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Cognitive-Behavioral Group Therapy for Latino youth with Type 1 Diabetes and depression: A case study

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Abstract

This group case study describes the course of a 14-session Cognitive Behavioral Therapy (CBT) for Latino adolescents with Type 1 Diabetes Mellitus (T1DM) and depressive symptoms. The intervention, known as CBT-DM, is an adaptation of an efficacious group intervention for adolescent depression. The treatment rationale and cultural adaption model are described as well as procedures used to achieve sensitivity to the characteristics of the T1DM culture as experienced by Latino youth from Puerto Rico. Session-by-session protocol is reviewed and treatment gains on the group as a whole and on its individual members are presented, providing quantitative and qualitative data. Treatment feasibility, clients' acceptance and satisfaction with treatment, and follow-up data up to 6 months post-treatment are also examined, considering cognitive, behavioral, emotional, relational, medical, and functional outcomes. Complicating factors, barriers to care, and treatment implications are discussed in the context of treating clients with comorbid chronic physical illness and emotional problems also embedded in a Latino culture. Translation of evidence-based treatments for depression into primary care settings and adapting protocols to youth populations with other medical illnesses is proposed. Recommendations for clinicians are provided, emphasizing the establishment of collaborative relationships with clients, assessing their stage in the process of accepting their chronic illness, as well as understanding their overall context to avoid unnecessary attributions of pathology to their thoughts, behaviors, and feelings.

Keywords

cognitive-behavioral therapy; adolescent depression; diabetes; group interventions; Latinos/Hispanics

1. Theoretical and Research Basis for Treatment

Except for Native Americans, Latino youth are at greater risk for depression than youth from other ethnic/racial groups and have less access to mental health services than non-Latinos (Saluja et al., 2004; Sen, 2004). About 4.42% of youth 11 to 17 years old from Puerto Rico (PR) meet criteria for Major Depressive Disorder (MDD) and 5.25% present with sub-threshold depression (González-Tejera et al., 2005). Yet, few studies have examined the efficacy of psychotherapy for depression in Latino youth (Bernal & Rosselló, 2008).

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Evidence suggests that Latinos are more likely to seek mental health services in primary care settings (Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999). Efficacious psychotherapies for depression, such as evidenced-based treatments (EBTs), must be available to Latinos even in primary care settings as they are as good as medications (Cuijpers et al, 2013), and as Latino primary care patients who seek mental health services are not very prone to use antidepressants (Miranda & Cooper, 2004).

Diabetes in Adolescence

Diabetes is one of the most prevalent chronic physical illnesses around the world with deleterious impact to the quality of life of those affected and is often comorbid with depression (Lloyd et al., 2010). Youth with Type 1 Diabetes Mellitus (T1DM) are at a higher risk for depressive symptoms than controls, with their past symptoms predicting future ones up to 5 years later (Hood et al., 2006; Johnson, Eiser, Young, Brierley, & Heller, 2013). In 2013, at least 1.8% of people under 20 years old in PR received treatment for diabetes, mostly T1DM (Puerto Rico Department of Health, 2015). This rate is notably higher than the 0.25% rate found in the pediatric population in the United States (Centers for Disease Control and Prevention, 2014). In fact, until the past decade, 29 of every 30 youth with diabetes in PR had T1DM (Pérez-Perdomo, Pérez-Cardona, Allende-Vigo, Rivera-Rodríguez, & Rodríguez-Lugo, 2005), and rates for depressive symptoms among them were between 36.7 and 45.5% (Rivera, González-Nieves, Vélez, & Colón de Martí, 2007; Rosselló & Jiménez, 2007).

During adolescence, glycemic control and T1DM self-care are typically suboptimal due to physiological (e.g., hormonal changes), psychological (e.g., search for independence and peer acceptance) and social (e.g., family conflict and peer pressure) factors (Johnson et al., 2013). T1DM youth with depressive symptoms are at higher risk for poor glycemic control, medical complications, and hospitalizations (Stewart, Rao, Emslie, Klein, & White, 2005). As with adults, their quality of life could be significantly affected. Research conducted in PR has shown very similar patterns of psychological, emotional, and self-care difficulties in T1DM youth as those reported in the general research literature (Cumba-Avilés & Sáez Santiago, 2016).

Cognitive Behavioral Therapy for Latino Youth with Depression

Cognitive Behavioral Therapy (CBT) has been found to reduce depression in Latino youth (Bernal & Rosselló, 2008). The CBT for adolescent depression (AD; Rosselló & Bernal, 1999) used in PR is an adaptation to the group-format CBT for depressed adults (Muñoz & Miranda, 1986). Group CBT has been recommended for treating Latinos because of its short-term, directive, and problem-solving nature (Organista, 2000). That model was not only adapted for Puerto Rican youth but modified to an individual format. Individual CBT for AD consists of 12 weekly sessions divided into three modules of four sessions each, focusing on how thoughts, activities, and relationships affect mood. CBT attempts to identify the thoughts and actions that influence depressive feelings and expose people to learn ways to have more control over those feelings. CBT assumes that changing what people think is essential to modify how they respond to events, and that behavioral activation techniques could be used to overcome depressed mood and anhedonia by providing

increasing positive reinforcement in their lives (González-Prendes, Hindo, & Pardo, 2011). This model also emphasizes how people learn from and influence their environment, including relationships (Aguilera, Garza, & Muñoz, 2010).

Efficacy of CBT for AD with Latino Youth and Initial Adaptation for Youth with Diabetes

The cultural adaptation of CBT for AD has been well documented (Rosselló & Bernal, 1996). The first adaptation was used in a study comparing CBT and Interpersonal Psychotherapy (IPT) in individual format with a Waitlist. CBT and IPT significantly reduced depressive symptoms at termination. Three months later, those who received CBT for AD continued to decrease their symptoms (Rosselló & Bernal, 1999). In a second study, CBT for AD was adapted to a group format, and CBT and IPT in individual and group formats were compared. Again, CBT proved to be efficacious in reducing depression, producing significantly greater decreases than IPT (Rosselló, Bernal, & Rivera-Medina, 2008). Data from a third study in PR showed that CBT effects persisted up to one year after treatment ended (Bernal et al., 2016). These findings support the efficacy of this protocol in individual and group formats.

Culturally adapted EBTs could be refined or supplemented to increase engagement, enhanced beneficial outcomes, or both (González-Castro, Barrera, & Holleran-Steiker, 2010). We present a case study showing how a culturally adapted EBT (CBT for AD) could be modified for its use with adolescents presenting a chronic physical illness such as T1DM. The adaptation of this intervention protocol for T1DM adolescents has come to be known as CBT-DM.

Few culturally appropriate protocols have focused on Puerto Ricans with diabetes and those available are mostly education programs directed to adults with Type 2 Diabetes Mellitus (T2DM; Osborn et al., 2010). Most psychological interventions for T1DM youth have focused on improving self-care, glycemic control, and psychosocial variables other than depression (Winkey, Ismail, Landau, & Eisler, 2006). Although none have been developed or adapted for Latinos, theoretically-driven interventions have been significantly more effective than those that were not. In contrast, CBT-DM targets depressive symptoms in Latino youth with T1DM, and was grounded in a well-validated theoretical model. The essential elements and goals of CBT for AD were preserved, but adaptations to the T1DM culture were done, and new therapy goals were added: to feel more in control of diabetes, and to improve self-care and glycemic control.

The initial adaptation occurred during an open trial ($N = 11$; Rosselló & Jiménez-Chafey, 2006). The authors reported “issues related to diabetes management and control were integrated into the manual, as well as strategies for dealing with common worries and difficulties presented by adolescents”, based on published studies with the T1DM population (Rosselló & Jiménez-Chafey, 2006, p. 221). Examples of specific adaptations and further refinements made to the manuals will be discussed later. Results of this study showed that youth depressive symptoms significantly decreased, while self-esteem, diabetes self-efficacy, quality of life, and functionality increased. Yet, self-care and glycemic control remained unchanged. Findings suggested the need for further refinement of CBT-DM to impact

diabetes-related variables. The revised version of the CBT-DM protocol was used as the group treatment for the clinical case presented here.

2. Case Introduction

The case included five adolescents who volunteered to participate in a study to assess the initial efficacy of CBT-DM in T1DM youth from PR with depression. Clients had scores 13 on the Children's Depression Inventory (CDI) or scores 44 on the Children's Depression Rating Scale-Revised (CDRS-R). Client pseudonyms are: Juana, Luis, David, Rosa, and José. Most attended public schools and lived within 1 hr from the clinic. Time since their T1DM diagnosis ranged between 2 and 12 years. Four of their moms reported a mid-low socioeconomic status. Juana (14) lived with her mother (service job), father, and younger brother and sister. Juana was overweight. Her mother said they had not received enough T1DM education. Rosa (15) lived with her mom (government employee), dad, and oldest sister. She had lived with T1DM almost her entire life. Both young women had used insulin pumps for 2.5 (Rosa) and 8 months (Juana) prior to intake. Luis (13) lived with his mom (hospital employee) and a little sister. His parents were divorced and reportedly getting along "well". David (16) lived with his widowed mother (a security company employee), an older sister, and two adult relatives. José (17) lived with his mom (unemployed, volunteer teacher at church), his dad, two younger nieces, and an adult sister. He had a part-time job. The young men were on insulin injections treatment at baseline.

3. Presenting Complaints

Main complaints were youth depressive symptoms as reported by mothers and youth. Two group members (GMs) had high suicidal ideation. Moms complained about GMs' self-care. Mothers said in the past 3 months all showed anger, disappointment, or resentment, for having T1DM. Rosa cried or complained often as if having T1DM had made her depressed or hopeless. Juana had not talked to her mom about T1DM. Luis had talked to his mother about diabetes very few times. Initially, the young men showed some reluctance about recognizing the severity of their depressive symptoms. Only Luis and Rosa carried daily supplies with them to treat hypoglycemia. Mothers reported that all but one youth were following meal plan recommendations only 50% of the time. Luis was worried with meal plan difficulties and upset with his mom because she did not let him eat what he wanted. David's mother said he used to forget snacks. Finally, mothers for Juana and Luis reported their children had not exercised in 3 months and expressed resistance to do so.

4. History

All GMs had history of mental illness. Juana had MDD since 13 and used antidepressants until 6 months before CBT-DM. Rosa's first depressive episode was at 11. She visited a psychologist until a year before enrollment. José was diagnosed with a Learning Disability (LD) at 7. He had his first depressive episode at 10 and received psychotherapy. He also had a history of marijuana abuse two years prior to enrollment and underwent periodic drug tests. His mother said he was anxious and prone to disruptiveness and lies. David was also described as anxious and had a LD. Upon T1DM diagnosis, he considered using insulin to

hurt himself, and later sought treatment, including group therapy. In his mother's words, Luis was "allergic to everything". Diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) at 9, he used ADHD medications until 12. He received occupational and speech therapy as a preschooler. Upon T1DM diagnosis, he sought therapy but did not attend regularly. T1DM-related hospitalizations were 1 (Luis), 2 (Rosa), 4 (Juana and David), and 18 (José). José was admitted twice to intensive care unit, before he sought therapy again.

All caregivers had a history of MDD or current depressive symptoms and most had also a history of anxiety disorders or current symptoms. Luis' mother had a history of Panic Attacks (in crowds). She said Luis was in the house much of the time, which she viewed as "an advantage for supervising him." Only David's mother had diabetes (T2DM).

5. Assessments

We used a multistage procedure. Upon phone contact, caregivers provided data on youth depression in the past two weeks. If criteria were met (at least a minor depressive episode), both came to an in-person screening, in which youth completed the CDI, CDRS, Suicide Ideation Questionnaire-Junior (SIQ-Jr) and a clinical interview for depressive disorders criteria. Mothers completed a similar interview, demographics, and questions about youth health status. If eligible, another session was scheduled within 2 weeks. This included the Adult and Kid versions of the MINI International Neuropsychiatric Interview and self-report forms. Baseline self-reported data are presented in Table 1, as well as ratings of youth depression and global functioning given by clinical evaluators. A phlebotomy was performed to test for glycemic control (HbA1c value).

Juana presented severe depressive symptoms, suicidal ideation, and moderate anxiety. Recent stressful events included serious economic problems and illness of a relative. She seemed very angry about having T1DM and showed the lowest baseline self-care score and the second worst HbA1c value (9.90). Rosa met criteria for severe MDD, Specific Phobia, and lifetime Agoraphobia. Her mom reported as stressors her unemployment period, a move to a new home, and the death of a T1DM summer camp leader. Rosa found T1DM hard to accept and felt guilty about her illness. Even with the insulin pump and the highest self-care among GMs, her HbA1c was high. Juana and Rosa were enthusiastic about new social contacts and sharing experiences.

When interviewed, Luis denied ADHD symptoms. Based on mother's report and clinical observations, he met criteria for a past-month MDD. He obtained a high score in social withdrawal and a quite high score on aggressiveness, but his HbA1c (6.80) was the best among GMs. His mom reported her separation from a partner, a bullying episode at school, and a relative's death as stressors. Luis' strengths included his relatively high self-care, low anxiety, and love for animals. David, meanwhile, met a current MDD and Oppositional Defiant Disorder (ODD). A change in domicile was mentioned as stressor. Although his HbA1c (8.70) was high, he had the second best result among GMs. Yet, he had moderate anxiety and some self-esteem/guilt problems. His strengths included his self-efficacy and respectfulness. José met criteria for Other Specified Depressive Disorder. His last episode met criteria shortly before last month but significant symptoms remained. Unlike his mom,

he reported low anxiety. Some aggressiveness and low self-care within the previous month were observed. His HbA1c (11.80) was the worst among GMs. His mom mentioned as stressors José's academic problems, her surgery, and economic problems. Among José's strengths were his industriousness and intense desire to live.

6. Case Conceptualization

Youth experienced depression due to the T1DM-related, and non T1DM-related, negative beliefs about themselves, the future, and the world. Young women had not accepted T1DM as part of them, but swung between anger and sadness for their lost health as if T1DM precluded them of any joy. José was worried about the effect of his low self-care in his chances to achieve his goals. Juana believed her mom could not understand her and labeled her as a critical person, which reinforced her depression. These beliefs were destructive, judgmental or rigid, and altered youth perceptions of internal and external events, leading to negative emotional (e.g., depressed mood, loneliness, guilt), behavioral (e.g., inactivity, apathy, poor self-care), interpersonal (e.g., withdrawal, rejecting help, aggressiveness), and physical consequences (e.g., high glucose level, stress). Behavioral results of negative thoughts resulted in increases in interpersonal and physical problems, and vice versa. Apathy reduced Luis' involvement in pleasant activities with others. Not talking to her mom about T1DM led Juana to deep loneliness and stress. Poor self-care led to poor glycemic control. Noticing their health was affected, and the effort needed to improve it, depressive cognitions returned. Depression also rose if their best efforts for glycemic control did not seem to work, leading to hopelessness, helplessness, guilt, and low self-esteem, as with Rosa.

Relational factors about peers, family, and health care professionals played important roles in depression among youth. GMs expected peer rejection for being different and this actually occurred. José complained that peers felt pity for him thinking he could not eat some foods. Luis' social withdrawal was related to negative cognitions about his mother's repeated attempts to seek help for him, contributing to his shyness and mutism. Wishing to be left alone, he rejected help and stayed quiet to avoid conflict. Finally, David was upset about professionals who ignored the context of having T1DM but often nagged him for having high glucose levels.

7. Cultural Adaptations to Treatment

The adaptation of CBT for AD into CBT-DM was described in Rosselló and Jiménez-Chafey (2006). Other changes were made as part of our current study funded by the National Institute of Diabetes and Digestive and Kidney Diseases. We used Bernal, Bonilla, and Bellido's (1995) model. It provides eight culturally sensitive elements that we examined to ensure the adequacy of CBT-DM to the culture of T1DM youth. Elements are: *language* (whether it is appropriate and culturally syntonic); *person* (role of similarities and differences between clients and therapists in shaping therapy relations); *metaphors* (symbols, images, and proverbs); *content* (cultural knowledge of therapists); *concepts* (treatment concepts consonant with culture); *goals* (support of positive and adaptive cultural values); *methods* (cultural enhancement of treatment methods); and *context* (considering developmental, social, economic, and health-related context). As in Osborn et al. (2010), we

put together collective input from behavioral scientists and health care professionals. Our expert team, including clinical psychologists, a nutritionist, and a pediatric endocrinologist, reviewed the first CBT-DM manual. Six health care professionals (i.e., two pediatric endocrinologists, a pharmacist/diabetes educator, an exercise physiologist, a nurse, and a nutritionist/diabetes educator) from diabetes clinics or community groups completed in-depth interviews providing feedback after studying the manual. We also pondered CBT-DM open trial's results when identifying areas in need for revision.

Some adaptations consisted in integrating T1DM-related examples to illustrate concepts. We added examples in the ABCD method of restructuring thoughts ("Nobody can be happy having diabetes") and specified its emotional (*feeling depressed*), behavioral (*stop doing pleasant or self-care activities*), relational (*social withdrawal*) and somatic (*stress reactions*) consequences, as well as alternative beliefs in the *context* of having T1DM ("There are people with diabetes who are just as happy as people without it."). Examples about T1DM were added in all categories of *Negative Thoughts Styles*, such as *all or nothing* ("All I do to take care of my diabetes go wrong") and *foreseeing* ("Dancing a little at the party will put my health at risk").

We revised sessions and worksheets for technical or non-updated language. If we kept a term, we defined it in therapists' and participants' manuals. The *Mood Thermometer's* anchors were updated to juvenile dialect currently used in PR, with *Súper positivo* (Extremely positive) and *Súper negativo* (Extremely negative) as the top and bottom anchors. Overlap in the meaning of anchors was corrected. Redundancy in the manual was reduced to keep session length within 2 hrs, even if T1DM topics were added. We put guidelines in therapist's manual to enhance time distribution among topics and activities per session. Most session titles were revised to ensure fit to content, linking both T1DM and mood with thoughts, activities, and relations. In accordance to the person's dimension, we also changed esthetics in both manuals, including color in diagrams and modern designs to make them appealing and fun to youth and adjusted its organizational style, making easier to follow content and directions. Considering the value of metaphors, we used cartoons and health-related sayings ("Mente sana en cuerpo sano" or A healthy mind in a healthy body) to illustrate concepts. In accordance with methods, context and goals dimensions, we delivered CBT-DM in groups to encourage peer support, acceptance, and understanding since youth shared not only a chronic illness but also depressive symptoms and similar stressors.

We added/modified topics and exercises in modules to work with T1DM-related content. In the *Thoughts* module we added material on how T1DM and mood affect each other. To show how each one affects self-care, daily activities, thoughts, relationships, physical symptoms, and quality of life, we added these elements to the *Thought-Behaviors-Feelings* diagram. With the methods and concepts dimensions in mind, we created a *Stress Management* handout, covering effects of stress on mood and glucose level, stressors faced by youth, and strategies for reducing stress to improve mood and health (e.g., illness acceptance, exercise, and healthy nutrition).

In the *Activities* module, we emphasized self-care behaviors, reframing them as part of the concept of *constructive activities* (actions that may require effort and persistence to obtain

the desired goal). We also framed problem solving skills as a constructive activity and encouraged its practice with issues faced by youth when managing T1DM. The *Pleasant Activities Worksheet* was shortened and modified to include examples of constructive activities, provide more space for youth to write their own activities and ease their burden. With a modified *Personal Contract Worksheet*, youth were instructed to reward themselves not only for pleasant but also for constructive activities (a methods adaptation). When working on the establishment of goals, youth identified personal goals (as in CBT for AD) and T1DM-related goals. In this module, we discussed material on diabetic burnout (concepts), and added “our health” and “our relationships” among the factors that can be obstacles to do pleasant and constructive activities.

An important behavioral skill in diabetes management is doing physically safe exercises. Thus, responding to the dimensions of methods, concepts and goals, we created a handout about exercise and physical activity for youth, with alternatives to be done at home, or even if the adolescent did not like to exercise. CBT-DM included an activity using a scale (*balanza*) as a metaphor that helped youth assess themselves and encouraged them to establish a balanced T1DM self-care, avoiding carelessness and perfectionism, to optimize quality of life. To ease transition to the next module therapists discussed the distinction between personal (e.g., listen to music) and interpersonal pleasant activities (e.g., go shopping with friends), and personal (e.g., glucose monitoring) and interpersonal (e.g., attending group sessions) constructive activities. They clarified that some activities, even if linked to self-care, could be both pleasant and constructive (e.g., exercising with a friend or sharing a healthy meal with the family).

In the *People* module, we also made changes. As family conflict, communication, and cohesion are related to depression and glycemic control in T1DM youth, we added content on these areas including the practice of conflict-resolution skills with diabetes-related situations that involved parents (a goals and methods adaptation). On the importance of cohesion (*unidad*) in relations among Latinos, we added content in the third session to discuss seven key elements to build cohesion, modeled by therapists (in accordance with the person element) throughout sessions: trust, honesty, tolerance, understanding, empathy, loyalty, and support. All these are congruent with Latino values of *personalismo*, *respeto*, *simpatía* and *familismo* (Rosselló & Bernal, 1996). CBT-DM also included a topic on how to communicate having T1DM. We designed two more handouts: one to addresses parent-youth relations and one to encourage youth to create collaborative relationships with health care providers. We also added a section on “Diabetes, Depression and Peer Pressure”, in which GMs engaged in an exercise on managing this pressure or suffering the consequences of risk behaviors that hinder their health and future (e.g., drugs/alcohol abuse, smoking, unprotected sex, delinquency, reckless driving).

In the *Final Session* we included as new content a review of the main skills needed for reading food labels, count carbohydrates, and other nutritional aspects. Preparing healthy foods that are culturally familiar has been found an important skill for diabetes management among Puerto Ricans (Horowitz, Williams, & Bickell, 2003). We provided youth with supplemental material on culturally appropriate healthy recipes for Latinos with diabetes (National Diabetes Education Program, 2011). It included advice on creating a healthy meal

plan, making healthy food choices, and other information. GMs shared a healthy snack/meal at this session.

Other CBT for AD worksheets or diagrams were modified, and some were specifically developed for CBT-DM. For instance, we inserted T1DM-related examples in the *Negative and Positive Thought Worksheets* and shortened both as T1DM youth with depression could be more prone to fatigue. Regarding diagrams, when discussing the mood-activities relationship, the standard manual presented the *vicious cycle* to illustrate its bidirectionality, but using an empty diagram with arrows. We provided this diagram with examples related to depression and T1DM. We also designed a similar one in the *People* module to show the relationship between having T1DM (or observing a worsening of its symptoms), becoming depressed (or more depressed) and withdrawing socially. A *Glucose Monitoring Worksheet* was created for CBT-DM during the open trial. We revised it to provide a space for youth to keep a hypoglycemic episodes' daily register, and enhanced the awareness of keeping track of both high and low glucose levels.

8. Course of Treatment and Assessment of Progress

CBT-DM therapists emphasized integrating new material with learned material, by using the review period at the beginning of sessions to monitor GMs' progress with their *Life Experiments* (homework) and their comprehension of diagrams and handouts. CBT-DM model promotes using techniques and processes like positive reinforcement, active listening, cognitive restructuring, mood monitoring, behavioral activation and coping strategies, communication and problem solving skills, psychoeducation for depression and T1DM, role playing, social support, cohesion building, conflict-resolution strategies, and role modeling. In this revised version, we required a man and a woman as therapists (TRs). By including a man therapist (MT) we wanted to facilitate young men's engagement, emotional expression, and participation in activities. Men and women therapists (WT) worked with GMs as a team, helping them to alleviate the cultural stigma attached to therapy, emotional problems, and T1DM, to explore collective/individual factors affecting them, and to make treatment sensitive to the group as a whole and to each member. During sessions, GMs were provided with healthy snacks and beverages to consume at any time and were told to use the bathroom as needed. These factors promoted treatment satisfaction.

Introductory Session

Therapists met with GMs and caregivers in the first 25 min of session 1 to introduce each other and educate both on logistic and confidentiality issues, and rules about special situations (e.g., absences and emergency individual sessions). As Organista (2000) suggested, this interaction occurred over coffee and snacks. Then, parents left the room. Youth and therapists continued with ice-breakers to build cohesion and discussing CBT-DM structure and goals. The term *depression* was defined, and GMs shared the kind of thoughts, behaviors, and relationships they had experienced when feeling depressed. GMs told their T1DM's age of onset and how they and their family learned about their condition. The session ended assigning the Mood Thermometer and the Glucose Monitoring Worksheet. Group process was dynamic and cohesive. Most GMs were expressive but Luis was

withdrawn. When asked, he participated in discussions and showed empathy, a behavior that therapists reinforced. Rosa described her irritability and linked it to high sugar levels and feelings of not being understood at home. David prompted participation and listening to therapists, discussed personal issues, and offered good feedback to GMs.

Thought Module (Sessions 2–5)

Sessions 2–3—GMs were spontaneous and extroverted, but Luis was distracted. Therapists reviewed group rules, including not forcing anyone to participate. They used examples in the manual or provided by GMs to define *thoughts* and their link with our mood, actions, and body. These relationships were illustrated in the CBT-DM conceptual diagram and also the relationship between T1DM and depression. Hands-on activities helped to further explain this. Rosa, and other GMs, shared useful stories about her thoughts and behavior when upset. This prompted Juana to talk about her feelings and share her T1DM-related experiences in school and those in which she felt judged. The MT guided her to be empathic with a GM with similar experiences.

Session 3 started discussing how people with diabetes and depression used to think. Most GMs shared their thoughts, including some about the fatigue related with glucose monitoring and parental supervision. They shared their experiences with Halloween and signified this as negative for people with diabetes (“a torture of sweets”). The WT encouraged Juana to focus on the positive aspect of her mother’s interest in her self-care, not her nagging. GMs were invited to share *success stories* fighting negative thoughts in the context of doing self-care activities, managing fear of hypoglycemia, or dealing with parental supervision. This opened a friendly discussion on the differences among T1DM treatments, and between hyper and hypoglycemia. The kinds of thoughts people without depression have were identified, followed by a discussion on *Negative Thought Styles*. José shared he felt bothered by most GMs for arriving late. *Positive and Negative Thoughts Worksheets* were assigned. Upon GMs’ comments, Luis expressed that, although his HbA1c was good, his mother wanted a lower value. After several days, she called to report that Luis was suicidal. In a special session, the MT met with Luis’s parents and the WT with Luis alone. He discussed feelings of loneliness, anger, and of being tired of T1DM, but suicidal risk was minimal. He said he might leave the group because he was too shy, did not like to talk, and had difficulties establishing relationships. In the end, he agreed to continue therapy.

Sessions 4–5—At session 4 Luis was absent. Techniques to improve GMs’ thoughts were discussed. Some talked about recent positive life events and improved self-care. Youth were prompted to talk about how they visualized their future, and were open to provide examples. A relaxation exercise was conducted, which they liked very much. Youth shared about the time they devoted to worry about T1DM. All said sometimes they felt as an economic burden to their families. An exercise was performed making a list of bad things that could happen if they invited someone to a movie. Juana interrupted often. José was happy that he began using the insulin pump, and expected to have more freedom. David seemed down and results on his glucose levels were high. At session 5, José arrived late and David and Juana were absent. Therapists emphasized on applying the ABCD method to T1DM-related situations that provoked negative thoughts. Rosa had another good week and was proud of

her academic achievement. Final minutes were used to begin the discussion of the Stress Management handout. José described the school-related stress he experienced and how it kept him from sleeping. He explained how much stress he felt from a school group project because most responsibilities fell upon him. He quit tennis because his father pressured him too much. José also shared negative thoughts when faced with kidney pains. Luis said he also had a good week and talked about career goals. He said he channeled negative thoughts by punching pillows. Rosa said she heard Luis's mom saying he did not want to attend sessions and prompted him to attend. Somewhat upset, he explained his trouble waking up on time. Rosa and José missed Juana and David, and described him as a leader and motivator.

Activities Module (Sessions 6–9)

Sessions 6–7—José and Rosa explained the ABCD method to David and Juana. Therapists discussed how depression limits participation in activities, increasing mood symptoms, and affecting health by decreasing self-care. Pleasant and constructive activities were proposed as an alternative to this cycle and the obstacles to participate in and enjoy them were discussed. More family conflict and stressors (such as excessive schoolwork) were revealed. David talked about conflict at home. The ABCD method was used to help modify his thoughts. Juana and Rosa said they remained quiet when their parents criticized them because they did not want to hurt them. Juana said they did not know how to manage anger. The WT shared some anger management strategies. Rosa said her parents could not understand her because they did not have T1DM. The WT modeled how non-diabetics could be empathic. David shared positive and negative experiences and gave good feedback. José said he made a short film about bullying and was congratulated at school. Session ended assigning the *Pleasant and Constructive Activities Worksheet* and framing José's film as a constructive one. Rosa reported difficulties with the insulin pump and resumed using injections, to which she attributed her recent glucose level fluctuations. Luis was absent. Upon contacting his family, they reported he was no longer thinking about committing suicide.

At session 7, the benefits of combining positive thoughts and activities were discussed. Therapists pointed the need for balancing pleasant activities and obligations to improve quality of life. Juana said she did not have a good balance, but enjoyed filling out the worksheet at home when she realized she completed many activities daily. She provided an example of showing altruism to two persons. Next, activity planning and programming skills were presented as tools to overcome possible obstacles that could keep youth away from doing pleasant activities. David said he successfully asked a teacher for additional time to finish his work and enjoyed a movie with his family. GMs planned a low-cost pleasant activity and, later, a party for which they made all arrangements needed considering their T1DM. The handout on exercises and physical activity was discussed. Therapists assigned the *Weekly Activity Schedule*. Luis attended session 7. GMs integrated him. He talked about his pleasant activities and schoolwork. An evaluation of his progress showed a decreased CDI score and an increased self-care. Although reductions in CDI scores occur after four CBT sessions, timing suggested the individual session helped him too.

Sessions 8–9—Therapists gave examples of specific goals, and provided practice in changing general goals into specific ones. This required additional time, since some youth were confused with the concept, but later most said they liked it. The group practiced establishing realistic goals (even self-care goals) and dividing them in small steps. GMs shared how their goals had changed since having T1DM. David was absent. Juana provided good feedback to others. She reported having faced and solved a problem with someone. Juana, José, and Rosa reported exercising in the past week. Therapists gave examples of short-term and long-term goals and participated with GMs in an exercise to apply concepts. The corresponding goal-setting worksheets were assigned. Rosa was more in control of her glucose levels. Therapists provided positive reinforcement.

At session 9, therapists used perceptual pictures to explain differences between the “objective” and the “subjective” world. They distinguished among things that are somewhat in our control (e.g., doing activities, challenge negative thoughts) and those that are not (e.g., having T1DM, other’s thoughts and actions). Problem solving skills were applied to obstacles faced when trying to do activities. Juana described a conflict she had with a friend. Her negative thoughts were restructured. The discussion on diabetes burnout and the *scale exercise* took place, as well as the distinction among personal and interpersonal activities. Myths about T1DM were clarified. Luis missed both sessions. Her mom said he left the group, but would try individual therapy again.

People Module (Sessions 10–13)

Sessions 10–11—GMs showed insight on the relation between their mood, glucose levels, and activities. The link among social contacts, depression, and quality of life was detailed. Therapists defined *social withdrawal*, illustrating its effect on T1DM-related feelings and self-care using a diagram. GMs shared useful experiences. They asked about Luis and the MT let the group know he would not be returning to therapy. Social support was described as a tool to face hard situations, T1DM management included. During the *wool yarn exercise*, a symbolic net was created among GMs and therapists, while each one told each other a positive quality. GMs were receptive to feedback and enjoyed it. The *Social Support Network Worksheet* was completed. Youth included other GMs and therapists in their networks. A group network was made. Ways to expand or keep a network and strategies to make friends were emphasized. Session ended discussing *passiveness*, *aggressiveness*, and *assertiveness*. GMs were asked to focus on interpersonal activities and rate them as negative or positive. The ABCD was assigned to debate thoughts that hinder relations. In session 11, family conflict re-emerged in a sense of injustice, bad communication, and mistrust. Therapists invited GMs to increase positive and reduce negative thoughts at social interactions. Expectancies of rejection for T1DM were analyzed. GMs shared with whom they felt comfortable disclosing their T1DM, and things that those persons did well. Parent-adolescent relations were used to show the need for having realistic expectations about others. Exercises on using assertiveness and communication skills to ease interactions took place, as well as a role-play about situations in which GMs could be assertive with parents. GMs were asked to do pleasant and constructive activities with them.

Sessions 12–13—Therapists shared with GMs the factors to promote cohesion and strategies to disclose their T1DM to others. The relation among T1DM, depression, and family conflict was explained, using examples provided by adolescents. Conflict-resolution skills were applied to GMs' situations. This was the part they liked the most. GMs practiced assertiveness and other skills in managing peer pressure to avoid behaviors that put health at risk. GMs were asked to study the handout on relating with health care professionals. Before session 13, therapists met with José and his mom to discuss his career interests and use of marijuana. At session 13, they shared the benefits of considering others' feedback, and strategies to promote receptiveness when youths communicated their assessments about others. A game was played in which everyone wrote on papers, placed at each other's back, qualities reflecting how each one was viewed by the others. The creation of collaborative relationships with professionals was targeted and GMs shared their experiences in this domain. Discussion on skills to improve and cultivate relationships and a game to practice active listening skills followed. Juana shared some quotes she found and others she wrote. One said: "If diabetes came to my life, it is for a good purpose, so I don't complain". Youth were assigned to bring a special meal to share.

Termination Session (Session 14)

Main themes of each module were integrated. A progress evaluation, with achievements and strengths of each GM, was made. Advice for GMs was discussed either in group or in individual meetings, as appropriate. Therapists encouraged GMs (especially Rosa) to express their feelings assertively, even sadness. Juana said her glucose levels were controlled during the past week. David reported he used his manual to help a friend. Rosa used assertiveness and conflict-resolution skills to mediate in a conflict at school. José said he had reunited with a youth group at church, and that the ABCD method had been useful in his life. GMs encouraged David to be assertive with his mom. Cohesion as well as empathy was excellent. Insight and catharsis were also present in sessions. Rosa said therapy made her conscious of things she needed to change about her character. Youth and therapists shared a healthy meal while discussing healthy nutrition and myths about diabetes. GMs participated in the closing activity, in which each prepared a postcard with trimmings and messages for other GMs and therapists. A group postcard was formed with the individual ones. GMs reacted to messages written by others. The activity was very emotive to all. Therapists provided space for final comments by GMs and shared their impression about the group experience. They also invited youth to keep practicing the skills and strategies shared in group therapy, and to consult their manuals as resources into the future.

Feasibility, Acceptability, and Satisfaction

CBT-DM implementation was feasible. Therapy was conducted as programmed and with only two individual sessions. Schedules were set by GMs' preferences but some arrived late more than once. Juana, David, and José rated their treatment satisfaction with the highest score (4 = *very satisfied*) and Rosa rated hers as 3 (*mostly satisfied*). Luis provided a rating of 2 (*50% satisfied*). Mothers gave similar ratings. Mean GMs' and mothers' ratings were of 3.4. They did not identify negative treatment effects. Rosa's mom said Rosa gained more understanding about how parents and families are also affected by T1DM. José's mother suggested developing "a structured parent intervention" to deal with T1DM-related

concerns. David's mom said she would like CBT-DM to last longer. Luis's mother said that although her son's self-care showed some improvement, he was very private about things and preferred therapy to be "more dynamic." The chance to share with and listen to others with similar problems, GMs' acceptance, therapists support, and tools learned for dealing with their difficulties, were identified as the most salient features of CBT-DM. All mothers said they "would definitely recommend this treatment".

9. Complicating Factors

Some format- and therapist-related factors may complicate outcomes in CBT-DM. In group format each client receives less therapy time than in individual. Skilled therapists must benefit GMs as much as possible by promoting cohesion, skills practice, and social learning. As Luis, some GMs provoke bewilderment on others. Others provoke negative reactions at specific times, as when Rosa told Luis what she heard his mom saying. Some may not be apt for group therapy. Among therapist-related factors are the skills and experience in group format, T1DM education level, individual/collective orientation, planning/organizational skills, and level of attention to age-related issues and cultural values (e.g., those related to the "Latino" and "T1DM" status).

Patient-related complicating factors could be individual or collective. Among people with T1DM, it is probable to be absent once or more for being hospitalized or very sick. Mental health factors, such as ADHD (limiting attention span or ability to remain seated), ODD and Conduct Disorder (hindering disposition to follow directions, like group rules and self-care guidelines), anxiety symptoms (elevating glucose levels), and social withdrawal or Social Phobia (if small groups are the feared situation), could affect outcomes in a therapy with similar goals and format as CBT-DM. As Rosa, GMs may have problems with the insulin pump and they may need an adjustment period to regain previous self-care levels after resuming insulin injections. Glycemic control in those youth could be hindered, leading to more emotional problems, initiating a vicious cycle. Adolescence itself could be a complicating factor for glycemic control and, to a lesser extent, emotional problems. Among collective factors we observed in our case were family conflict (all cases), low social support (most), parent-child communication problems (most), parental psychopathology (most), low T1DM knowledge (two moms and one youth), and punctuality (some). The latter must be managed carefully, as conflict among GMs may arise.

10. Access and Barriers to Care

Several factors could be barriers to care. First, some families may not have the economic resources to buy an insulin pump or the supplies needed for using injections, to test for HbA1c as often as advised (e.g., Juana's last test was 6 months before enrollment) or even to do glucose testing. Second, distance to our site was long for all GMs. Psychological services sensitive to T1DM youth are scarce in PR, and families sometimes travel long distances to visit a pediatric endocrinologist. Third, most of our GMs had recurrent or chronic depression, and many had been resistant, non-compliant, and/or dissatisfied with previous depression treatments. Finally, Latino men's beliefs linked to *machismo* may manifest as

reluctance to seek mental health services and express sadness, and self-medication with substances; these may also be barriers to care.

11. Follow-Up

At post-treatment (Post), all GMs showed considerable reductions in evaluators-rated depressive symptoms, and most showed decreases in CDI scores (Table 1). The exception was José. We believe this was because he underreported his symptoms at baseline (Pre). Still, even José reported lower scores 6 months after treatment (6M). Treatment gains on depression were sustained in all youth, with mean scores at Post and at 6M below the cut-off points or within normal range. Similar results were observed in suicide ideation, an area in which Juana and Luis' reductions were dramatic. José's score of 8 at 6M was made of scores of "4" in items on general thoughts about death or people dying (a camp leader's death). As a group, improvements were also observed in depression-related interpersonal problems, hopelessness (mostly at 6M), social withdrawal, helplessness, self-esteem/guilt problems, self-care behaviors, aggressiveness, and anxiety. David's anxiety at Post concurred with complaints of being judged at home. Getting in touch with his feelings may have increased José's report of anxiety at 6M. Rosa's self-care score decreased at Post as she had recently resumed insulin injections. Yet, at 6M her score stabilized.

GMs also showed higher self-efficacy for depression ($M_{Pre} = 102.2$, $SD_{Pre} = 20.3$; $M_{Post} = 107.2$, $SD_{Post} = 19.4$; $M_{6M} = 118.8$, $SD_{6M} = 9.0$) and for T1DM ($M_{Pre} = 103.8$, $SD_{Pre} = 12.7$; $M_{Post} = 117.0$, $SD_{Post} = 12.6$; $M_{6M} = 112.4$, $SD_{6M} = 10.7$), fewer quality of life problems ($M_{Pre} = 110.8$, $SD_{Pre} = 22.3$; $M_{Post} = 100.2$, $SD_{Post} = 18.3$; $M_{6M} = 81.2$, $SD_{6M} = 17.9$), higher functioning ($M_{Pre} = 52.2$, $SD_{Pre} = 2.9$; $M_{Post} = 69.0$, $SD_{Post} = 4.2$; $M_{6M} = 73.0$, $SD_{6M} = 4.6$), and improved HbA1c. In the latter, gains were observed at 6M. Rosa did not improve her HbA1c. David's higher anxiety and increased family conflict may explain his increased HbA1c at Post (11.20). Some HbA1c improvements could be more related to the use of an insulin pump than to CBT-DM. Finally, none of the GMs met criteria at Post for a depressive disorder. David no longer met criteria for ODD, and Rosa did not meet criteria for any anxiety disorder. José said he quit marijuana. We think Luis's ADHD continued but collected no Post data as he denied ADHD at Pre.

12. Treatment Implications of the Case

Group therapy has its advantages: Reduced costs, increased sense of altruism, greater efficiency of time, reduced sense of isolation, facilitating feedback reception, learning from others' experiences, creating a hope for change, and providing partners for practicing skills, are only some. In CBT-DM, GMs collaborated in the analysis of thoughts, provided feedback about activities and goals, shared strategies for T1DM management, and were supportive to each other. To recruit GMs with specific physical and mental health comorbidities is a challenge but the environment created by commonalities among GMs outscored challenges.

Consistent with the Latino value of *simpatía*, GMs were encouraged to provide and seek support from each other while showing dignity and respect toward them (Aguilera et al.

2010). We believe that increased commonality among GMs boosted *simpatía*'s therapeutic power in this burdened, underserved, and low-income population. It also promoted analysis of thoughts based on common grounds, not in each member's intrapsychic world. Besides, as stress sources were very similar (e.g., need for adapting daily routine to T1DM, overwhelming treatment burden, social stigma, decreased quality of life, family conflict, low family cohesion, communication difficulties, academic burden, and other age-related stressful events), many recommendations provided by therapists or GMs found general applicability and usefulness for the whole group.

With Puerto Ricans, some have noted the need for enhancing motivation because of negative health- and diabetes-related attitudes, skepticism regarding the value of self-care, and reduced social support for sustaining adherence (Osborn et al., 2010). CBT-DM provides an oasis for a population avid for social support and acceptance and restructures self-care as a constructive activity that promotes emotional and physical well-being, with the ultimate goal of improving quality of life. Therapists' non-judgmental and emphatic stance, and role modeling, may be powerful, novel, motivating, and healing experiences to youth that could help them develop a sense of hope in creating collaborative relationships with other professionals, and even true parent-youth teamwork in T1DM self-care. The impact of this experience is optimal if sessions are facilitated by a man and a woman. Yet, integrating strategies such as motivational interviewing could enhance CBT-DM's potential to impact self-care and glycemic control.

Some depression treatment studies in adults with chronic physical illnesses (such as diabetes) have been conducted in PR at primary care facilities, using CBT among treatment protocols and finding evidence of its efficacy (Ruiz-Aponte, 2010; Vera et al., 2010). As therapy services for Latino youth with T1DM and depression are scarce and they must seek continued primary care services, CBT-DM may be a useful treatment if delivered in primary care settings, and a feasible alternative to antidepressants. Adapting CBT for AD to Latino youth populations with a chronic physical illness and emotional problems and translating the protocol into primary care settings, seems like a promising approach to reducing health disparities among Latino youth.

13. Recommendations to Clinicians and Students

Our advice focuses on treatment of comorbid mental and physical conditions, especially among Latinos. First, a collaborative relationship between clinicians and clients is essential. As noted by Miranda and Cooper (2004), participation of ethnic minority patients in medical decision-making can improve health care and reduce health disparities. This premise is supported by the relation between high levels of patient involvement in care and improved patient satisfaction, adherence, and health outcomes, such as glycemic control and emotional distress (Miranda & Cooper, 2004). Second, clinicians must know that, as part of their process of acceptance, clients may need to move through grief stages related to their loss of health, and assessing their current stage is crucial to adapt treatment and enhance its efficacy. Third, clinicians must avoid pathologizing clients' culturally-rooted thoughts (González-Prendes et al., 2011). In T1DM culture, distress and periods of burnout are normal. In fact, negative thoughts in those with chronic illnesses may be accurately reflecting their reality of

excessive burden compared to people without chronic illness. Clinicians must be sensitive to this reality when debating thoughts, and consult GMs to ensure empathic restructuring based on common grounds and not solely on professional authority or expertise. Fourth, health care providers must avoid pathologizing client's behaviors and feelings as well. For example, Latino culture may encourage its members to participate in family and social activities in which food plays an important role, and refusing to participate of traditional meals could be considered as offensive (*desaire*) to the host, who offers food as a sign of love and care. As Latino meals prepared by persons without diabetes will mostly not meet standards of healthy nutrition, clinicians must know it could be normal for these clients to make exceptions to their meal plans to show gratitude and keep good relations with relatives and other members of their social support network. However, guilt feelings could arise and should be managed sensitively.

Some recommendations are more directly related to youth in our clinical case. Trust issues among T1DM youth and their parents will probably arise. The mothers of José and Rosa suspected, and confirmed, that the youths falsified results of glucose tests. José was also found using marijuana. Therapists acted carefully to avoid reproducing family dynamics by acting as their parents did. Even when trust issues were a problem between José and his parents, thanks to therapists and GMs, José shared his feelings with the group and learned to trust others and be trustworthy. Luis' case provides fodder for specific recommendations. Our experience suggests that managing ADHD in CBT-DM could require special planning and strategies. Besides promoting feelings of belonging, specific strategies may be needed to prolong attention span. These patients should benefit from participating in activities that require physical movement (such as role playing) and from the assignment of specific tasks that prevent them from distraction during discussions (e.g., help therapists by writing down in flipcharts during brainstorming exercises). Finally, assessing parental psychopathology and youth comorbidities is an essential step if therapy is to be sensitive to the clients' context. By ignoring these areas, clinicians that work with T1DM youth are at risk of wasting time and of "throwing punches blindly", as important dynamics affecting the client's depressive and health symptoms could remain unknown for them during the entire process.

CBT-DM is more than a set of individual sessions occurring in the same room. Optimal unfolding of its advantages requires specialized skills and careful planning from therapists. When planning and conducting sessions, therapists should keep in mind not only each individual but the group as a whole. As much as possible, therapy plans should include all GMs. Although attendance should be encouraged, plans should be prepared independently of who is absent, and adapted as needed. Group psychotherapy can stimulate solidarity among members, respect for their differences, effective communication, and active collaboration. In fact, it could serve as a social instrument to move people from an individualistic and sectarian worldview to one that promotes community values and interdependence, which indeed are congruent with the Latino culture.

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Adolescents' Scores in Emotional, Cognitive, Behavioral, Medical and Relational Outcomes (Baseline, Post-treatment and Follow-up)

Table 1

Case	CDI			CDRS-R			SIQ-Jr			HOPEL			HELPL			SE-GUILT		
	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM
Juana	34	23	7	56	34	29	44	18	0	6	6	0	4	8	0	5	8	1
Luis	22	1	3	51	32	25	38	0	0	0	0	0	0	0	0	0	3	0
David	13	5	1	47	28	26	3	0	0	1	1	0	0	0	0	6	0	0
Rosa	24	15	16	57	35	34	11	11	8	16	9	3	17	7	3	19	7	1
José	14	16	11	40	32	30	2	2	8	1	5	0	0	4	0	3	0	1
Mean	21.4	12.0	7.6	50.2	32.2	28.8	19.6	6.2	3.2	4.8	4.2	0.6	4.2	3.8	0.6	6.6	3.6	0.6
SD	8.5	8.9	6.1	7.0	2.7	3.6	19.9	8.0	4.4	6.7	3.7	1.3	7.4	3.7	1.3	7.3	3.8	0.5

Case	BAI			HbA1c			AGR			SW			SCI			DRINTPR		
	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM	Pre	Post	ΔM
Juana	16	10	14	9.9	9.9	9.5	9	10	9	4	2	1	45	54	51	1	6	0
Luis	3	5	0	6.8	6.9	6.4	10	3	1	9	6	3	59	71	70	5	2	0
David	16	24	11	8.7	11.2	6.8	5	4	1	5	3	0	46	50	59	9	0	0
Rosa	32	13	10	9.4	10.0	9.5	15	11	11	3	1	3	64	57	62	7	4	5
José	6	8	14	11.8	9.2	9.0	11	8	6	6	6	7	48	53	51	0	1	3
Mean	14.6	12.0	9.8	9.3	9.4	8.2	10.0	7.2	5.6	5.4	3.6	2.8	52.4	57.0	58.6	4.4	2.6	1.6
SD	11.3	7.3	5.8	1.8	1.6	1.5	3.6	3.6	4.6	2.3	2.3	2.7	8.6	8.2	8.0	3.8	2.4	2.3

Note. SD = Standard deviation; CDI = Children's Depression Inventory; CDRS-R = Children's Depression Rating Scale-Revised; SIQ-Jr = Suicide Ideation Questionnaire-Junior; HOPEL & HELPL = Subscales of the Hopelessness and Helplessness Adolescent Scale; SE-GUILT = Self-esteem and Guilt Problems Scale; BAI = Beck Anxiety Inventory; HbA1c = Glycosylated hemoglobin value obtained when testing for glycemic control (recommended values are < 7.50); AGR & SW = Aggressive Behavior and Social Withdrawal Subscales of the Child Behavior Checklist; SCI = Self-Care Inventory; DRINTPR: Depression-related Interpersonal Problems Scale; Pre = Baseline assessment; Post = Post-treatment assessment; ΔM = 6 months follow-up