55%, Feedback: 75.0%, $t(59) = 1.67$, $p = .10$). At follow up, 21 parents who received the feedback manipulation (54%) reported following up on the individualized feedback at home; however, 11 parents (28%) did not answer this question at follow up. In both conditions, parents and adolescents also reported

moderate changes in the communication in the weeks following the feedback session (Parent: $M = 2.87$, Adolescent = 2.47 out of 5 possible). However, parents in the feedback condition reported more changes in communication with their adolescent than parents in the education condition, $t(61) = -2.67$, $p = .01$. This suggests most parents were highly satisfied with the information provided regardless of condition (i.e., feedback or control); however, parents in the feedback group reported more changes in communication with their adolescent over time.

Hypothesis 2: *Feedback participants would demonstrate greater increases in person-centered communication skills and greater reductions in critical communication from pre- to post-manipulation compared to parents who receive the control manipulation on both behavioral ratings and questionnaire ratings of communication skills.*

Observed Person-Centered Communication. Repeated measures analyses of variance (RM-ANOVA) were conducted to test the hypothesis that parents in the feedback condition would show greater increases in observed person-centered communication skills during a problem discussion from pre- to post-manipulation compared to parents who received the control condition. There was a significant increase in total observed person-centered communication from pre- to the post-manipulation for the entire sample, $F(1, 77) = 22.57$, $p < .001$, $\eta_p^2 = .23$, a large effect; however, the group by time interaction term was not significant, $F(1, 77) = 1.24$, $p = .27$, $\eta_p^2 = .02$, a small effect. This indicates that parents demonstrated more observed person-center communication post-manipulation, regardless of group. To examine the effect sizes of the change in total observed person-centered communication for each

group, paired samples t-tests were conducted. Both groups had significant improvements in total observed person centered communication, Education: $t(39) = -2.43$, $p = 0.02$, $r = .36$, a small effect and Feedback: $t(38) = -4.41$, $p < .001$, $r = .58$, a medium effect.

As noted in Table 4, only 3 parents received feedback regarding improving the more general components of their communication with their adolescent (i.e. expressing love/concern and understanding), as opposed to more specific person-centered communication skills (i.e. reflections, affirmations, open-ended questions). Therefore, changes in specific person-centered communication skill were examined as well. Two variables were created. General person-centered communication reflected parental communications skills such as expressing love/concern and responding with understanding while specific person-centered communication skill reflected parental communication skills such as use of reflections, affirmations, and open-ended questions. After controlling for general observed person-centeredness at baseline to account for broad communication style prior to the manipulation, the main effect of time was significant, $F(1,77) = 5.42$, $p = .02$, $\eta_p^2 = .07$, a medium effect, and the interaction between time and group was also significant, $F(1,77) = 4.30$, $p = .04$, $\eta_p^2 = .05$, a small effect. This suggests that after accounting for the parental baseline level of general observed person-centered communication, parents who received feedback showed more improvement in specific person-centered communication skills than parents in the educational group. Table 6 shows results of paired samples t-tests to examine the improvements in each specific communication skill by each group, which demonstrates the feedback group improved significantly on reflections and open-ended questions

skills relative to the control group. Additionally, a paired samples t-test indicated that parents in the feedback condition demonstrated increased skill in the domains included as an individual weaknesses in the feedback manipulation, $t(38) = -7.95, p < .001$.

Observed Critical Communication.

Repeated measures analysis of variance (RM-ANOVA) were conducted to test the hypothesis that parents in the feedback condition would show greater reductions in observed critical communication from pre- to post-manipulation compared to parents who received the control condition. There was no significant main effect for conversation, $F(1, 77) = 2.11, p > .05, \eta_p^2 = .03$, a small effect, or group by time interaction, $F(1, 77) = 2.11, p > .05, \eta_p^2 = .03$, a small effect, for observed critical communication. It was notable that the frequency of any observed critical communication was very low ($n=9$) and evenly distributed between groups. To examine the distribution of observed critical communication from pre- to post-manipulation in each group, chi-square statistics were computed. Results of the chi-square analyses demonstrated levels of observed critical communication pre-manipulation are equivalent across randomization group ($X_2 = .08, p = .64$) and while group differences post-manipulation are increases, however, the difference was not significant ($X_2 = 2.11, p = .15$). Table 6 summarizes the chi square results pre- and post-manipulation.

Perceived Communication Skill.

Next, the hypothesis that adolescents whose parents received the feedback would perceive greater improvements in parental use of person-centered communication from pre- to post-manipulation compared to adolescents whose parents received the control information was tested. To test this hypothesis, repeated measures

analysis of variance (RM-ANOVA) were conducted. As noted above, the adolescent experience of communication skill measure, the Adolescent Evaluation of Parent Communication questionnaire, had questionable reliability. The total score was not analyzed due to low reliability and the relational subscale will be interpreted with caution. Examining changes in adolescent experience of communication - technical skill, there was no main effect for time, $F(1, 77) = 0.72, p = .40, \eta_p^2 = .01$, a small effect, or group by time interaction, $F(1, 77) = 1.27, p = .26, \eta_p^2 = .02$, a small effect. For adolescent experience of communication - relational skill, there was no main effect for time, $F(1, 77) = 1.80, p = .18, \eta_p^2 = .02$, a small effect) or group by time interaction, $F(1, 77) = 2.58, p = .11, \eta_p^2 = .03$, a small effect, for adolescent experience of relational skill.

Hypothesis 3: *Parents and adolescents in the feedback group will have increased perceptions of emotional support compared to the control group.*

To test the hypothesis that adolescents and parents in the feedback condition would show greater increases in the perceived closeness (measured by the Inclusion of Other Scale) and experience of supportive communication (as indicated by the self-disclosure, empathy, and intimacy subscales of the Measure of Intimate Event scale) from pre- to post-manipulation than those in the education condition, a series repeated measures analysis of variance (RM-ANOVA) were conducted. As noted above, the parent report of the Measure of Intimate Event subscales for empathetic responding and emotional intimacy subscales had low reliability; therefore, these measures were not included in the analyses.

Parents reported no significant differences between the feedback and control groups for perceived closeness, measured by the Inclusion of Other Scale, or experience of supportive communication, measured by the Measure of Intimate Event. There was no main effect for time, $F(1, 76) = 0.21, p = .65, \eta_p^2 = .003$, a small effect, or group by time interaction, $F(1, 76) = .57, p = .45, \eta_p^2 = .007$, a small effect, for Inclusion of Others Scale reported by the parent. Furthermore, there was a significant decrease in parent-reported Measure of Intimate Event total scale from pre-manipulation to post-manipulation, $F(1, 77) = 18.46, p < .001, \eta_p^2 = .19$, a large effect. The group by time interaction term was not significant, $F(1, 77) = .23, p = .63, \eta_p^2 = .003$, a small effect. This indicates parents felt they provided less supportive communication in the conversation following the manipulation, regardless of group. When examining the relationship between group and the Measure of Intimate Event – Emotional Disclosure subscale, there was a significant increase in parental report of extent of disclosure in conversation from pre-manipulation to post-manipulation, $F(1, 77) = 8.32, p = .005, \eta_p^2 = .10$, a medium; however, the group by time interaction term was not significant, $F(1, 77) = .79, p = .38, \eta_p^2 = .01$, a small effect. This indicates parents reported more emotional disclosure from the adolescent in the conversation following the manipulation than before, regardless of group.

Adolescents reported some differences between groups on perceived closeness as well as experience of supportive communication during the conversation. There was a significant change in the Inclusion of Other scale reported by adolescent from pre-manipulation to post-manipulation, $F(1, 77) = 6.04, p = 0.02, \eta_p^2 = .07$, a medium effect, and the group by time interaction term was marginally significant, $F(1, 77) = 3.70, p =$

0.06, $\eta_p^2 = .05$, a small effect. This indicates a trend-level finding suggesting that adolescents in the feedback group experienced increased closeness to their parent following the manipulation compared to the educational group. Interestingly, there was a significant decrease in adolescent report of Measure of Intimate Event total scale from pre-manipulation to post-manipulation, $F(1,77) = 9.41$, $p = 0.003$, $\eta_p^2 = .11$, a medium effect, however, the group by time interaction term was not significant, $F(1,77) = 2.58$, $p = 0.11$, $\eta_p^2 = .03$, a small effect. This suggests that adolescents in both groups experienced the conversation following the manipulation as less emotionally supportive overall than the conversation before the manipulation.

Further examination of the adolescent reported subscales of the Measure of Intimate Event indicates improvements in empathetic responding and emotional intimacy, but does not indicate differences for emotional disclosure. The Measure of Intimate Event – Emotional Disclosure subscale showed no main effect for time, $F(1, 77) = 0.39$, $p = .54$, $\eta_p^2 = .005$, a small effect, or group by time interaction, $F(1, 77) = .02$, $p = .89$, $\eta_p^2 < .001$, a small effect. However, in the RM-ANOVA examining the Measure of Intimate Event – Empathetic Responding subscale, there was a main effect of time, $F(1,77) = 7.15$, $p = 0.01$, $\eta_p^2 = .09$, a medium effect, as well as a significant interaction between the adolescent's experience of parental empathetic responding and group such that parents in the feedback group were perceived by the adolescent as maintaining empathetic responding in both conversations, while parents in the education group were perceived as providing less empathetic responding following the manipulation, $F(1, 77) = 6.29$, $p = .01$, $\eta_p^2 = .08$, a medium effect. See Figure 3. Additionally, in the RM-ANOVA examining the Measure of Intimate Event – Emotional

Intimacy subscale, adolescents reported no significant change in emotional intimacy in the conversation from pre-manipulation to post-manipulation, $F(1, 77) = .007$, $p = .81$, $\eta_p^2 = .09$, a medium effect), however the interaction between group and time was significant $F(1, 77) = 4.53$, $p = .04$, $\eta_p^2 = .06$, a medium effect). See Figure 4. This indicates that adolescents in the feedback group reported greater increases in emotional intimacy from pre-manipulation to post-manipulation than adolescents in the control group.

Exploratory Hypothesis 4: *Parents and adolescents in the feedback group would show greater increases in self-efficacy compared to the control group.*

To test this exploratory hypothesis, repeated measures variance (RM-ANOVA) were conducted. Parents reported no significant main effect for time, $F(1, 76) = 1.17$, $p = .28$, $\eta_p^2 = .02$, a small effect, or group by time interaction, $F(1, 76) = 1.05$, $p = .31$, $\eta_p^2 = .01$, a small effect, for the Parenting Self-Agency Measure.

Similarly, effects of the manipulation on adolescent diabetes self-efficacy were also tested. There was a significant main effect for time, $F(1, 59) = 1.82$, $p = .01$, $\eta_p^2 = .10$, a medium effect, and the group by time interaction was marginally significant, $F(1, 59) = 3.50$, $p = .06$, $\eta_p^2 = .06$, a medium effect, for the Confidence in Diabetes Care Scale. The marginal group by time interaction suggests that adolescents who received the feedback may have experienced greater increases in diabetes self-efficacy after the completion of the manipulation than adolescents in the control condition. See Figure 5.

Exploratory Hypothesis 5: *Explore the impact of baseline diabetes-related social support and conflict on the effectiveness of the feedback manipulation on parental communication skill, perceived emotional support and self-efficacy.*

Ideally, to test moderation in the present study, ANOVA analyses would be used to test for a significant three-way interaction between group, outcome (e.g., parental communication skill assessed at baseline and post-treatment), and moderator (e.g., baseline diabetes-related social support). However, SPSS does not allow this type of modeling when one of the variables is a repeated measure. Another approach would have involved using regression to test the interactions among group, baseline outcome variable, and moderator in predicting post-feedback outcome; however, this type of analysis would not have tested whether there was differential change among the groups based on participants' scores on the potential moderators at baseline.

Therefore, the following analytic strategy was chosen to explore this hypothesis. First, a median split was conducted to dichotomize the moderators. Second, Adolescents were divided into two groups by conducting a median split on diabetes-related conflict. Then, RM-ANOVAs were then conducted for the feedback and control group separately to examine the extent to which the moderator (e.g., baseline family conflict) was associated with changes in each outcome variable for each group a series of repeated measures ANOVAs (RM-ANOVAs) were conducted in which group and dichotomized moderator were the categorical between subjects variables and the outcome (e.g., person-centered communication) was the repeated measure.

Diabetes-Related Conflict.

The impact of diabetes-related conflict, measured by the Diabetes Family Conflict Scale, on the associations between group and observed person-centered communication and adolescent experience of communication skill over time was examined. Adolescents were divided into two groups by conducting a median split on diabetes-related conflict. Then, RM-ANOVAs were then conducted for the feedback and control group separately to examine the extent to which baseline conflict was associated with changes in each outcome variable for each group. Baseline conflict did not affect changes in 1) observed person-centered communication, 2) observed critical communication, 3) Adolescent Evaluation of Parent Communication – Technical Skill, 4) Measure of Intimate Event – Empathetic Response, 5) Measure of Intimate Event – Emotional Intimacy, 6) Measure of Intimate Event – Intimate Disclosure, 7) Parenting Self-Agency Measure, and 8) Confidence in Diabetes Care Scale in either the feedback or control groups (see Table 7).

However, baseline conflict affected the nature of the changes in parental communication when questionnaire ratings of perceived communication skills were considered. Within the feedback group, families with perceived low levels of baseline conflict, as assessed by the Diabetes Family Conflict Scale, did not report changes adolescent perception of parental communication skills, as assessed by the Adolescent Evaluation of Parent Communication – Rational Skill. In contrast, families with high levels of baseline conflict showed improvements in adolescent perception of parents' communication skill ($F(1,37) = 4.71, p = .04, \eta_p^2 = .11$, a medium effect; See Figure 8).

Baseline conflict was not related to observed ratings of communication skill in the education group. Additionally, baseline conflict affected the relationship between the

changes in the Inclusion of Other Scale for the education group. Families with low levels of baseline conflict showed decreases in perceived closeness, while families with high levels of baseline conflict reported increases in perceived closeness, ($F(1,38) = 5.23$, $p = .03$, $\eta_p^2 = .12$, a medium effect; See Figure 9.) Baseline conflict was not related to perceived closeness in the feedback group.

Taken together, while these RM-ANOVAs indicate that baseline levels of diabetes-related conflict do not fully explain changes in either group, dyads in the feedback group with high levels of conflict showed greater increases in their Adolescent Evaluation of Parent Communication scores.

Diabetes Social Support.

A similar series of analyses was used to examine how diabetes social support, measured by the Diabetes Social Support Questionnaire, was related to changes in parent behavior and experience of the conversation overtime. First, a median split was used to create a group that was higher and a group that was lower on diabetes social support. Then RM-ANOVAs were conducted for the feedback and control group separately to examine the relationship between social support and each outcome variable. Baseline social support did not affect changes in 1) observed person-centered communication, 2) observed person-centered communication skill, 3) observed critical communication, 4) Adolescent Evaluation of Parent Communication – Technical Skill, 5) Adolescent Evaluation of Parent Communication – Relational Skill, 6) Inclusion of Other Scale, 7) Measure of Intimate Event – Empathetic Response, 8) Measure of Intimate Event – Emotional Intimacy, 9) Measure of Intimate Event – Intimate Disclosure, 10) Parenting Self-Agency Measure, and 11) Confidence in

Diabetes Care Scale (see Table 7). These RM-ANOVAs indicate that baseline levels of diabetes social support do not explain the change in either group.

CHAPTER 4: DISCUSSION

The results suggest this randomized trial of brief individualized feedback to parents regarding their communication skills is effective in improving communication between parents and adolescents about diabetes management. The findings demonstrate that this type of feedback increased observed parental communication skill, particularly the use of reflections and open-ended questions in the conversations with their adolescent. The parental feedback also increased adolescents' perceptions of empathy and intimacy, measured by the Measure of Intimate Event, in the conversation following the feedback. Adolescents also reported marginal improvements in diabetes self-efficacy following the feedback, compared to controls. The results suggest there may be lasting effects given that parents reported changes in communication with their adolescent following the feedback session. In the current pediatric health care climate that stresses the need for brief, portable psychological interventions (Delamater et al., 2014), research on interventions of this kind are lacking in the literature.

Feasibility

This study demonstrates the feasibility of conducting individualized parental feedback regarding diabetes-related communication in a single brief session. A single clinic-based session maximizes access to psychological services for diabetes patients in conjunction with medical appointments in clinic. A brief rating template for communication skills was implemented to provide parents with both strengths and a weakness after observing a five-minute conversation with their adolescent. Feedback was provided in a 15-23 minute session with the interventionist and the parent using motivational interviewing style feedback to discuss possible improvements in the

parental communication skills. The interventionist was able to complete these feedback sessions with a high degree of adherence to the established protocol. In the future, this feedback may provide an option for assessment and intervention regarding diabetes communication that would require significantly less time in the clinic for patients as well as less time to train clinicians than other types of family interventions.

Satisfaction

Parents who received the feedback manipulation reported a high degree of satisfaction with the feedback sessions. Anecdotally, parents appreciated receiving feedback from a neutral observer, addressing both their strengths and weaknesses, and getting suggestions on the specific skills to improve and the rationale, as well as having clinic-based time to talk with their adolescent. Parents who received individualized feedback also self-reported more changes in communication two weeks following the individualized feedback compared to those who received educational information. 90% of all families completed their follow up evaluations, which may also suggest that the feedback was an acceptable intervention for families.

Person-Centered Communication

With respect to observed parental communication, the improvement in person-centered communication skill, especially in reflections and open-ended questions, showed quantifiable changes in parental behavior as a result from the individualized feedback. Additionally, parents showed improvements in the specific communication skill that was identified as an area for improvement during the feedback session. This indicated that parents did in fact improve communication and increase communication skills as a result of the brief individualized feedback session. Parents in the education

group also appeared to improve in communicating concern and understanding, possibly due to becoming more comfortable in the clinic setting or personally reflecting on the previous interaction with their adolescent. Improvement in specific communication skills following a discussion with a interventionist about a specific skill, compared to changes in more generic warmth may be more important with regard to long-lasting improvements in communication and diabetes care. Taken together, the data provided strong evidence that this type of brief feedback improved parental interactions with their adolescent during conversations about diabetes management.

Despite high levels of parental satisfaction and improved parent communication skill, as indicated by behavioral ratings, in the feedback group, parents who received the individualized feedback did not self-report much change in the emotional connection between their adolescent and themselves or improved self-efficacy for parenting. It is plausible that although parents learned a new skill that one opportunity for practice was insufficient to increase their feelings of confidence in using the skill in conversations with their adolescent. Despite receiving feedback on both strengths and an area for improvement, parents may also have felt insecure about their ability to communicate effectively with their adolescent. Markland, Richard, Tobin, and Rollnick (2005) suggest that setting realistic expectations for behavior change and encouraging parents to believe they are capable of using the skills builds parents feelings of competence, and maximizes behavior change. Including a measure of confidence in ability to apply the communication skill in future use of the feedback would allow the interventionist to address any insecurities in applying these skills. The feedback may have made parents more aware of their communication style and parents may not have wanted to overstate

the improved experience of the conversation because they also understood there was room for improvement. Anecdotally, many parents in both groups reported that having time to talk in a different setting facilitated less distractions and changed typical patterns of conflict, which may have led to improvements across groups. The aim for a brief intervention restricted the clinician's ability to address the broad range of influences on behavior change and may have been more appropriate to include in further follow-up sessions.

Perceived Emotional Support

Adolescents reported greater increases in Measure of Intimate Event - Empathetic Responding and Emotional Intimacy during conversations as well as Inclusion of Other following the individualized feedback, compared to adolescents whose parents received educational information. Of note, adolescents remained blind throughout the research session to the type of information parents received during the manipulation, whereas parents might have deduced their group assignment following the manipulation. Therefore, adolescents might have experienced less social desirability when reporting on their experience. The adolescents whose parents received individualized feedback perceived changes in parental empathetic behaviors and in turn reported feeling more connected to their parents. This type of adolescent experience has been shown to foster an understanding, supportive environment, which is related to positive diabetes management outcomes (Jaser & Grey, 2010; V. A. Miller & Jawad, 2014). These findings are particularly stimulating because pediatric research on social support suggests that the perception of the adolescent predicts future medical outcomes (Uchino, 2009). Adolescents also reported trends toward improvements in

diabetes self-efficacy following the parental individualized feedback. Given the brief nature of the feedback and conversations between the parent and adolescent, this finding was promising.

Diabetes-Related Conflict

Families with higher levels of baseline diabetes-related conflict showed greater improvements in adolescents' perception of parental communication following feedback than families with low levels of baseline conflict. This provides initial evidence that feedback may be most effective for improving communication in high-conflict families. It is logical that families who have the greatest need for change may make greater improvements as a result of the feedback. Furthermore, this finding indicates that there was no iatrogenic risk related to providing brief feedback to families with high baseline levels of diabetes-related conflict.

Additional Findings

Interestingly, the main effects of observed person-centered communication, parental report of Measure of Intimate Event - Disclosure and adolescent report of Inclusion of Other, Measure of Intimate Event - Empathetic Responding, Measure of Intimate Event - Emotional Intimacy and Confidence in Diabetes Care Scale suggested that shared experiences by both groups led to some improvements in the parent-adolescent relationship. The content of the conversations frequently included problem-solving discussions regarding diabetes care, which has been shown to be an important contributor to the perceptions of social support regarding diabetes care (Wysocki et al., 2007). Informally, many parents, as well as adolescents noted that spending 10 minutes talking about diabetes care was uncommon for them but highly useful. Taken together,

providing a supportive environment for parents and adolescents to discuss challenges with diabetes management may be a simple, yet important, service to provide in clinic settings in the future.

The lack of significant changes on the adolescent experience of communication skill, measured by the Adolescent Evaluation of Parent Communication questionnaire, might have been a reflection of the mismatch between the scale and the type of interaction between parents and adolescents. The scale was adapted from a measure of interventionist motivational interviewing techniques, including person-centered communication, rated by therapy patients and the scale had questionable reliability in this sample of adolescents. To the author's knowledge, there is no scale to measure the perception of parental person-centered communication in a parent-adolescent interaction. In future studies, an appropriate measure should be developed. It is also noteworthy that while adolescents did not report changes in specific behaviors during the brief conversation, following the brief intervention, adolescents reported increased empathic responding from their parent and closeness; however, an increase in adolescent report of Inclusion of Other and Measure of Intimate Event – Empathetic Responding were reported.

In this sample, the lack of a significant interaction between group and time to predict observed critical communication likely represents the low frequency of critical communication. It is a strength of the sample that there is limited critical communication between parents and adolescents. However, to better understand the impact of this type of feedback on critical communication, the intervention should be replicated in a population with a higher frequency of this type of parent-adolescent interaction.

Limitations

Some limitations of the current study should be noted. First, this study has limited generalizability because its sample does not represent the diverse population of youth with diabetes; furthermore, all families self-selected to participate in the study and hence the sample may be characterized by relatively higher functioning participants. Furthermore, the sample had extremely low levels of critical communication, which prevented this study from assessing the utility of individualized parental feedback for families with higher levels of critical communication. Second, this study did not evaluate the impact on diabetes-related medical outcomes; therefore, no specific conclusions can be made regarding the impact of the feedback on the physical health of the adolescent. In future studies, measures of diabetes adherence and metabolic control should be included to better understand the impact of this brief feedback on medical outcomes. Third, there was limited follow-up to explore the effectiveness of the feedback beyond the single session. Completing a longer-term evaluation of the effects of the feedback would provide further support for the clinical use of this type of feedback. Finally, this study utilized a single interventionist to deliver the feedback to parents, which may have contributed to the effectiveness. Future studies with multiple clinicians would allow for examination of interventionist effects.

Future Directions

Although these findings are encouraging, making some minor adjustments may strengthen the feedback. Autonomy support is an essential element of motivational interviewing based feedback and may be a source of strengthening the feedback session (Markland et al., 2005). Resnicow and McMaster (2012) suggest a three stage

model for using motivational interviewing in health care settings to maximize autonomy support: 1) exploring personal reasons for behavior and ambivalence with change, 2) guiding the individual toward the possibility of change, and 3) choosing a behavior change goal and making an action plan. In the current study, the interventionist spent the most of the feedback time exploring the reasons why parents would make changes to their communication style and eliciting change talk linked to broader values and wishes for the adolescent. However, more behavior change may have occurred if the interventionist spent time setting a specific goal with the parent to change a communication skill when talking with their adolescent. The interventionist could provide a menu of choices regarding the area of improvement to discuss (i.e. talk about using more reflection or using affirmations) as a way to promote autonomy in behavior change. The collaborative nature of the feedback process may have been further highlighted by creating the paper summary of the feedback could be created with the parent as the feedback is discussed, instead of presenting it as a preset outline of the feedback. In addition, after the completion of the feedback several parents reported feeling uncomfortable applying these skills in the last conversation with their adolescent. More attention could be focused on exploring this ambivalence with motivational interviewing consistent methods to support autonomy such as empowering the parent, supporting self-efficacy, and rolling with resistance to change.

With these propitious results, the individualized parental feedback should be considered for use in clinical settings. There is a great need for interventions for parents of adolescent with chronic illness to aid in positive parenting behaviors (Essleston, Palmero, Fisher, & Law, 2012). The current study demonstrates the effectiveness of a

brief intervention for parents of adolescents with type 1 diabetes, and due to the broad range impact of parental communication with adolescents, a similar individualized feedback may be useful in other pediatric populations. Examination of the effects of individualized feedback in other chronic illness populations may improve the impact of such an intervention.

Conclusions

The results from this study are promising in that a brief individualized feedback session resulted in behavioral improvements in parent communication skills and relational changes, observed when parents and youth discussed challenges of diabetes management. Given the feasibility and cost-effectiveness of the feedback session, this study adds to the growing knowledge of viable interventions in the current health care climate. Further studies may examine the clinical implementation of such an intervention and address questions regarding incremental benefits of follow-up sessions.

APPENDIX A

FEEDBACK DECISION ALGORITHM

Identify two parental strengths in communication skills.

Definition: Strengths are the highest rated, least complex communication skills.

Step 1: Skills scored as "2"

If more than two skills receive a score of 2, use the skills that appear highest on the rating form.
If there is only one skill that received a score of "2", continue to step 2.

Step 2: Combination of skills scored "2" and "1"

Use the skill that scored "2" and the skill that received a score of "1" that appear highest on the rating form.
If there are no skills that scored "2", use the two skills that received scores of "1" that appear highest on the rating form.
If there are not two skills that received scores of "2" or "1", continue to step 3.

Step 3: Basic communication skills

Identify strengths as top two skills on rating form as parental strengths.

Identify one parental weakness in communication skills.

Definition: Weaknesses are the lowest rated, least complex communication skill.

Step 1: Skills scored as "0"

If more than two skills receive a score of 0, use the skills that appear highest on the rating form.
If there is only one skill that received a score of "0", continue to step 2.

Step 2: Combination of skills scored "0" and "1"

Use the skill that scored "0" and the skill that received a score of "1" that appear lowest on the rating form.
If there are no skills that scored "0", use the two skills that received scores of "1" that appear lowest on the rating form.
If there are not two skills that received scores of "0" or "1", continue to step 3.

Step 3: Assign Refelctions

Identify general and feelings refelctions as weakness.

APPENDIX B

PARENT COMMUNICATION RATING TEMPLATE

Rate the following behaviors while observing the parent speak with their youth during the session.

Area for Feedback	Notes/Quotes	Relative Feedback
1. Express care/love/concerned		0 1 2
2. Respond with understanding rather than confrontation		0 1 2
3. Use of humor/positive demeanor (only listed as a strength for feedback)		0 1 2
4. Reflective Statements: short restatements of person's thoughts/feeling		0 1 2
A. General Reflection <ul style="list-style-type: none"> • Direct Restatement • Paraphrase 		0 1 2
B. Feeling Reflections <ul style="list-style-type: none"> • Repeating emotion words • Empathetic Reflection - reflect emotional undertone or statement 	Provide feedback on A & B together	
C. Affirmation Reflections <ul style="list-style-type: none"> • Acknowledge efforts/behavior to change • Point out strengths or previous success 		0 1 2
5. Question to Reflection Ratio Tally of Questions: (feedback also given if no/few questions were asked)	Tally of Total Reflections:	Q:R Goal 2:1
6. Open-ended questions		0 1 2

APPENDIX C

FEEDBACK SCRIPT**Introduction to Feedback:**

“Now I would like to share some feedback with you. All parents have their strengths as well as things they can improve upon when it comes to talking to their teens. I would like to share what I observed today about your communication style during the conversation you just had with (NAME). What questions or concerns do you have before we continue?” (Reflect)

- Address any concerns – reflect, empathize, and offer explanations, if necessary (e.g., we would like to help in the best way we know how, it’s up to you what you do with this information, we will suggest ways to improve but you don’t need to do them if you don’t want)

“How did you think you did talking and listening in this conversation with (NAME)?” (Reflect)

- Support strengths and clear caring feelings in the relationship.

Strengths: (Ask – Tell – Ask – Elicit change talk to maintain strengths)

“Let’s start with your strengths...”

- *“What do you think your top two strengths were in the way you talked to (NAME) today?”* (Reflect)
- *“As I watched your conversation, I also noted some of your strengths as well. I’ve noted them here on this form for you to take home. I’d like to go through what I noticed if that’s okay with you.”*
- Use handout to guide discussion. Explain the top two relative strengths – provide examples of when the parent did each thing (in the parent’s words)
 - *“How does this fit what you experienced?”* (Reflect)
 - Using similar language to that on the printed feedback sheet.
 - Provide examples – write specifics on the sheet.
- Elicit change talk to maintain strengths
 - *“What do you think the advantages of (strength 1) and (strength 2) are when you talk with (NAME)?”* (Reflect)
 - *“On a scale from 1-10 with 1 being not at all important and 10 being extremely important, how important is it to you to continue (name strengths) when you talk to (NAME)?”* (Reflect)
 - Provide visual 1-10 with scale.
 - *“What makes you a (#), instead of an (#-1)?”* (Reflect)
 - Affirm and support whenever possible
 - Use amplified reflections of change talk.
 - Build upon change talk by asking: *“why is it important for you to (reason for change)?”*
- Adhere to basic motivational principals during this process

- Ask open ended questions (like those above)
- Empathize (e.g., it's tough)
- Reflect (e.g., You would like to change that part of your relationship)
- Roll with resistance (e.g., You don't see this as one of your main strengths.)

Weaknesses: (Ask – Tell – Ask – Elicit change talk to improve weaknesses)

“As I previously mentioned, all parents, even amazing ones, have aspects of communication that they can improve upon.”

- *“How do you think you could have communicated better with (NAME) in your conversation today?”* (Reflect)
- *“Here (pointing to handout) I have noted some of the things I noticed that you might consider working on when you talk with (NAME).”*
- Explain the lowest relative weakness – providing examples of when the parent did each thing (using the parent's words if possible).
 - *“What do you think about trying (skill) when you talk with (NAME)?”* (Reflect)
 - Using similar language to that on the printed feedback sheet.
 - Provide examples.
 - Ask: *“Can you think of some other things you might say to (skill)?”* Write them on the sheet. (Praise)
 - *“Let's try one more...If you child said _____, what could you say?”* (Praise)
 - *“What do you think about this?”*
- Elicit change talk
 - *“What do you think the advantages of improving X and Y when you talk with (NAME)?”* (Reflect)
 - *“On a scale from 1-10 with 1 being not at all important and 10 being extremely important, how important is it to you to continue to improve X and Y with your child?”* (Reflect)
 - Provide visual 1-10 with scale.
 - *“What makes you a (#), instead of an (#-1)?”* (Reflect)
 - Use amplified reflections of change talk.
 - Build upon change talk by asking: *“why is it important for you to (reason for change)?”*
- Remember to adhere to the basics of motivational interviewing:
 - Ask open ended questions
 - Empathize (e.g., it's tough)
 - Reflect (e.g., You would like to change that part of your relationship.)
 - Roll with resistance (e.g., “It's really your choice to take this information or leave it.” Or directly reflect ambivalence)
 - Affirm and support whenever possible
 - Express confidence in their ability to change

Summary statement:

- *“It is clear that you care about (child’s name). Thank you for allowing me to review some of your strengths with you and provide you some ideas for thing to improve when you talk with your teen.”*
- *“What was it like to get this type of feedback from me today?” (Reflect)*

“Next, I will have you and (child’s name) have another conversation. I like you to try to use some of the communication techniques in this conversation as practice. How to do you feel about trying the skills we discussed?”

- Affirm strengths and ability to attempt change and support strengths demonstrated during feedback.
- Reflect back reasons for change.

APPENDIX D

PARENT FEEDBACK HANDOUT TEMPLATE

It is clear from watching you over the past few minutes that you really care about each other.

It was also great that you...

Menu of Strengths:

You show your teen that you enjoy talking with him/her. You did this by...

- (1. Express care) You clearly stated that you (cared for/loved/were concerned about) your teen.
- (2. Respond with Understanding) When your teen expressed (stress/distress/ambivalence), you told him/her that you understood them.
- (3. Humor) You laugh/joke/use humor with your child that shows that you enjoy talking with him/her.

You show your teen empathy, which shows teen's name that you heard and understand what he/she said. You did this by...

- (4A. Reframe) You took what teen's name said and said it in another way, which showed you were listening and allowed him/her to see the situation differently.
- (4B. Reflection – feelings/repeat emotion words) You repeated the emotion words/statements teen's name used when he/she was describing how he/she felt about the situation.
- (4B. Reflection - feelings) You put feeling words to the concerns/stress/situation teen's name was talking about to show him/her you understood how he/she was feeling.
- (6. Open-ended questions) You ask your teen questions in a way that allows teen's name to express his/her thoughts and feelings openly.

You point out your teen's strengths, which helps him/her feel understood and confident to make changes in the future. You did this by...

- (4C. Appreciation) You told that you appreciate his/her effort to manage his/her diabetes care.
- (4C. Efforts to change) You told teen's name that you noticed he/she had made steps towards making larger changes in his/her diabetes care.
- (4C. Strengths) You helped your child build confidence by (pointing out his/her previous success with/telling him/her you were confident he/she could handle the) barriers to diabetes care.

There are a few things I noticed and you may want to consider trying to build even stronger communication.

Menu of Suggestions:

(1. Express care) It might be helpful if you clearly stated that you (cared for/loved/were concerned about) your teen.

- This shows teen's name that you care about him/her.
- You could try to say something like:
 - "You and your health are really important to me."
 - "I am really concerned about you."

(2. Respond with Understanding) You might want to consider telling teen's name that you understand him/her when he/she expressing his/her feeling/stress/distress.

- This shows teen's name that you care about him/her and understand how he/she is feeling.
- You could try to say something like:
 - "I know diabetes care is hard to do."
 - "I hear that you wish you didn't have to deal with all this diabetes care."
 - "I understand that ..."

(4A. Reflection) You might want to try repeating back the concerns/stress/situation teen's name tell you about when you are talking.

- This shows teen's name that you are listening to what he/she is saying about diabetes management and you understand his/her perspective.
- For example, after your child describes not knowing how to count carbs when he/she acts outside of your house, you could say something like:
 - "It is a big challenge to figure out how to count carbs when you aren't eating at home. That could be frustrating."
 - "Counting carbs at restaurants and friend's houses can be really challenging. It can feel overwhelming."
- (4B. Repeat emotion words) You could also try repeating the emotions you hear teen's name describes when you are talking.
 - For example, you could try saying:
 - "It's really annoying to stop before practice to test"
 - "You get mad when I ask to see your meter each night."

(4C. Strengths) You might want to try highlighting teen's name's strengths and previous success he/she has had caring for his/her diabetes in the past.

- This shows respect for your teen and can increase positive feelings about the conversation.
- It also can help teen's name feel more confident to make other changes with diabetes management.
- For example, you could try saying:
 - "You do a nice job coming to me to when your blood sugar is high."
 - "You are great at counting carbs."
 - "You always take your supplies with you when you go to your grandparents."

(4C. Efforts to change) It might be helpful if you tell teen's name that you noticed he/she had made steps towards making larger changes in his/her diabetes care.

- This shows respect for your teen and can increase positive feelings about the conversation.
- It also can help teen's name feel more confident to make other changes with diabetes management.
- For example, you could try saying:
 - "I noticed you have been using the calculator on your phone to quickly calculate the carbs in your food."
 - "I like how you have started checking your blood sugar when you get home from basketball practice."

(5/6. Open-ended questions) It might be helpful if you ask teen's name open-ended questions, instead of fixed responses like yes/no.

- This helps conversations flow more easily and feels less threatening.
- This also shows your child that you are interested in their ideas, not just answering a specific question.
- For example, you could try saying:
 - "What is it like to count carbs at school?" instead of "do you count carbs at school?"
 - "How are you doing giving insulin and testing your blood sugar at school?" instead of "Are you completing all your diabetes care at school?"

APPENDIX E

Complete Set of Measures

Family Information Form

Please tell us about your child:

What is your child's gender?

M Male F Female

What is your child's birth date?

When was your child diagnosed with diabetes? (month/year)

M	M	D	D	Y	Y	Y	Y
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

M	M	Y	Y	Y	Y
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Is your child Hispanic or Latino?

y Yes N No

What is your child's racial/ethnic background?

- | | |
|--------------------------|----------------------------------|
| 1 Asian/Pacific Islander | 4 American Indian/Native Alaskan |
| 2 Black/African America | 5 Bi-racial |
| 3 White/Caucasian | 6 Other: _____ |

Pease tell us about yourself:

What is your Gender?

M Male F Female

Satisfaction Survey

Please answer the following questions about your experience in this research study. The answers you provide will help improve the study for families in the future.

	Not At All Satisfied						Extremely Satisfied
1. How satisfied were you with the information you received during your research meeting?	1	2	3	4	5	6	7
2. How helpful do you think the information you received during your research meeting was for helping you talk to your child about diabetes care?	1	2	3	4	5	6	7
3. Did the information you received during your research meeting increase the likelihood of you talking to your child about diabetes care?	1	2	3	4	5	6	7
4. How helpful do you think the information you received during your research meeting was for improving your child's diabetes care?	1	2	3	4	5	6	7

5. What was the most helpful about the information you received?

6. What was the least helpful about the information you received?

Thanks for completing the clinic research session. Please complete the follow questions describing how you have been doing since the research session.

1. Since we met, have you followed up on the recommendations provided? 1 Yes 2 No

If so, describe what you have done?

2. To what extent did you find the information helpful?

1	2	3	4	5
Not at all helpful				Extremely helpful

3. To what extent did you notice any changes in your youth's communication with you?

1	2	3	4	5
No change				A lot of change

—Adolescent Follow Up

1. To what extent did you notice any changes in your parent's communication with you?

1	2	3	4	5
No change				A lot of change

Adolescent Evaluation of Parent Communication

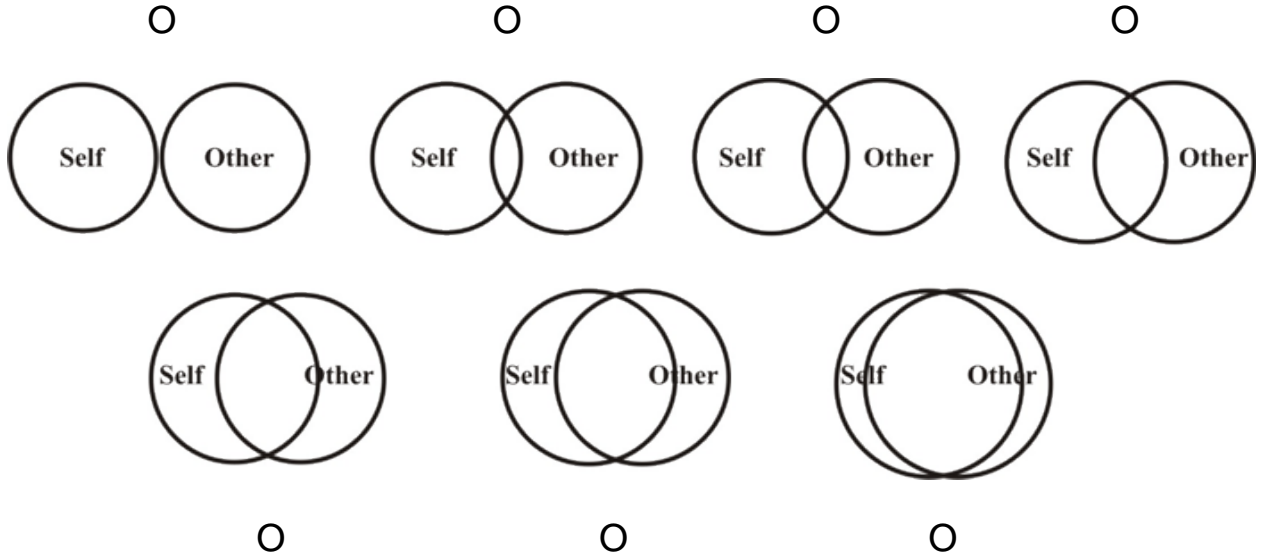
Please rate each response on the scale below relating **the conversation you just had** with your parent.

In your conversation, how much did your parent:

	Not At All	Only a Little	Some	A Great Deal
1. Help you recognize the need to change your behavior.	1	2	3	4
2. Focus only on your weaknesses.	1	2	3	4
3. Help you to talk about changing your behavior.	1	2	3	4
4. Act as a partner in your behavior change.	1	2	3	4
5. Helped you to discuss your need to change your behavior.	1	2	3	4
6. Make you feel distrustful of him/her	1	2	3	4
7. Help you examine the pros and cons of changing your behavior.	1	2	3	4
8. Help you to feel hopeful about changing your behavior.	1	2	3	4
9. Argue with you to change your behavior.	1	2	3	4
10. Change the topic when you became upset about changing your behavior.	1	2	3	4
11. Push you forward when you became unwilling to talk about an issue further.	1	2	3	4
12. Act as an authority on your life.	1	2	3	4
13. Tell you what to do.	1	2	3	4
14. Argue with you about needing to be 100% ready to change your behavior.	1	2	3	4
15. Show you that she/he believes in your ability to change your behavior.	1	2	3	4
16. Help you to feel confident in your ability to change your behavior	1	2	3	4

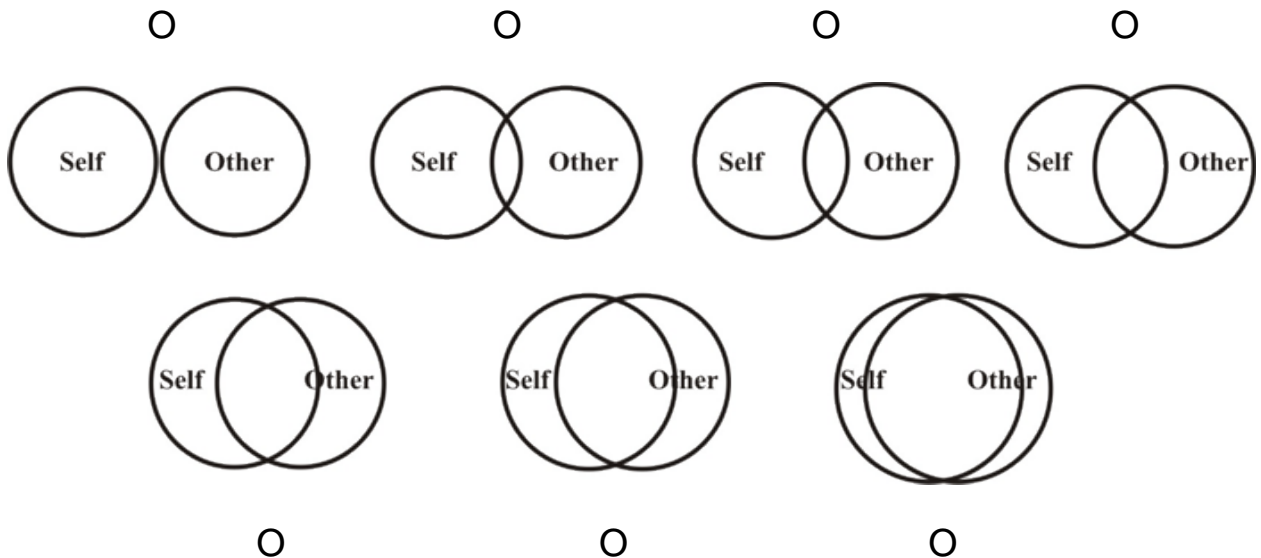
Inclusion of Other – Parent

Please indicate the picture that best describes your current relationship with your child.



Inclusion of Other – Adolescent

Please indicate the picture that best describes your current relationship with your parent.



Measure of Intimate Event - Parent

Specific to this conversation you just had with your child, please indicate how true the following statements are:

	Not at all true	Not very true	Moderately true	Very true
1. My teen told me about his/her feelings or emotions.	0	1	2	3
2. I listened attentively during this conversation.	0	1	2	3
3. The conversation felt pleasant.	0	1	2	3
4. My teen shared something personal or private during this conversation.	0	1	2	3
5. I feel closer to my teen following this conversation.	0	1	2	3
6. I was critical of my teen.	0	1	2	3
7. My teen appeared to feel comfortable revealing his/her hurt feelings to me.	0	1	2	3
8. I feel more distant to my teen following this conversation.	0	1	2	3
9. I expressed positive feelings toward my teen.	0	1	2	3
10. During the conversation, I felt anxious, like I was walking on eggshells.	0	1	2	3
11. We quarreled during this conversation.	0	1	2	3
12. My teen expressed a need, wish, or want.	0	1	2	3
13. I showed support and caring for my teen during the conversation.	0	1	2	3
14. The conversation between me and my teen felt warm and close.	0	1	2	3
15. I believe I understood my teen.	0	1	2	3
16. My teen was critical of me.	0	1	2	3
17. My teen shared his/her true feelings during the conversation.	0	1	2	3

Measure of Intimate Event - Adolescent

Specific to this conversation you just had with your parent, please indicate how true the following statements are:

	Not at all true	Not very true	Moderately true	Very true
1. I told my parent about my feelings or emotions.	0	1	2	3
2. My parent listened closely to me during this conversation.	0	1	2	3
3. The conversation felt pleasant.	0	1	2	3
4. I shared something personal or private during this conversation.	0	1	2	3
5. I feel closer to my parent after this conversation.	0	1	2	3
6. I was critical of my parent.	0	1	2	3
7. I felt safe and comfortable opening up to my parent.	0	1	2	3
8. I feel more distant to my parent after this conversation.	0	1	2	3
9. My parent expressed positive feelings toward me.	0	1	2	3
10. During the conversation, I felt anxious, like I was walking on eggshells.	0	1	2	3
11. We quarreled during this conversation.	0	1	2	3
12. I expressed a need, wish, or want.	0	1	2	3
13. My parent showed support and caring during the conversation.	0	1	2	3
14. This was a warm conversation between me and my parent..	0	1	2	3
15. My parent understood me.	0	1	2	3
16. My parent was critical of me.	0	1	2	3
17. It was difficult for me to open up to my parent.	0	1	2	3

Parenting Self Agency

Please respond to each of these questions about your relationship with your child.

	Rarely						Always
1. I feel sure of myself as a mother/father.	1	2	3	4	5	6	7
2. I know I am doing a good job as a mother/father.	1	2	3	4	5	6	7
3. I know things about being a mother/father that would be helpful to other parents.	1	2	3	4	5	6	7
4. I can solve most problems between my child and me.	1	2	3	4	5	6	7
5. When things are going badly between my child and me, I keep trying until things begin to change.	1	2	3	4	5	6	7

Confidence in Diabetes Self-Care

"I believe talking with my parent can help me..."	No, I am sure I cannot				Yes, I am sure I can
	(1)	(2)	(3)	(4)	(5)
1. Plan my meals and snacks according to my dietary guidelines.	1	2	3	4	5
2. Check my meals and snacks according to dietary guidelines.	1	2	3	4	5
3. Perform the prescribed number of daily insulin injections.	1	2	3	4	5
4. Adjust my insulin for exercise, traveling, or celebrations.	1	2	3	4	5
5. Adjust my insulin when I am sick.	1	2	3	4	5
6. Detect high levels of blood glucose in time to correct.	1	2	3	4	5
7. Detect low levels of blood glucose in time to correct.	1	2	3	4	5
8. Treat a high blood glucose correctly.	1	2	3	4	5
9. Treat a low blood glucose correctly.	1	2	3	4	5
10. Decide when it's necessary to contact my doctor or diabetes educator.	1	2	3	4	5
11. Ask my doctor questions about my treatment plan.	1	2	3	4	5
12. Keep my blood glucose in the normal range when under stress.	1	2	3	4	5
13. Check my feet for sores or blisters every day.	1	2	3	4	5
14. Ask my friends or relatives for help with my diabetes.	1	2	3	4	5
15. Inform colleagues/others of my diabetes, if needed.	1	2	3	4	5
16. Keep my medical appointments.	1	2	3	4	5
17. Exercise two to three times weekly.	1	2	3	4	5
18. Figure out what foods to eat when dining out.	1	2	3	4	5
19. Read and hear diabetes complications without getting discouraged.	1	2	3	4	5

Diabetes Social Support Questionnaire – Adolescent

First, who is the person who helps you the most with your diabetes care?

Now, each question has two parts. The first part asks how often this person helps you with your diabetes care; you can select never, less than 2 times a month, twice a month, once a week, several times a week or at least once a day. The second part of each question asks how much of a help this is for you; please decide if this not at all helpful, somewhat helpful or very helpful. Please be sure to answer both parts of each question.

	How often does this person...						How supportive (helpful) is this to you?		
	Never	Less than two months	Twice a month	Once a week	Several times a week	At least once a day	Not at all	Some-what	Very
1. Praise you for giving yourself insulin correctly or on time?	1	2	3	4	5	6	1	2	3
2. Let you know they understand how difficult it is to take insulin?	1	2	3	4	5	6	1	2	3
3. Let you know that they understand how hard it is to test blood sugars every day?	1	2	3	4	5	6	1	2	3
4. Praise you for testing your blood sugar on your own?	1	2	3	4	5	6	1	2	3
5. Congratulate or praise you for exercising regularly?	1	2	3	4	5	6	1	2	3
6. Encourage you to join an organized sports activity?	1	2	3	4	5	6	1	2	3
7. Are available to listen to concerns or worries about your diabetes care?	1	2	3	4	5	6	1	2	3
8. Tell you how well you've been doing with your diabetes care?	1	2	3	4	5	6	1	2	3
9. Encourage you to do a good job of taking care of your diabetes?	1	2	3	4	5	6	1	2	3
10. Understand when you sometimes make mistakes in taking care of your diabetes?	1	2	3	4	5	6	1	2	3
In the past two weeks, how much has your parent	No support at all						Extremely Supportive		

supported you with your
diabetes care?

1

2

3

4

5

6

7

8

9

Diabetes Family Conflict –Parent

During the PAST TWO WEEKS, I have argued with my child about...

	Almost Never	Sometimes	Almost Always
1. Remembering to give shots or to bolus (pump)	1	2	3
2. Taking more or less insulin depending on results	1	2	3
3. Remembering to check blood sugars	1	2	3
4. Remembering clinic appointments	1	2	3
5. Giving shots or boluses (pump)	1	2	3
6. Meals and snacks	1	2	3
7. Results of blood sugar monitoring	1	2	3
8. The early signs of low blood sugar	1	2	3
9. What to eat when away from home	1	2	3
10. Making appointments with dentists and doctors	1	2	3
11. Telling teachers about diabetes	1	2	3
12. Telling friends about diabetes	1	2	3
13. Carrying sugar/carbs for reactions	1	2	3
14. School absences	1	2	3
15. Supplies	1	2	3
16. Telling relatives about diabetes	1	2	3
17. Rotating injection sites or infusion sets (pump)	1	2	3
18. Changes in health (like weight or infections)	1	2	3
19. Logging blood sugar results	1	2	3

APPENDIX F

PARENT COMMUNICATION BEHAVIORAL CODING MANUAL

Purpose of Behavioral Coding: Record the presence of person-centered communication skills and critical communication style in parent-adolescent conversations regarding challenges with diabetes care.

Procedure of Coding:

- Raters will be trained on the constructs and specific person-centered communication skills through a series of readings, training meetings and practice coding videos.
- Raters will then be assigned to a subset of parent-adolescent conversations to code.
- **Each conversation will be watched twice.**
 - The first time, raters will get a global feel in the conversation of the parent behavior and the adolescent's response, making note of specific examples.
 - The second time, raters will tally the number of questions/reflection as well as continue to make note of specific examples.
 - During both viewings, raters may pause and rewind the video as many times as needed to make a confident rating.
 - Following the completion of the second viewing, the rater will select a final rating for each code and tabulate the questions to reflections ratio.
- If video is more than 30% inaudible, it cannot be coded due to not being able to catch a representative amount of conversation.
- In cases where the parent and adolescent go beyond 5 minutes by a few statements, the statements beyond the 5 minutes will be included in the coding.
- In cases in where the parent seems to be addressing the clinician, the statements made will still count towards the coding of the parent-adolescent communication.

Rating Scale:

Each of the listed types of communication will be rated on a 0-2 likert scale. Raters should make notes throughout the video clip of the types of behaviors observed in each category. Following the completion of the video, raters will code each communication skill/style by providing a score from 0-2.

- **0 = Not present at all**
- **1 = Somewhat present**
- **2 = Very/clearly present**

Person-centered communication skills:

Express care/love/concern: Parents expressions care for their children are communicated directly (e.g. "I love you." "I am really concerned about your diabetes care.") and indirectly with statements (e.g. "Completing you diabetes care is really important."), paraverbals (e.g. "uh huh," "huh") and behaviors like hugs, rubbing

adolescents back, being engaged in the conversation, paying close attention the adolescent or stating engagement in diabetes support behaviors.)

- Expressing care/love/concern *is not* telling the adolescent they “should” do things, focusing solely on the mistakes,
- Parents who use inclusive language (i.e. we, us, together) are often expressing care, love concern. They may also use collaborative statements to express concern.
- Problem solving is also a common way parents express concern indirectly.

Respond with understanding: Parents respond with understanding, as opposed to confrontation. This communication skill expresses to the adolescent a parent understands his/her perspective, feeling, and/or what he/she is saying.

- E.g. “I get it,” “I understand that...,” “I know.”
- Responding with understanding *is not* telling the adolescent they are wrong or should be acting/feeling/thinking in a different way or being confrontational. It is also not telling the adolescent they are silly/stupid/less than for acting/feeling/thinking.
- The tone used in the delivery is crucial to determine if a statement conveys understanding.
- Reflective statements are also one way of responding with understanding.

Reflective statements: Parents can show their adolescent they heard and understand them by making accurate reflective statements. This is a skill that demonstrates accurate empathy. During adolescence, it is common for adolescents to feel misunderstood and not accepted by their parents and other adults. Reflective statements can facilitate the conversation, instead of getting trapped in a circle of feeling misunderstood. These statements also communicates that the parent is not arguing with the adolescent about what they said. Reflective statements *summarize* what was said in the current conversation.

- Reflections can be a single word. For example, a teen says “I had apple sauce at halftime” and the parent says “apple sauce.”

Restatements are not always reflections:

- Reflection or critical statement
 - A parent may restate a comment made by the adolescent as mockery or invalidation. These restatements should not be coded as a reflection.
 - The tone of voice used in a restatement can provide information regarding whether it is a reflection or critical communication.
- Reflection or question
 - A parent may restate a comment or theme stated by the adolescent with the intention of asking a question or gaining specific clarification. These restatements should not be coded as a reflection, and should be tallied as question.
 - When this is encountered, a coder should determine if the parent restated something previously expressed by the adolescent to be sure the parent is not asking about new information.

- The inflection used at the end of a restatement can provide information to determine if the statement is a question or a reflection.
- The coder may also find it useful to consider the parent's overall communication style (i.e. if the parent often add inquisitive inflection at the end of statements) and to take the perspective of the adolescent to determine how the restatement would be received.
- If there are two statements (one reflection and one questions), then it should be counted as two separate parts (i.e. one reflection and one question). The intent of the communication is then to provide a reflection and check for accuracy from the speaker.
 - For example: "You are not very motivated about this. Are you?" This should be coded as one feeling reflections (motivated) and one close ended question.

Reflections are not:

- Simple agreement (e.g. "I know" "I agree" "Yeah")
- Problem-solving comments
- However, reflections may be made before or after agreement or problem-solving comments.

There are three types of reflective statements, each of which let the adolescent know the parent heard and understood what he/she was saying.

General Reflection: Parents can make reflective statement by repeating or rephrasing what the adolescent has said. For example:

Teen: "I never remember to check my blood sugar before baseball practice because I'm rushing to get changed and warm up."

Parent: "Checking your blood sugar before baseball is one more thing you have to do in a short amount of time."

- Reflections may also be specific to part of what the speaker said (e.g. "You are rushing to get into practice," "You often don't check before basketball.")
- General reflections can also be longer restatements that summarize a point the adolescent was making during the conversation. This counts as a single reflection.
 - If the adolescent comments in between the parents statements, the parent reflection *may* count as more than one reflection.

Feelings Reflection: Another type of reflection is restating/rephrasing the feelings expressed by the adolescent. For example:

Teen: "It's annoying that I have to take all my supplies with me whenever I leave the house."

Parent: "You get frustrated that you have to lug around your meter, insulin, syringes and snacks."

- Parents may also reflect a feeling that is implied by the adolescent that the adolescent did not label himself/herself.

- For example:
 - Teen: “I constantly have to be doing something to deal with my diabetes, shots, counting my food, entering my blood sugar, getting more supplies. I get so sick of it.”
 - Parent: “It sounds like your frustrated and overwhelmed by the amount of things you’re responsible for with your diabetes.”
- Examples of feelings that may be expressed include (but are not limited to) annoyed, motivated, frustrated, irritated, happy, proud, difficult (arduous) ...
- Empathetic reflections with emotional undertones may be statements generally about how hard/emotional diabetes care can be for the adolescent. This does not need to follow a specific statement of emotion by the adolescent.
- Feelings reflections can also be longer restatements that summarize a set of feelings the adolescent was having during the situation. This counts as a single reflection.
 - If the adolescent comments in between the parents statements, the parent reflection *may* count as more than one reflection.

Affirmation: A slightly different type of reflection is reflecting back a specific previous success or strengths of the adolescents. Parents can support their adolescent during a conversation by reminding the adolescent of personal strengths and previous success with diabetes care or other challenging situations. By highlighting the adolescent’s strengths and previous successes, the parent communicates to the adolescent that he/she believes the adolescent is capable of being successful in the future. **These reflections do not need to follow a prompt by the adolescent regarding the strength/success.** For example:

- “Remember last year during summer camp, you were able to maintain your blood pressure without my help.”
- “You do an good job leaving your pump on the table for me to look at when I get home from work.”
- “I like how you let me know when you are running low on supplies so I can be sure we get more.”
- “You have really taken on a lot more responsibility with your diabetes care.”
- “Even the doctor noticed how well you’ve been doing checking your blood sugar.”
- “You have gotten much better at counting carbs at restaurants.”
- “I am impressed by how well you do checking your blood sugar before breakfast.”
- “You have come a long way in the last few months and your A1c reflects that!”
- “I noticed that I don’t have to remind you as much to give insulin with your snacks because you do it on your own now.”

- In response to the teen putting himself down, the parent responds “I think you have a pretty good idea about counting carbs.”
- An affirmation is not a general comment praising overall behavior (i.e. “good job,” “that’s good,” “you do fine”).
 - If a parent makes an affirming comment about a specific behavior (i.e. “you have gotten better”) immediately following a topic of a specific behavior, this would count as a affirmation.
- Parents may make a series of statements that are reflective of the same strength or success. The tally of affirmation statements (included in the ratio of reflections) should be based on the number of separate behaviors being affirmed.
- When a parent adds a clause to an affirming statement that notes a weakness, this is not an affirmation.

For example: “You’ve gotten better testing at school but you still forget to X, Y, Z”
- If a parent uses a “we” statement to discuss a previous success, the coder should examine the behavior to which the statement is referring to in the statement. If the parent is referring to general care or a behavior primarily of the parent, this is not an affirmation because it does not reflect a strength or accomplishment of the adolescent. If the behavior is primarily done by the youth, then this should be coded an affirmation.

For example: “We’ve come a long way. It’s getting a lot better.” is not an affirmation because it is general improvements in care with shared success of parent and child. “We’ve been making improvements counting carbs, especially at school.” is a affirmation because counting carbs at school is a behavior of the youth.

Open ending questions: Parents can show their adolescents they are interested in their perspective and want to understand them better by asking open ended questions. Open ended questions pose questions in a way that elicit more than a one word answer. For example:

- “How did you do today with your diabetes care?”
- “What is it like to give your insulin and test blood sugar at school?”
- “Who else helps you with diabetes care when I’m not around?”
- “How can I better help you with counting carbs?”
- The opposite of open-ended questions are close questions, and these should be avoided. These types of questions only require a single word or a specific response. This gives the adolescent the feeling their thoughts and feeling are not valued and parents are only interested in specific information. For example:
 - “What time did you take your insulin?”
 - “Did you test your blood sugar like you’re supposed to?”
- Determining if a question is open or closed is based on the statement made by the parent. It does not take into account the response given by the adolescent.
- If the question posed is not a sentence, the coder should extrapolate the statement into a sentence to determine if it is open or close ended.

- For example: “Anything else?” should be extrapolated to “Is there anything else to say?” which is a close ended.
- Single words or phrases used for simple clarification **are not** counted as questions (i.e. “Right?” “Okay?” “You know?”)
 - “Huh” does not count a question because it is not a question.
 - Single word clarifications also do not count as questions (i.e. “sports?” “You did?”)
- If parent allows the teen time to respond to a question, it should be counted as a question. If parent does not give an appropriate span of time for the teen to respond after their question (e.g. continues conversation on the same topic or switching to other topics) then it is not counted as a question.
- Parents may make a series of questions – strung together without a pause for a response. These should be coded as a single question. The last question in the series should determine if it coded as an open or closed question.
- When parents provide options at the end of a question, this would be a closed question. If one response allows for elaboration (i.e “or something”) this is a open question.

Ratio of Questions to Reflections: Research shows that listeners feel most understood when there is a relative balance of questions and reflections. One way to measure this balance is with counting the question to reflection ratios. A tally of the number of questions asked (including both closed- and open-ended) as well as a tally of reflections (including general, feelings and affirmations) can provide important information regarding the communication style. A parent who ask questions and reflects back what the adolescent says can create an supportive conversation where the adolescent feels the parent is interested in his/her perspective as well as hears and understands what he/she has said.

Critical communication style:

Parents who engage in critical communication style are creating an environment that does not encourage open communication or the expression of the ideas and feelings. This type of communication style shuts down communication between parents and adolescents and does not create an environment in which the adolescent is encouraged to improve diabetes care. Critical parents may blame, negatively judge, and assign negative labels to the adolescent or his/her behavior (e.g. lazy, unmotivated). Critical communication includes the following:

- Statements that the other person should feel/think/act/experience in a particular way
- Noting the adolescent’s feelings/thoughts/experience as wrong
- Agreeing with the adolescent’s self-critical statements
- Statements that contradict or criticize the adolescent’s self-disclosure (especially private behaviors, feelings, opinions)
- Patronizing or condescending statements or other nonverbal behaviors that show contempt
- Nonverbal (e.g. rolling eyes, crossed arms, stern stares) and paraverbal (e.g. grunts, signs) communication may also convey critical communication.

- If parent has a general personality/communication style not specific to topic of hand.
- Parent has a stern/cold/curt tone of voice throughout the session.

APPENDIX G

TABLES

Table 1.
Conversation topics across dyads

Topic	Conversation	
	1	2
	% (n)	% (n)
Checking blood sugar throughout the day.	40.51 (32)	13.92 (11)
Counting carbohydrates accurately.	39.24 (31)	13.92 (11)
Giving insulin as prescribed.	5.06 (4)	6.33 (5)
Sharing responsibility and working together.	3.80 (3)	16.46 (13)
Complete diabetes care outside of home.	11.39 (9)	49.37 (39)

Table 2.
Examples of Observed Communication Coding

Communication Skill	Example Statements
Expressing care/love/concern	I'm concerned about your long-term health. Diabetes care is really important.
Responding with understanding	I know you don't like to [check] at sleepovers. I understand that it's hard to remember. I get it.
Reflective statements	Teen: I never remember to check my blood sugar before baseball practice because I'm rushing to get changed and warm up. Parent: Checking your blood sugar before baseball is one more thing you have to do in a short amount of time. Teen: I constantly have to be doing something to deal with my diabetes, shots, counting my food, entering my blood sugar, getting more supplies. I get so sick of it. Parent: It sounds like your frustrated and overwhelmed by the amount of things you're responsible for with your diabetes.
Affirmations	You are good at leaving your pump out for me to look at. Even Dr. X said how much your [blood glucose] testing has gotten.
Open-ended questions	What do you do at school [to test your blood glucose]? How can I help you with [counting carbohydrates]?
Critical Communication	It really isn't that hard to check [before and during sports practice]. You are smart enough to know better [than to not give insulin for snacks].

Table 3.
Descriptive Statistics of Sample

Adolescent Female	N	%
	44	55.7
Race		
White/Caucasian	71	89.9
African American	3	3.8
Bi-Racial	2	2.5
Asian/Pacific Islander	1	1.3
Biological Parent	77	97.5
	M	SD
Age	14.95	1.50
Age at Diagnosis	8.42	3.92
Parent		
Female	N	%
	68	86.1
Race		
White/Caucasian	71	89.9
African American	3	3.8
Asian/Pacific Islander	2	2.5
Two Caregiver Home	48	60.8
Bachelors Degree or higher	47	59.5
Family income >\$100,000	33	41.8

Table 4.
*Parental areas of strength and weakness discussed
 in feedback*

	N
Parental Strengths	
Express Love and Concern	15
Respond with Understanding	23
Positive Demeanor/Humor	4
Reflections	13
Affirmations	11
Open-Ended Questions	10
Total Strengths	76
Parental Weaknesses	
Express Love and Concern	1
Respond with Understanding	2
Reflections	14
Affirmations	9
Open-Ended Questions	13
Total Weaknesses	39

* The total number of strengths is greater than total dyad sample size (N = 39) because two strengths and a single weakness were provided to each parent.

Table 5.
T-test results of each type of person centered communication rating by group.

	Feedback		Education	
	M (SD)	t	M (SD)	t
Total Communication	-1.41 (1.98)	-4.44 ***	-.88 (2.28)	-2.43 *
Express love/concern	.00 (.56)	.00	-.13 (.40)	-1.96
Express understanding	-.10 (.55)	-1.16	-.20 (.72)	-1.75
Reflections	-.79 (.98)	-5.08 ***	-.43 (1.20)	-2.25 *
Affirmations	.08 (1.18)	.41	.08 (.94)	.52
Open-ended questions	-.59 (.68)	-5.44 ***	-.20 (.72)	-1.75

Note. *p < .05 , *** p < .001

*Table 6.
Group differences in critical communication pre and post-manipulation.*

	Pre-manipulation		Post-Manipulation	
	Feedback	Control	Feedback	Control
Critical communication	12.82% (N = 5)	15.00% (N = 6)	5.13% (N = 2)	15.00% (N = 6)

Table 7.
Impact of baseline diabetes-related social support and conflict on the effectiveness of the feedback manipulation

Diabetes Family Conflict Scale x	Feedback Group		Control Group	
	F	p	F	p
Observed Person-Centered Communication	1.07	.31	.68	.42
Observed Person-Centered Communication Skill	3.58	.07	.95	.34
Observed Critical Communication	1.47	.23	1.00	.32
Adolescent Evaluation of Parent Communication - Tech	2.67	.11	.18	.67
Adolescent Evaluation of Parent Communication - Rela.	4.71	.04*	.75	.39
Inclusion of Other Scale	.22	.64	5.23	.03*
Measure of Intimate Event – Empathetic Response	.03	.87	.04	.84
Measure of Intimate Event – Emotional Intimacy	.93	.34	.40	.53
Measure of Intimate Event – Intimate Disclosure	.42	.52	.01	.94
Parenting Self-Agency Scale	.44	.51	1.13	.30
Confidence in Diabetes Care Scale	1.02	.32	.19	.66
Diabetes Social Support Questionnaire x				
Observed Person-Centered Communication	.001	.97	2.73	.11
Observed Person-Centered Communication Skill	.003	.96	.000	1.0
Observed Critical Communication	.001	.98	3.06	.09
Adolescent Evaluation of Parent Communication - Tech	.15	.71	.47	.50
Adolescent Evaluation of Parent Communication - Rela.	.47	.50	.37	.55
Inclusion of Other - Adolescent	.27	.61	.37	.55
Measure of Intimate Event – Empathetic Response	.007	.93	.00	.99
Measure of Intimate Event –	.02	.90	.26	.62

Emotional Intimacy Measure of Intimate Event – Intimate Disclosure	.00	.99	.20	.66
Parenting Self-Agency Scale Confidence in Diabetes Care Scale	.13	.72	2.68	.11
	1.75	.20	.68	.42

Note. *p < .05.

APPENDIX H

FIGURES

FIGURE 1: CONSORT statement.

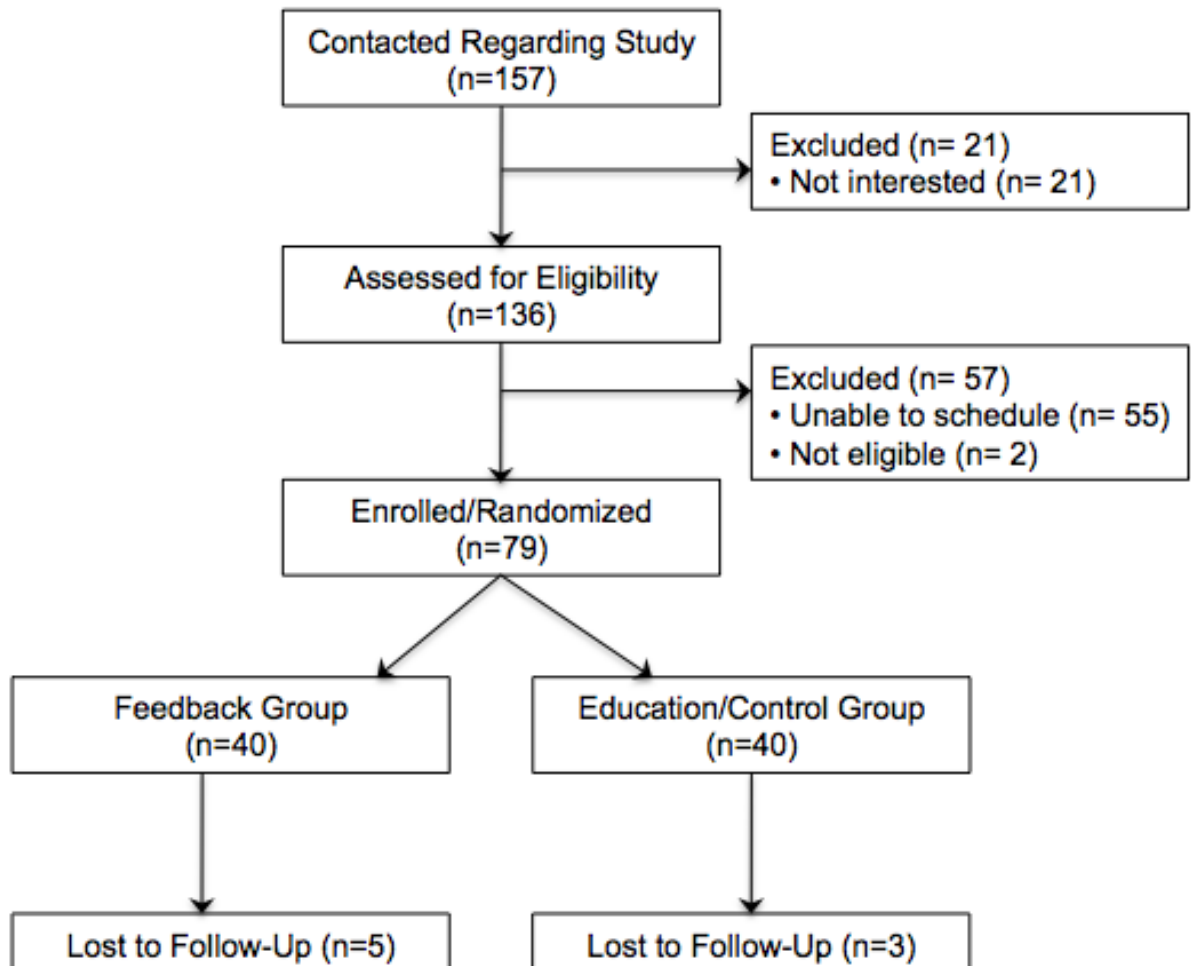
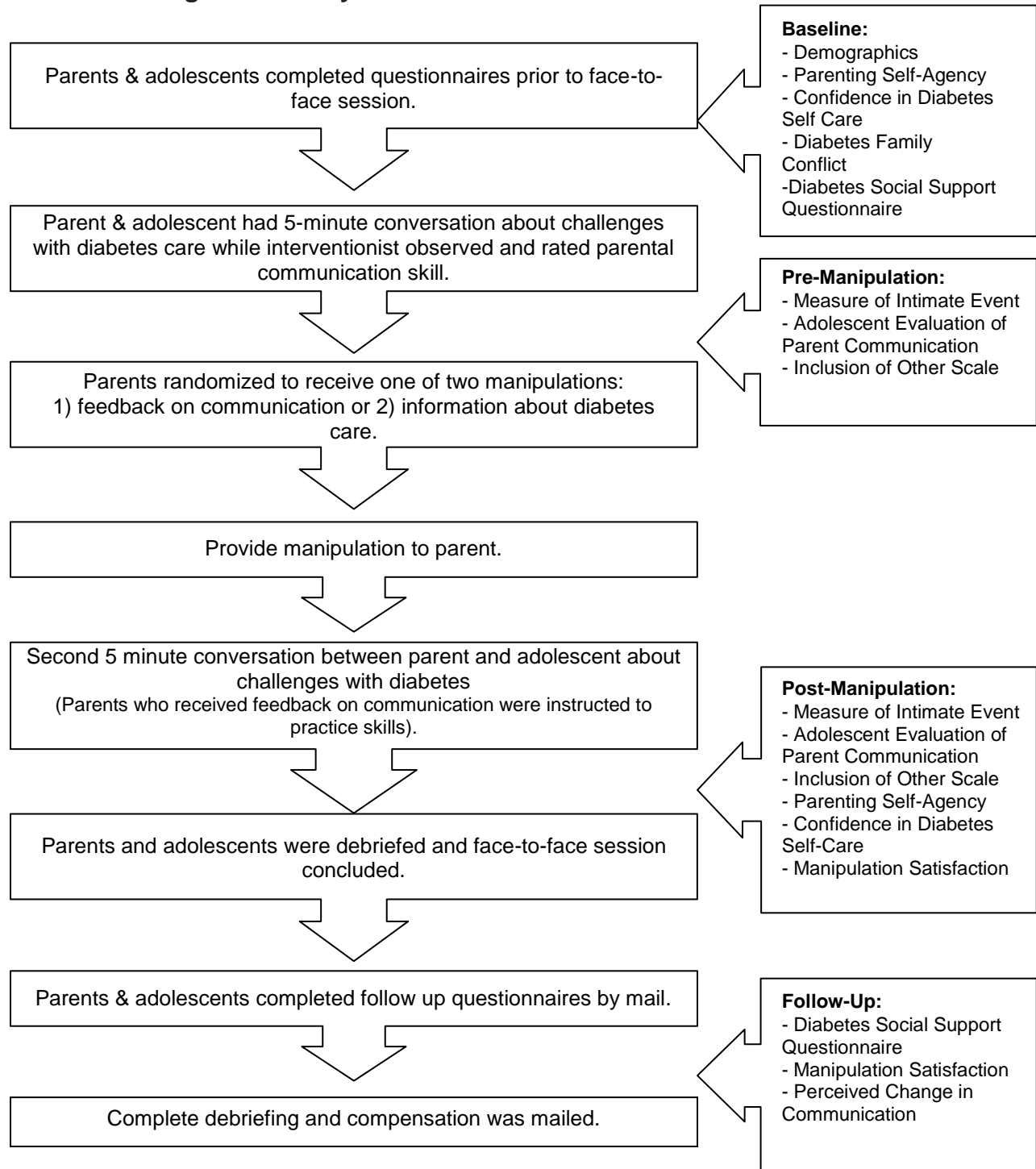


FIGURE 2: Diagram of study flow.**FIGURE 3: Change in Experience of Empathetic Responding – Reported by Youth**

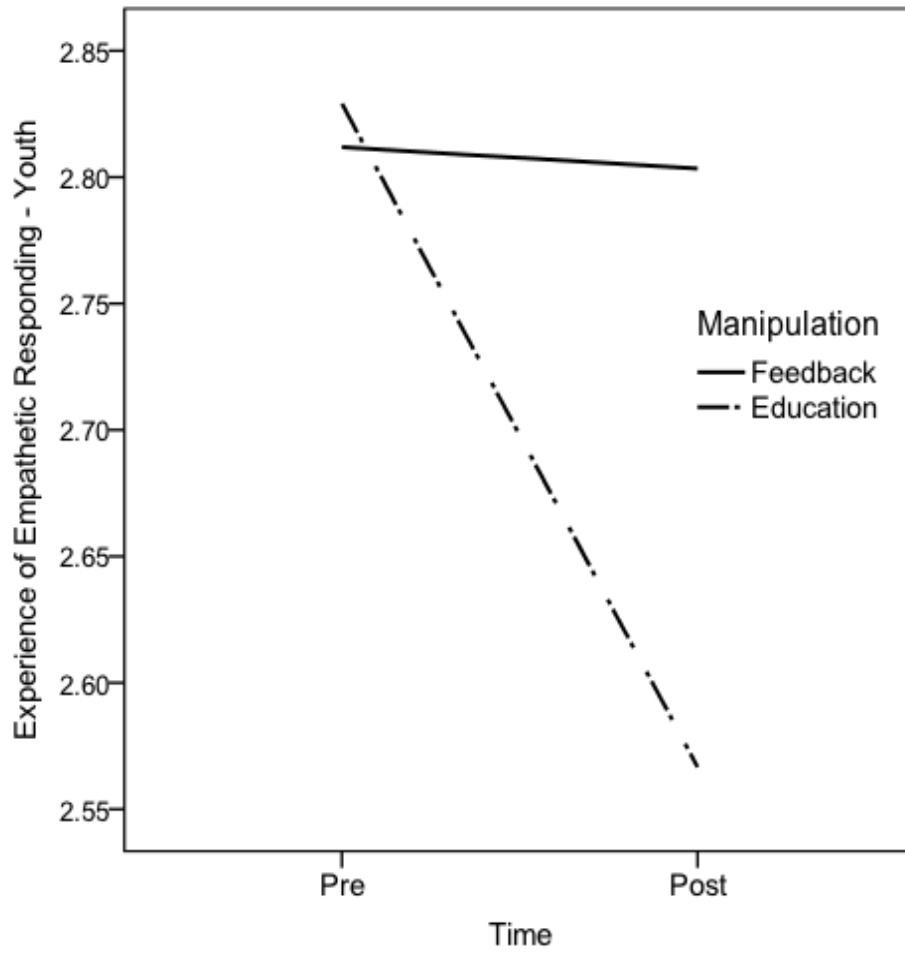


FIGURE 4: Change in Experience of Communication Emotional Intimacy Subscale - Reported by Youth.

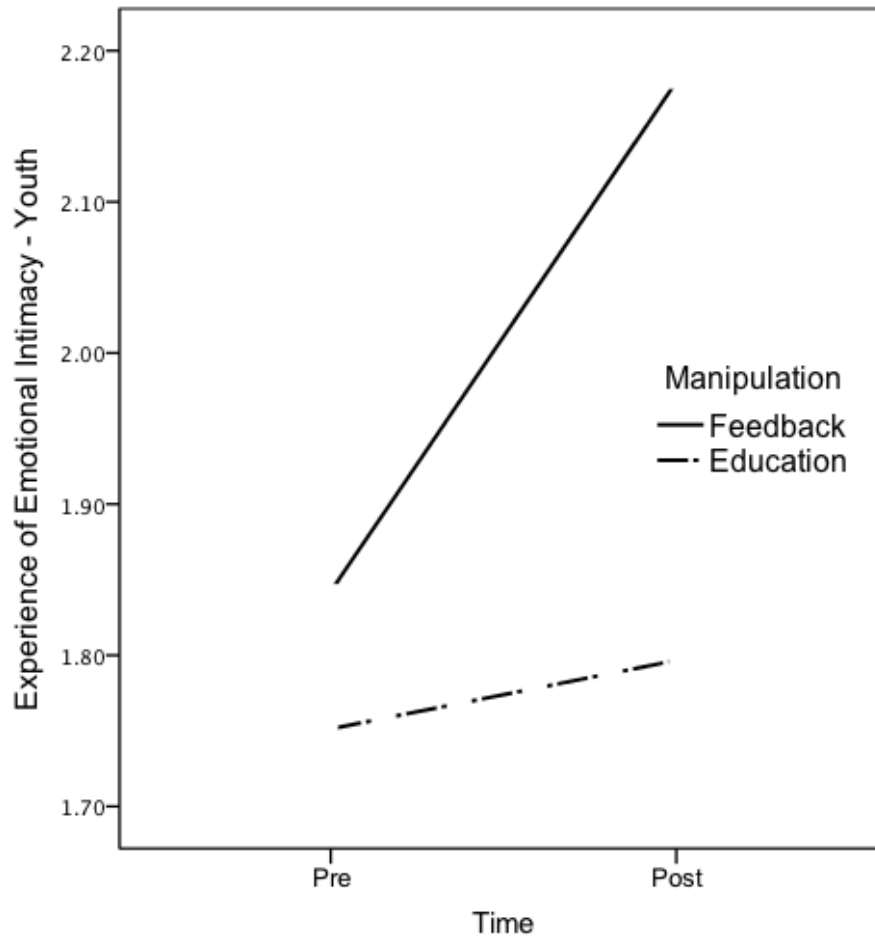


FIGURE 5. Changes in Confidence in Diabetes Care Scale.

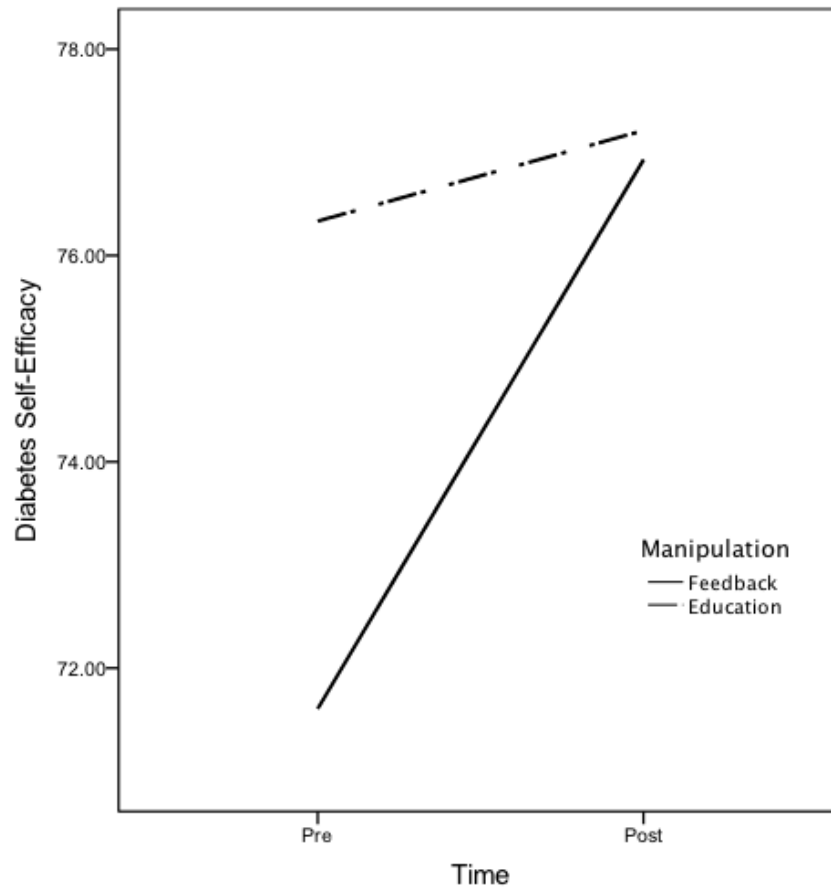


FIGURE 6. Changes in Parenting Self-Efficacy

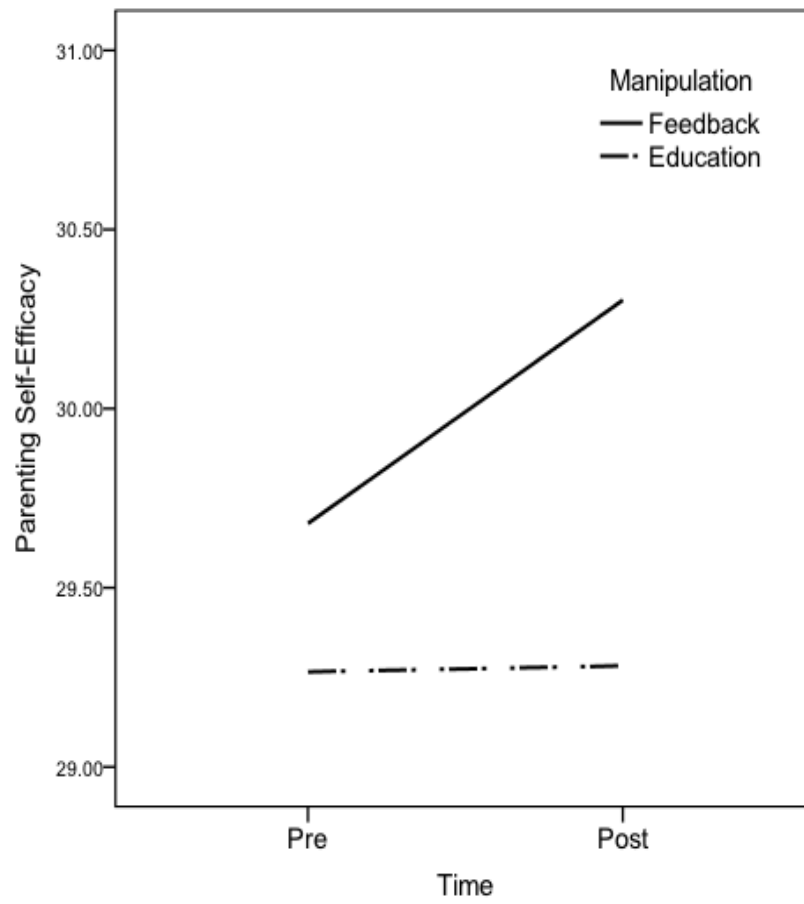


FIGURE 7. Changes in Diabetes Self-Efficacy

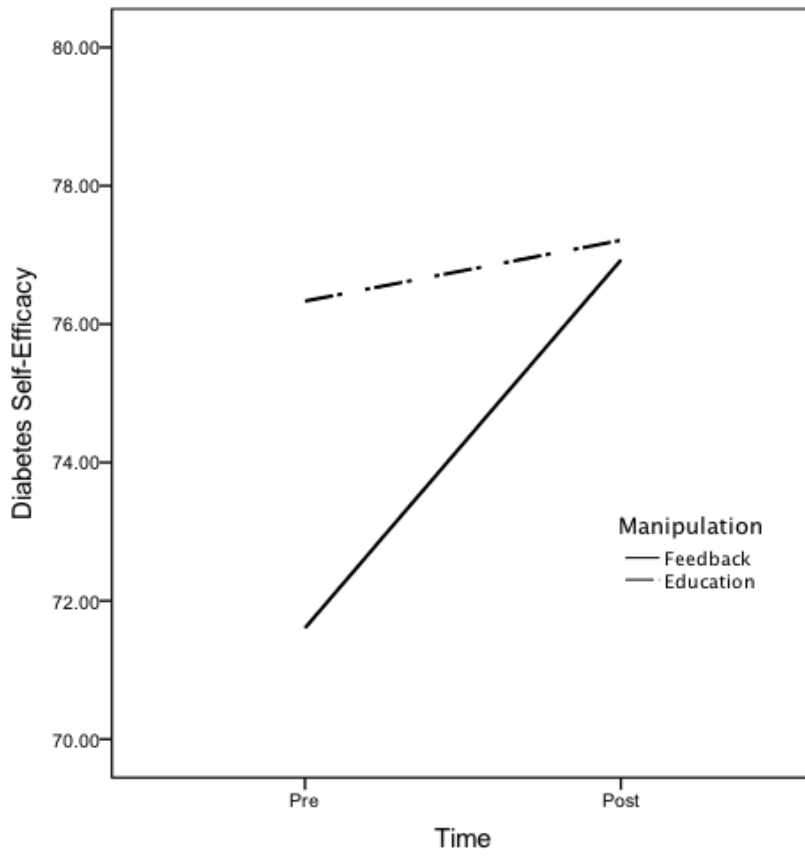


FIGURE 8. Changes in Perceived Communication for Feedback Group

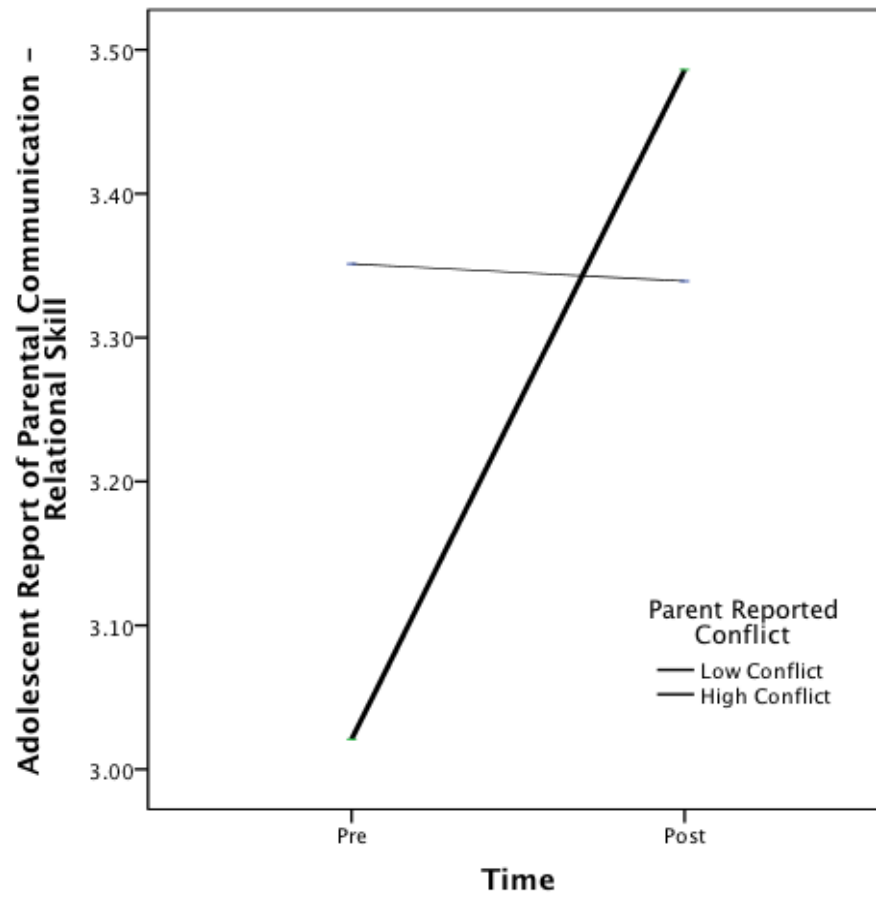
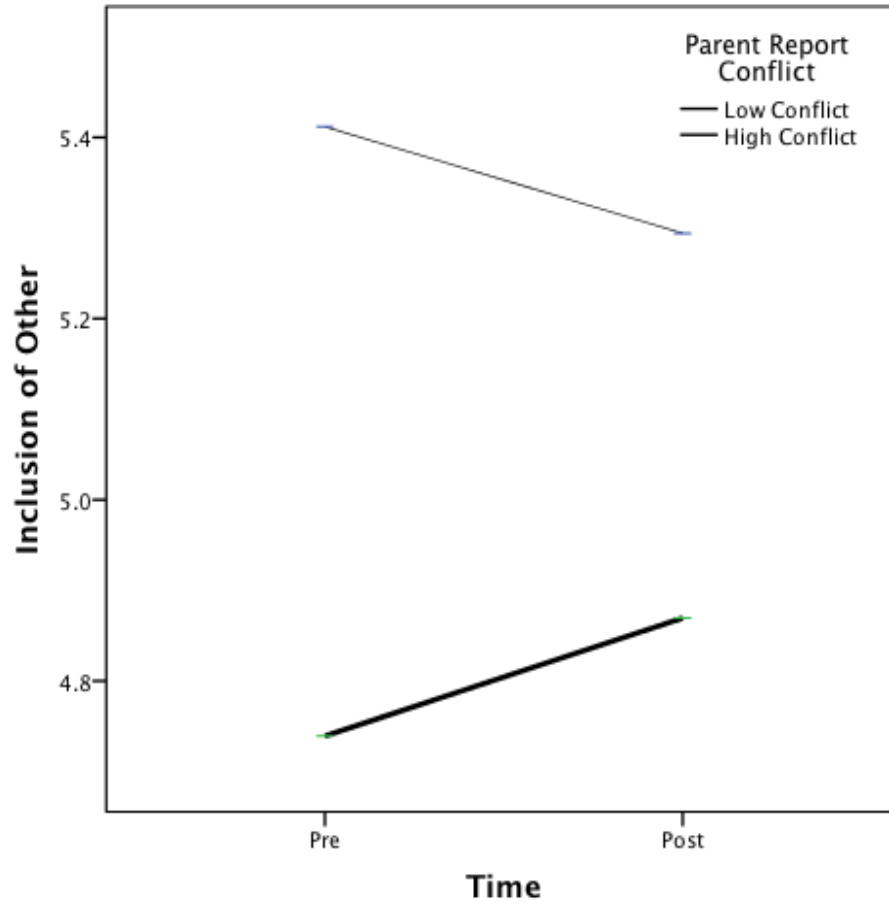


FIGURE 9. Changes in Perceived Closeness for Education Group



REFERENCES

- ADA. (2013). Economic Costs of Diabetes in the U.S. in 2012. *Diabetes Care*, 36(4), 1033-1046.
- Allen, J., & Land, D. (1999). The nature and importance of attachment relationships to parents and peers during adolescence *Handbook of attachment: Theory, research, and clinical applications* (pp. 319-335).
- Anderson, B. J., Brackett, J., Ho, J., & Laffel, L. M. B. (1999). An Office-Based Intervention to Maintain Parent-Adolescent Teamwork in Diabetes Management. *Diabetes Care*, 22(5), 713-721.
- Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, 63(4), 596.
- Barber, B. K., Olsen, J. A., Collins, W. A., & Burchinal, M. (2005). Parental Support, Psychological Control, and Behavioral Control- Assessing Relevance across Time, Culture, and Method. *Monographs of the society for research in child development*(147).
- Barnes, G. M., & Farrell, M. P. (1992). Parental Support and Control as Predictors of Adolescent Drinking, Delinquency, and Related Problem Behaviors. *Journal of Marriage and Family* 54(4), 763-776.
- Berg, C. A., King, P. S., Butler, J. M., Pham, P., Palmer, D., & Wiebe, D. J. (2011). Parental involvement and adolescents' diabetes management: the mediating role of self-efficacy and externalizing and internalizing behaviors. *J Pediatr Psychol*, 36(3), 329-339. doi: 10.1093/jpepsy/jsq088

- Blount, A. (2003). Integrated Primary Care-Organizing the Evidence. *Families, Systems & Health* 21, 121-134.
- Blount, A., Schoenbaum, M., Kathol, R., Rollman, B. L., Thomas, M., O'Donohue, W., & Peek, C. J. (2007). The economics of behavioral health services in medical settings: A summary of the evidence. *Professional Psychology: Research and Practice*, 38(3), 290-297. doi: 10.1037/0735-7028.38.3.290
- Borawski, E. A., Ievers-Landis, C. E., Lovegreen, L. D., & Trapl, E. S. (2003). Parental monitoring, negotiated unsupervised time, and parental trust: the role of perceived parenting practices in adolescent health risk behaviors. *Journal of Adolescent Health*, 33(2), 60-70. doi: 10.1016/s1054-139x(03)00100-9
- Channon, S. J., Huws-Thomas, M. V., Rollnick, S., Hood, K., Cannings-John, R. L., Rogers, C., & Gregory, J. W. (2007). A multicenter randomized controlled trial of motivational interviewing in teenagers with diabetes. *Diabetes Care*, 30(2), 1390-1395.
- Cunningham, J. A., Hodgins, D. C., Toneatto, T., & Murphy, M. (2012). A randomized controlled trial of a personalized feedback intervention for problem gamblers. *PLoS One*, 7(2), e31586. doi: 10.1371/journal.pone.0031586
- Davey, M. P., Kissil, K., Lynch, L., Harmon, L. R., & Hodgson, N. (2013). A culturally adapted family intervention for African American families coping with parental cancer: outcomes of a pilot study. *Psychooncology*, 22(7), 1572-1580. doi: 10.1002/pon.3172

- Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits- Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, 11(4), 227-268.
- Delamater, A. M., de Wit, M., McDarby, V., Malik, J., Acerini, C. L., International Society for, P., & Adolescent, D. (2014). ISPAD Clinical Practice Consensus Guidelines 2014. Psychological care of children and adolescents with type 1 diabetes. *Pediatr Diabetes*, 15 Suppl 20, 232-244. doi: 10.1111/pedi.12191
- Dix, T., Stewart, A. D., Gershoff, E. T., & Day, W. H. (2007). Autonomy and children's reactions to being controlled: Evidence that both compliance and defiance may be positive markers in early development. *Child Development*, 78(4), 1204-1221.
- Doherty, F. M., Calam, R., & Sanders, M. R. (2013). Positive parenting program (triple P) for families of adolescents with type 1 diabetes: a randomized controlled trial of self-directed teen triple P. *J Pediatr Psychol*, 38(8), 846-858. doi: 10.1093/jpepsy/jst046
- Duke, D. C., Geffken, G. R., Lewin, A. B., Williams, L. B., Storch, E. A., & Silverstein, J. H. (2008). Glycemic control in youth with type 1 diabetes: family predictors and mediators. *J Pediatr Psychol*, 33(7), 719-727. doi: 10.1093/jpepsy/jsn012
- Dumka, L. E., Stoerzinger, H. D., Jackson, K. M., & Roosa, M. W. (1996). Examination of the Cross-Cultural and Cross-Language Equivalence of the Parenting Self-Agency Measure. *Family Relations*, 45(2), 216-222.
- Ellis. (2005). Use of Multisystemic Therapy to Improve Regimen Adherence Among Adolescents with Type 1 Diabetes in Chronic Poor Metabolic Control.

- Ellis, Naar-King, S., Chen, X., Moltz, K., Cunningham, P. B., & Idalski-Carcone, A. (2012). Multisystemic therapy compared to telephone support for youth with poorly controlled diabetes: findings from a randomized controlled trial. *Ann Behav Med, 44*(2), 207-215. doi: 10.1007/s12160-012-9378-1
- Ellis, Templin, T., Naar-King, S., Frey, M. A., Cunningham, P. B., Podolski, C.-L., & Cakan, N. (2007). Multisystemic therapy for adolescents with poorly controlled type I diabetes: Stability of treatment effects in a randomized controlled trial. *Journal of Consulting and Clinical Psychology, 75*(1), 168-174. doi: 10.1037/0022-006x.75.1.168
- Ellis, D., Podolski, C. L., Frey, M., Naar-King, S., Wang, B., & Moltz, K. (2007). The Role of Parental Monitoring in Adolescent Health Outcomes: Impact on Regimen Adherence in Youth with Type 1 Diabetes. *Journal of Pediatric Psychology, 32*(8), 907-917. doi: 10.1093/jpepsy/jsm009
- Erickson, S. J., Gerstle, M., & Feldstein, S. W. (2005). Brief Interventions and Motivational Interviewing With Children, Adolescents, and Their Parents in Pediatric Health Care Settings A Review. *Archives of pediatric & adolescent medicine 159*(12), 1173-1180.
- Essleston, C., Palmero, T. M., Fisher, E., & Law, E. (2012). Psychological interventions for parents of children and adolescents with chronic illness. *The Cochrane Library*.
- Forsander, A., Sundelin, J., & Persson, B. (2000). Influence of the initial management regimen and family social situation on glycemic control and medical care in children with type I diabetes mellitus. *Acta Paediatrica, 89*(12), 1462-1468.

- Fruzzetti, A. E., & Iverson, K. M. (2004). Fruzzetti & Iverson, 2004 *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition* (pp. 168-191).
- Gee, B. T., Nansel, T. R., & Liu, A. (2015). Reduction of hypoglycaemic events with a behavioural intervention: a randomized clinical trial for paediatric patients with Type 1 diabetes mellitus. *Diabet Med.* doi: 10.1111/dme.12744
- Glasgowa, R. E., La Chanceb, P. A., Tooberta, D. J., Browna, J., Hampsona, S. E., & Riddlec, M. C. (1997). Long term effects and costs of brief behavioural dietary intervention for patients with diabetes delivered from the medical office. *Patient Educ Couns*, 32, 175-184.
- Gonder-Frederick, L. A., Cox, D. J., & Ritterband, L. M. (2002). Diabetes and behavioral medicine: The second decade. *Journal of Consulting and Clinical Psychology*, 70(3), 611-625. doi: 10.1037//0022-006x.70.3.611
- Grey, M., & Berry, D. (2004). Coping skills training and problem solving in diabetes. *Current diabetes reports*, 4(2), 126-131.
- Hamilton, J. D., Denis. (2002). Deteriorating Diabetes Control During Adolescence: Physiological or Psychological *Journal of Pediatric Endocrinology & Metabolism* 15, 115-126.
- Hanna, K. M. (2012). A framework for the youth with type 1 diabetes during the emerging adulthood transition. *Nurs Outlook*, 60(6), 401-410. doi: 10.1016/j.outlook.2011.10.005
- Hanna, K. M., & Decker, C. L. (2010). A Concept Analysis: Assuming Responsibility for Self-Care among Adolescents with Type 1 Diabetes. *Journal for Specialists in Pediatric Nursing*, 15(2), 99-110. doi: 10.1111/j.1744-6155.2009.00218.x

- Hanson, C. L., De Guire, M. J., Schinkel, A. M., & Kolterman, O. G. (1995). Empical validation for family-centered model of care. *Diabetes Care*, *18*(10), 1347-1356.
- Harris, M. A., Greco, P., Wysocki, T., Elder-Danda, C., & White, N. H. (1999). Adolescents with diabetes from single-parent, blended, and intact families: Health-related and family functioning. *Families, Systems, & Health*, *17*(2), 181.
- Helsen, M., Vollebergh, W., & Meeus, W. (2000). Social Support from Parents and Friends and Emotional Problems in Adolescence. *Journal of Youth and Adolescence* *29*(3).
- Hood, K. K., Butler, D. A., Anderson, B. J., & Laffel, L. M. B. (2007). Updated and Revised Diabetes Family Conflict Scale. *Diabetes Care*, *30*(7), 1764-1769. doi: 10.2337/dc06-2358
- Ingersoll, G. M. O., Donald P.; Herrold, Alison J.; Golden, Michael P. (1986). Cognitive maturity and self-management among adolescents with insulin-dependent diabetes mellitus. *Behavioral Pediatrics*, *108*(4), 620-623.
- Jaser, S. S., & Grey, M. (2010). A pilot study of observed parenting and adjustment in adolescents with type 1 diabetes and their mothers. *J Pediatr Psychol*, *35*(7), 738-747. doi: 10.1093/jpepsy/jsp098
- Kalinauskiene, L., Cekuoliene, D., Van Ijzendoorn, M. H., Bakermans-Kranenburg, M. J., Juffer, F., & Kusakovskaja, I. (2009). Supporting insensitive mothers: the Vilnius randomized control trial of video-feedback intervention to promote maternal sensitivity and infant attachment security. *Child Care Health Dev*, *35*(5), 613-623. doi: 10.1111/j.1365-2214.2009.00962.x

- King, P. S., Berg, C. A., Butner, J., Butler, J. M., & Wiebe, D. J. (2014). Longitudinal trajectories of parental involvement in Type 1 diabetes and adolescents' adherence. *Health Psychol*, *33*(5), 424-432. doi: 10.1037/a0032804
- La Greca, A. M., & Bearman, K. J. (2002). The Diabetes Social Support Questionnaire-Family Version- Evaluating Adolescents' Diabetes-Specific Support From Family Members. *Journal of Pediatric Psychology*, *27*(8), 665-676.
- La Greca, A. M., Follansbee, Donna, Skyler, Jay, S.,. (1990). Developmental and Behavioral Aspects of Diabetes Management in Youngsters *Children's Health Care*, *19*(3), 132-139.
- Larson, E. L., Patel, S. J., Evans, D., & Saiman, L. (2013). Feedback as a strategy to change behaviour: the devil is in the details. *J Eval Clin Pract*, *19*(2), 230-234. doi: 10.1111/j.1365-2753.2011.01801.x
- Lawrence, P. J., Davies, B., & Ramchandani, P. G. (2013). Using video feedback to improve early father-infant interaction: a pilot study. *Clin Child Psychol Psychiatry*, *18*(1), 61-71. doi: 10.1177/1359104512437210
- Madson, M. B., Mohn, R. S., Zuckoff, A., Schumacher, J. A., Kogan, J., Hutchison, S., . . . Stein, B. (2013). Measuring client perceptions of motivational interviewing: factor analysis of the Client Evaluation of Motivational Interviewing scale. *J Subst Abuse Treat*, *44*(3), 330-335. doi: 10.1016/j.jsat.2012.08.015
- Markland, D., Richard, R. M., Tobin, A. J., & Rollnick, S. (2005). Motivational Interviewing and Self-Determination Theory. *Journal of Social and Clinical Psychology*, *24*(6), 811-831.

- Miller, L. R., Cano, A., & Wurm, L. H. (2013). A motivational therapeutic assessment improves pain, mood, and relationship satisfaction in couples with chronic pain. *J Pain, 14*(5), 525-537. doi: 10.1016/j.jpain.2013.01.006
- Miller, V. A., & Drotar, D. (2007). Decision-making competence and adherence to treatment in adolescents with diabetes. *J Pediatr Psychol, 32*(2), 178-188. doi: 10.1093/jpepsy/jsj122
- Miller, V. A., & Jawad, A. F. (2014). Relationship of youth involvement in diabetes-related decisions to treatment adherence. *J Clin Psychol Med Settings, 21*(2), 183-189. doi: 10.1007/s10880-014-9388-1
- Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. (3rd ed.): Guilford press.
- Miller-Johnson, S., Emery, R. E., Marvin, R. S., Clarke, W., Lovinger, R., & Martin, M. (1994). Parent-Child Relationships and the Management of Insulin-Dependent Diabetes Mellitus. *Journal of Consulting and Clinical Psychology, 62*(3).
- Mitchell, A. E., Castellani, A. M., Herrington, R. L., Joseph, J. I., Doss, B. D., & Snyder, D. K. (2008). Predictors of Intimacy in Couples' Discussions of Relationship Injuries- An Observational Study. *Journal of Family Psychology, 22*(1), 21-29.
- Morrissey, R. A., & Gondoli, D. M. (2012). Change in Parenting Democracy during the Transition to Adolescence: The Roles of Young Adolescents' Noncompliance and Mothers' Perceived Influence. *Parent Sci Pract, 12*(1), 57-73. doi: 10.1080/15295192.2012.638872
- Naar-King, S., & Ellis, D. E. (2011). *Self-Care for Chronic Medical Conditions: Motivational Interviewing with Adolescents and Young Adults*: Guilford Press.

- Naar-King, S., & Suarez, M. (2011). *Motivational interviewing with adolescents and young adults*. : Guilford Press.
- Nansel, T. R., Iannotti, R. J., & Liu, A. (2012). Clinic-integrated behavioral intervention for families of youth with type 1 diabetes: randomized clinical trial. *Pediatrics*, *129*(4), e866-873. doi: 10.1542/peds.2011-2858
- Naranjo, D., Mulvaney, S., McGrath, M., Garner, T., & Hood, K. (2014). Predictors of self-management in pediatric type 1 diabetes: individual, family, systemic, and technologic influences. *Curr Diab Rep*, *14*(11), 544. doi: 10.1007/s11892-014-0544-7
- Osborn, P., Berg, C. A., Hughes, A. E., Pham, P., & Wiebe, D. J. (2013). What mom and dad don't know can hurt you: adolescent disclosure to and secrecy from parents about type 1 diabetes. *J Pediatr Psychol*, *38*(2), 141-150. doi: 10.1093/jpepsy/jss102
- Palmer, D. L. (2004). The Role of Autonomy and Pubertal Status in Understanding Age Differences in Maternal Involvement in Diabetes Responsibility across Adolescence. *Journal of Pediatric Psychology*, *29*(1), 35-46. doi: 10.1093/jpepsy/jsh005
- Palmer, D. L., Osborn, P., King, P. S., Berg, C. A., Butler, J., Butner, J., . . . Wiebe, D. J. (2011). The structure of parental involvement and relations to disease management for youth with type 1 diabetes. *J Pediatr Psychol*, *36*(5), 596-605. doi: 10.1093/jpepsy/jsq019

- Palta, M., LaCaire, T., Daniels, K., Shen, G., Allen, C., & D'Alessio, D. (1997). Risk Factors for Hospitalization in a Cohort with Type 1 Diabetes. *American Journal of Epidemiology*, 146(8), 627-636.
- Parkin, M. C., & Kuczynski, L. (2012). Adolescent perspectives on rules and resistance within the parent-child relationship. *Journal of Adolescent Research*, 27(5), 632-658.
- Pettitt, D. J., Talton, J., Dabelea, D., Divers, J., Imperatore, G., Lawrence, J. M., . . . Hamman, R. F. (2014). Prevalence of diabetes in U.S. youth in 2009- the SEARCH for diabetes in youth study. *Diabetes Care*, 37, 402-408.
- Phaneuf, L., Lee McIntyre, L., & Roane, H. (2007). Effects of Individualized Video Feedback Combined with Group Parent Training on Inappropriate Maternal Behavior. *Journal of Applied Behavior Analysis*, 40(4), 737-741. doi: 10.1901/jaba.2007.737-741
- Power, T. G., McGrath, M. P., Hughes, S. O., & Manire, S. H. (1994). Compliance and self-assertion: Young children's responses to mothers versus fathers. *Developmental Psychology*, 30(6), 980.
- Prager, K. J., & Buhrmester, D. (1998). Intimacy and Need Fulfillment in Couple Relationships. *Journal of Social and Personal Relationships*, 15(4), 435-469.
- Resnicow, K., & McMaster, F. (2012). Motivational Interviewing: moving from why to how with autonomy support. *Int J Behav Nutr Phys Act*, 9, 19. doi: 10.1186/1479-5868-9-19

- Riper, H., van Straten, A., Keuken, M., Smit, F., Schippers, G., & Cuijpers, P. (2009). Curbing problem drinking with personalized-feedback interventions: a meta-analysis. *Am J Prev Med*, 36(3), 247-255. doi: 10.1016/j.amepre.2008.10.016
- Rollnick, S., Miller, W. R., & Butler, C. (2008). *Motivational interviewing in health care: helping patients change behavior.* : Guilford Press.
- Ruback, S., Sandbæk, A., Lauritzen, T., & Christensen, B. (2005). Motivational interviewing- a systematic review and meta-analysis. *British Journal of General Practice*, 55, 305-312.
- Salisch, M. v. (2001). Children's emotional development: Challenges in their relationships to parents, peers, and friends. *International Journal of Behavioral Development*, 25(4), 310-319. doi: 10.1080/01650250143000058
- Shute, V. J. (2008). Focus on Formative Feedback. *Review of Educational Research*, 78(1), 153-189. doi: 10.3102/0034654307313795
- Sieffge-Krenke, I. (2002). "Come on, Say Something Dad" Father Communication and Conflict with Diabetic Adolescents. *Journal of Pediatric Psychology*, 27(5), 439-450.
- Silverstein, J., Klingensmith, G., Copeland, K., Plotnick, L., Kaufman, F., Laffel, L., ... & Clark, N. . (2005). Care of Children and Adolescents With Type 1 Diabetes. *Diabetes Care*, 28(1), 186-212.
- Smith, J. D., Dishion, T. J., Moore, K. J., Shaw, D. S., & Wilson, M. N. (2013). Effects of video feedback on early coercive parent-child interactions: the intervening role of caregivers' relational schemas. *J Clin Child Adolesc Psychol*, 42(3), 405-417. doi: 10.1080/15374416.2013.777917

- Steinberg, L. (2001). We Know Some Things: Parent–Adolescent Relationships in Retrospect and Prospect.pdf>. *Journal of Research on Adolescence*, 11(1), 1-19.
- Uchino, B. N. (2009). Understanding the Links between Social Support and Physical Health: A Life-Span Perspective with Emphasis on the Separability of Perceived and Received Support. *Perspectives on Psychological Science*, 4(3), 236-255.
- Vesco, A. T., Anderson, B. J., Laffel, L. M., Dolan, L. M., Ingerski, L. M., & Hood, K. K. (2010). Responsibility sharing between adolescents with type 1 diabetes and their caregivers: importance of adolescent perceptions on diabetes management and control. *J Pediatr Psychol*, 35(10), 1168-1177. doi: 10.1093/jpepsy/jsq038
- Viner, R. M., Christie, D., Taylor, V., & Hey, S. (2003). Motivational:solution-focused intervention improves HbA1c in adolescents with Type 1 diabetes- A pilot study. *Diabetic Medicine*, 20(9), 739-742.
- Weinger, K., O'Donnel, K., & Ritholz, M. (2001). Adolescent Views of Diabetes-Related Parent Conflict and Support- A Focus Group Analysis. *Journal of Adolescent Health*, 29(5), 330-336.
- Weinger, K., O'Donnell, K. A., & Ritholz, M. D. (2001). Adolescent Views of Diabetes-Related Parent Conflict and Support- A Focus Group Analysis. *Journal of adolescent health*, 29(5), 330-336.
- Wiebe, D. J., Berg, C. A., Korbel, C., Palmer, D. L., Beveridge, R. M., Upchurch, R., . . . Donaldson, D. L. (2005). Children's Appraisals of Maternal Involvement in Coping With Diabetes- Enhancing Our Understanding of Adherence, Metabolic Control, and Quality of Life Across Adolescence. *Journal of Pediatric Psychology*, 30(2), 167-178.

- Wysocki, T. (1993). Associations among teen-parent relationships, metabolic control, and adjustment to diabetes in adolescents. *Journal of Pediatric Psychology*, 18(4), 441-452.
- Wysocki, T. (2006). Effects of Behavioral Family Systems Therapy for Diabetes on Adolescents' Family Relationships, Treatment Adherence, and Metabolic Control. *Journal of Pediatric Psychology*, 31(9), 928-938. doi: 10.1093/jpepsy/jsj098
- Wysocki, T., Harris, M. A., Buckloh, L. M., Mertlich, D., Lochrie, A. S., Mauras, N., & White, N. H. (2007). Randomized Trial of Behavioral Family Systems Therapy for Diabetes: Maintenance of effects on diabetes outcomes in adolescents. *Diabetes Care*, 30(3), 555-560. doi: 10.2337/dc06-1613

ABSTRACT**DIABETES INTERACTION STUDY:
COMMUNICATING UNDERSTANDING AND SOCIAL SUPPORT**

by

DANA MAY**August 2016****Advisor:** Dr. Annmarie Cano**Major:** Psychology (Clinical)**Degree:** Doctor of Philosophy

The current study evaluated a brief individualized feedback intervention developed to improve communication style of parents with an adolescent with type 1 diabetes.

Seventy-nine parent-adolescent dyads (13-18 years) were randomized to receive a single session of brief feedback to target parental person-centered communication skills (n = 39) or to receive an educational comparison group (n = 40). Families were asked to discuss a diabetes related problem. A clinician concurrently rated the parent's communication skills to identify communication strengths and weaknesses. Parents in the feedback group received feedback on their use of person-centered communication during the conversation using motivational interviewing techniques. Person centered communication included using reflections, affirmations and open-ended questions. Subsequently, each dyad was asked to discuss another problem with diabetes care to assess for change in parent communication skills. Video recordings were coded by 2 independent raters. Parents and adolescents also completed questionnaires to assess feedback satisfaction, perceived communication skill, perceived emotional support, self-

efficacy, diabetes social support, and diabetes related conflict. Parents in the feedback condition demonstrated greater increased in observed person-centered communication, specifically reflections and open-ended questions compared to parents in the control condition. Adolescents in the feedback condition reported greater increases in perceptions of parental empathy and emotional intimacy from pre-to post-manipulation than adolescents in the control condition. Marginally significant increases in diabetes self-efficacy were also noted in the feedback condition when compared to the control condition. When examining diabetes social support and diabetes related conflict as possible moderators of the feedback group, results suggest dyads with higher conflict at baseline showed greater increased in perceived communication skills following the feedback manipulation. A brief intervention to provide feedback to parents on their use of person-centered communication with their adolescent showed preliminary efficacy for increasing person-centered communication skills and perceptions of empathy and intimacy. Such positive communication has previously been shown to relate to improved diabetes management. Brief interventions are optimal for use in busy multidisciplinary pediatric clinics.

AUTOBIOGRAPHICAL STATEMENT

Dana May was born outside of Madison, Wisconsin. She showed an early interest in working with youth and health and planned to pursue a career in pediatric medicine. Her first year of undergraduate university, she developed an interest in psychology in addition to biological sciences. She continued to seek opportunities that merged her two interests through research, coursework and professional development at the University of Wisconsin-Madison. During her fourth year of undergraduate university, her close graduate student research mentor took a clinical placement in health psychology. Although the mentor did not care for this field, her stories of her experiences sparked Dana's interest in the field. Upon graduation, Dana explored the clinical aspects of psychology by working in an acute inpatient psychology hospital in Madison associated with the University of Wisconsin-Madison. The hospital cared for children and adolescents with a wide range of acute psychological distress, including youth with chronic medical conditions. After working for two years, she was confident that she had found her passion: helping youth and their families cope with chronic illness. Dana applied to Clinical Psychology programs that would allow her to blend her interest in youth and health in a science-practitioner model of learning. She feels grateful to have found an amazing fit at Wayne State University and working with supportive mentors, Dr. Annmarie Cano and Dr. Deborah Ellis, pursuing her interest in pediatric psychology. In her free time, Dana can be found working with livestock on her family's farm, traveling, and enjoying various outdoor activities.