

Kennesaw State University

DigitalCommons@Kennesaw State University

MSN in Leadership in Nursing Final Projects

Wellstar School of Nursing

Fall 12-10-2020

Psychological Aspects of Adolescent Diabetes

Dawn Ziegler

dziegler@students.kennesaw.edu

Follow this and additional works at: https://digitalcommons.kennesaw.edu/nursmast_etd



Part of the [Nursing Commons](#)

Recommended Citation

Ziegler, Dawn, "Psychological Aspects of Adolescent Diabetes" (2020). *MSN in Leadership in Nursing Final Projects*. 11.

https://digitalcommons.kennesaw.edu/nursmast_etd/11

This Research Project is brought to you for free and open access by the Wellstar School of Nursing at DigitalCommons@Kennesaw State University. It has been accepted for inclusion in MSN in Leadership in Nursing Final Projects by an authorized administrator of DigitalCommons@Kennesaw State University. For more information, please contact digitalcommons@kennesaw.edu.

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Psychological Aspects of Adolescent Diabetes

By Dawn Ziegler, BSN, RN

Kennesaw State University WellStar School of Nursing

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Abstract

Adolescence is a time of swift change physically, psychologically, and socially. A severe onset of diabetes and the life-long treatment required can cause significant changes for adolescents integrating this chronic illness into their identity. This study examined the current literature surrounding self-esteem in the newly diagnosed adolescent with diabetes, the quality of evidence, and the knowledge gaps addressing the social and personal challenges of advancing through life with this illness. A systematic search contained articles between 2010-2020. Key search terms included adolescents, diabetes type 1, behavioral approaches, emotional health interventions, self-esteem, self-worth, self-image, psychological, psychosocial, coping, stress, and resilience. To provide a clearer perception on which behavioral approaches have improved the self-esteem, worth, and one's image of newly diagnosed diabetic adolescents, Whittemore and Knafl's (2005) integrative approach was used to conduct this review. The findings indicated a relationship between diabetic adolescent's self-esteem, self-care, and glycemic control. Healthcare providers need to have a greater understanding of illness-specific challenges that may negatively affect an adolescent's self-esteem and compliance with the complex, daunting treatment regimen.

Keywords: adolescents, diabetes type 1, behavioral approaches, emotional health interventions, self-esteem, self-worth, self-image, psychological, psychosocial, coping, stress, and resilience

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Psychological Aspects of Adolescent Diabetes

Self-esteem is the ability of individuals to perceive their value. Ackerman (2020) noted that self-esteem expert Morris Rosenberg described self-esteem as one's attitude toward oneself. A common theme in the varied definition of self-esteem is self-respect. Self-esteem indicates the extent to which the individual believes himself or herself to have a positive outlook, the ability to be confident and to express one's own needs. Kenowitz et al. (2020) state that self-esteem is a factor in an individual's self-concept and is crucial in adolescents' evolution with independent identity development.

Adolescence is a time of swift change physically, psychologically, and socially. Chronic illness has the potential to significantly impact growth and maturation through the transition of youth into adulthood. Type I diabetes is a chronic condition that typically appears in adolescence, during which the pancreas produces little or no insulin. Borus and Laffel (2010) identify type 1 diabetes as the second most common chronic illness in adolescents behind asthma. Delamater et al. (2014) found that adolescents are susceptible to adjustment changes and consequences during the introductory period following diagnosis. The young person may battle a range of reactions and emotions regarding their condition, responses to others, and have concerns about going to school. In order to provide quality healthcare services to support and promote self-esteem in our young people, health professionals need to understand the social and personal ramifications of living with a long-term illness.

Background

According to the Centers for Disease Control (CDC, 2019) 17,900 children and adolescents were diagnosed with type 1 diabetes. Morone (2019) explained type 1 diabetes constituted 80% of all pediatric cases. This disease is a very costly chronic illness in the USA, at

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

\$14.4 billion in annual healthcare expenditures. Jaser et al. (2016) reported that over 18,000 new cases are diagnosed each year, with prevalence increasing. Young people often go through the five stages of grief as a coping strategy when newly diagnosed. Various adverse reactions like sadness, loneliness, or irritability may be experienced by the adolescent when dealing with a complex disease's daily management. These potential reactions may also contribute to depression, eating disorders, and glycemic control challenges, negatively influencing adolescents' quality of life. Little is known about the best methods to address the psychological concerns associated with adolescent diabetes and the lack of awareness of this unique population's needs. To improve behaviors such as treatment adherence and promote self-esteem, an understanding of the relationship between diabetes and psychological conditions needs to be established.

This integrative literature review focused on the current evidence surrounding self-esteem in the newly diagnosed adolescent with diabetes, the quality of evidence, and the knowledge gaps addressing the personal and social challenges of growing up with a life-long condition. A severe onset of diabetes and complex treatment regimen requires rapid changes for adolescents integrating diabetes into their identity. Hilliard et al. (2016) and Guo et al. (2011) discussed how adolescents could be vulnerable to psychological problems when managing the stress of type 1 diabetes. Common responses often reported are feeling different, embarrassment about the diagnosis and their friends' reactions, feeling overwhelmed with daily tasks of their condition, and difficulty coping with the family's emotional response. Luyckx et al. (2014) found that when developmental tasks such as puberty are disrupted by chronic illness, feelings of being different hindered adolescents' positive self-esteem. Maslow's hierarchy of needs interprets self-esteem as one of the basic needs that drive human behavior. Therefore, it is essential to determine the

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

association between diabetes-specific self-esteem, self-care, and the most effective coping strategies among the adolescent population at the highest risk for poor health outcomes and low quality of life (Vigen et al., 2018).

Clinical Problem

Adapting to the diagnosis of diabetes is a life-long process. Type 1 diabetes is one of the most common chronic childhood illnesses, affecting one in 400 young people under 20, with recent research indicating a rising incidence (Compas et al., 2012). Often this diagnosis comes unexpectedly, forcing an uncertain future for the adolescent. Adolescents with type 1 diabetes are potentially susceptible to psychosocial morbidities such as depression, eating disorders, family struggles, poor health-related quality of life, low self-efficacy, and lack of obedience with their therapeutic management and glycemic control (Fogel & Weissberg-Benchell, 2010).

Similarly, Battaglia et al. (2006) found depressive symptoms have been associated with increased hemoglobin A1C numbers, crucial for early diagnosis and treatment. Vigen et al. (2018) further indicated that depressive symptoms and gratification with daily activities are associated with elevated hemoglobin A1C levels and a lower quality of life. Baucom et al. (2015) also found depressive symptoms are associated with an adolescent's daily stress, adherence, and glycemic control. The authors established that adolescents with poor glycemic control are more likely to have underlying psychosocial issues. Delamater et al. (2018) further explain that 14% of the youth diagnosed with type 1 diabetes report mild depression, while 8.6% have reported moderate to severe depression. Females are more likely to report depressive symptoms than males. The stress produces an added burden to adolescents already encountering difficult challenges with friends, parents, and themselves.

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Kenowitz (2020) indicated minimal research tackled the correlation between illness-specific self-esteem and diabetes outcomes. Hood et al. (2014) also clarified that there has been some understanding of the interaction between psychosocial burden in adolescents diagnosed with diabetes. However, the exact structure that linked the two was not well defined. To gain further insight into the factors that intervened in the relationship between illness and the psychological adjustment to diabetes, the following research question has guided this review: Which behavioral approaches have been shown to improve the self-esteem, self-worth, or self-image of newly diagnosed diabetic adolescents?

Diabetes-Related Stressors

Adolescents face several challenges regarding adherence to their treatment regimen. Stress can be a significant barrier to effective glucose control. Diabetes-related stress refers to the emotional reaction associated with the ongoing strain and uncertainty of their illness. Acute and chronic stressors categorize diabetes-related stressors. Glucose-related events like hypoglycemia, hyperglycemia, diabetic ketoacidosis, and treatment changes are acute diabetes stressors. Chronic diabetes stressors include feelings of being overwhelmed, discouraged, and displeased with this chronic illness's demands. Starkman et al. (2019) also identified how adolescents reported feelings of frustration when their daily routines were disrupted, negatively influencing the adolescent's self-management behaviors.

Delamater et al. (2018) noted that young people with diabetes had increased depression, anxiety, and eating disorders than their healthy peers. Adolescents often live in the present, feel they are indestructible, and cannot always make the connections to the ramifications faced when not adequately managing their diabetes. Guo et al. (2011) noted in their study that this stage of adolescence had been associated with the failure of one's diabetes management. Vulnerable

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

adolescent females express concern with weight gain due to insulin treatment therapy, dietary restrictions, and emphasis on physical activity, leading to inappropriate behaviors such as the omission of insulin to promote weight loss. Fogel and Weissberg-Benchell (2010) further evaluated concerns with weight and shape and disturbed eating behavior (DEB) predictors with lower self-esteem and depression common in girls with type 1 diabetes and their healthy counterparts.

General Stressors

General stressors are identified and characterized by acute and chronic pressures. Acute general stressors involved school and family-related concerns. In a study by Chao et al. (2016), 82% of the 205 adolescent type 1 diabetic participants identified school as their top stressor, while 48.1% of adolescents reported diabetes as their top stressor. Chronic general stressors can result in the adolescent feeling disconnected, depersonalized, and distant due to stressful life events. Some uncertainty remains as to why some adolescents adapt well to their diabetes diagnosis, while others encounter severe emotional and psychological issues that may remain in their adult lives (Peters, 2011). Evidence supported that general and diabetes-related problems have been correlated with inadequate glycemic control (hemoglobin A1C); however, only general stressors are linked to adherence behavior (Chao et al., 2016).

Methods

An integrative review approach based on Whittemore and Knafl (2005) was used to search for articles focused on the concept of adolescent diabetes. Whittemore and Knafl's (2005) framework consisted of a five-step process (identification of a problem, data search, evaluation of data, analysis, and conclusion) that favors multiple types of articles included in this integrative review. This approach supported a narrative synthesis of results when the design, measurement,

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

and methodology differ across these studies (Whittemore & Knafl, 2005). The research question guided the study to explore the relationship between illness-specific self-esteem among adolescents with type 1 diabetes.

Data Search Stage

A systematic search was conducted using PubMed, EBSCO, and Google Scholar to identify research studies addressing adolescents recently diagnosed with diabetes type 1 and adolescents with more than one year of experience with their diagnosis. Publications were included if the topic addressed coping and stress with type 1 diabetes, the participants were adolescents, the language was English, and the date of publication range was 2010-2020. Abstracts were reviewed to determine the use of the articles about the topic of adolescents between 10 and 18 years of age with type 1 diabetes that addressed psychosocial issues related to the diagnosis. Publications were excluded if the abstract were written in languages other than English, participants were not adolescents, and the articles were not discussion or review papers. Articles related to type 2 diabetes, adults, and those articles before 2010 were also excluded.

A total of 22 articles were identified during the systematic search using key terms. Key search terms included adolescents, diabetes type 1, behavioral approaches, emotional health interventions, self-esteem, self-worth, self-image, psychological, psychosocial, coping, stress, and resilience. A broader inclusion criterion was necessary to obtain the most holistic picture of the symptoms.

Literature Search Framework Utilizing PRISMA Flow Diagram

Literature analysis occurred in several phases. All articles included were read once to get an overview and a second time for data extraction using a methodological approach to use

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

quality criteria appraisal tools in the evaluation process. A single independent reviewer reviewed all studies for inclusion and exclusion criteria.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed to document, search, sort, and evaluate studies. The researcher used a PRISMA literature audit trail (Figure 1). The literature audit trail demonstrated the process of the systematic literature search, review, and a chronological explanation of the articles identified through the various databases. The audit trail detailed the number of duplicates, if any, that were removed, the number of items initially screened and excluded, and a full-text review applying inclusion and exclusion criteria. Finally, the process involved identifying the number of articles to be included in this literature review.

After extensive reading of each article's abstract to ensure the content targeted adolescent's critical factors, diabetes type 1, and self-esteem, a constant comparison approach was used as a step to determine if the original researchers' interpretation was valid. Dang and Dearholt (2017) John Hopkins Evidence-Based Practice Appraisal Tool (JHEBP) was employed to evaluate the primary sources' quality and ability to extract data about diabetic adolescents' emotional well-being and barriers to lifestyle changes (self-esteem), and quality of life concepts.

Literature analysis

The data analysis review consisted of information from the primary sources organized, categorized, and summarized outlining the population studied. The researcher ranked each of the 22 studies on the level of evidence using a 7-level scale ranging from level I to level VII, using the JHEBP Evidence Level and Quality Guide (Dang & Dearholt, 2017). Three articles ranked level I showed school, social life, and diabetes as the top stressors reported by adolescents. In addition, the articles reported a clear relationship between diabetes self-management and

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

glycemic control in the youth participants. Seven items ranked level III, considered the family and peers' role in diabetes adherence and its toll on the adolescent diagnosed with type 1 diabetes. The two articles ranked at a level V support a direct association between stress, self-esteem, and glycemic control. A summary table (Table 1) was created that contained applicable information of each article included in the integrative review. Information compiled in the table included author and publication date, the study sample, study design, major findings, limitations and evidence rating.

Results

Research Population

This study aimed to determine the association between diabetes-specific self-esteem, self-care, and the most effective coping strategies that impact life quality, competence, and metabolic control. Kenowitz et al. (2020) found a positive self-concept, including general self-esteem, was associated with better glycemic control in adolescents with type 1 diabetes. Increasing the knowledge about the relationship between self-esteem and diabetes management can improve the provider's understanding of the adolescent's downturn in self-care and glycemic control.

A total of twelve studies met the full inclusion criteria (See Table 1). In most studies, the female gender accounted for 52% ($n=845$) of the participants, with a total population of ($n=1637$) represented. The age varied among the participants from 10 years of age to 18 years of age, with the mean age being 14 years old. Two of the studies observed adolescents from as young as 10 years of age. One study reported the age range from 13 years of age to 21 years of age (Kenowitz et al., 2020).

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Participants were recruited from practice settings such as outpatient diabetes clinics. One study by Hood et al. (2014) recruited four geographically defined populations from Ohio, Washington, South Carolina, and Colorado. Health plan enrollees from Hawaii and California were also recruited. Also, Indian Health Service from four American Indian populations in Arizona and New Mexico participated in this study. Another study conducted by Hood et al. (2014) involved a multi-site randomized clinical trial observing participant response to internet coping skills training program and diabetes education program. Valuable insight into the adolescents' experiences with diabetes has been obtained. Four central themes emerged: dealing with emotions, family dynamics, peer support, and psychosocial and behavioral interventions.

Behavioral intervention research by Hilliard et al. (2016) discussed three foundational theories that guide various optimization methods for behavioral diabetes interventions. First was the social cognitive theory (SCT) that considered one's self-confidence in completing particular behaviors and the positive or negative consequences of the actions that influenced those healthy behaviors. The second was the family systems theory (FST) that noted the adolescent's behavior was understood in the framework of family interactions. The third was the social-ecological model (SEM), which found influential and mutual factors from peers, family, community, or society influenced health behaviors.

Theme 1: Dealing with Emotions

One of the most common themes derived from the synthesis of data included evidence that depression was often diagnosed in adolescents with type 1 diabetes. Kenowitz et al. (2020) study findings indicated that diabetic adolescents' self-esteem was significantly associated with self-care and glycemic control. Less than one-third of adolescents can maintain their hemoglobin A1C in the target range for their age (Babler & Strickland, 2015). Both Baucom et al. (2015) and

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Hood et al. (2014) found that depression was linked to poor diabetes management, obedience, glycemic control, and greater stress severity. Borus and Laffel (2010) pointed out that type 1 diabetic adolescents experience depression almost twice the unaffected adolescents' rate. Hood et al. (2014) explained that the worsening of glycemic control during the first six years of the diagnosis of diabetes was due to the psychosocial burden over time. Kenowitz et al. (2020) findings also showed no significant difference in self-esteem among genders; however, a trend was noted for female adolescents reporting lower self-esteem. It has been identified that self-esteem was correlated to self-care and hemoglobin A1C at baseline and after one year, without any change to the hemoglobin A1C level.

Theme 2: Family Dynamics

Family involvement was another contributing factor in the adolescent's treatment regimen adherence and glycemic control. Emotional well-being was found to be pivotal to attaining effective self-management of diabetes for the adolescent and other family members. Manning and DiPietro (2018) described family wellness as a vital component of type 1 diabetes management.

Adolescents diagnosed with diabetes may not have experienced the same degree of independence as their healthy peers enjoyed due to parental concerns regarding their illness. Feldman et al. (2018) indicated that minimal studies had investigated the combination of family-based and psychoeducation training into the introductory of diabetes education for the adolescent and family. However, Feldman et al. (2018) noted that having in-home support from a diabetes nurse has been associated with better glycemic control and strengthened psychosocial adjustment to diabetes, adherence, or family knowledge of the illness. Active family participation in disease management improved adolescent adherence to the treatment regimen

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

(Manning & DiPietro, 2018). Observation should be made regarding family cohesion, support, communication, and collaboration of diabetes management responsibilities. In the study by Berlin et al. (2012), data looking at a family's role revealed family stress rather than social or peer pressure to be a key element related to suboptimal metabolic control. Starkman et al. (2019) found that conflict was frequent around diabetes management. The most common feelings adolescents echoed consistently were feelings of failure, frustration, and anger. Berlin et al. (2012) and Starkman et al. (2019) examined the development of continuing education for clinicians providing care for adolescents with type 1 diabetes and their families to improve provider/family dynamics. A provider continuing education course would allow providers to state feelings, attitudes, and communication styles when caring for adolescents struggling with diabetes management. A provider seminar could include communication techniques to establish compassionate, nonjudgmental interactions between adolescents and their parents.

Family-based interventions targeting improvement with problem-solving, self-monitoring, setting goals, positive reinforcement, behavioral agreements, supportive parental communication, and mutual responsibility for diabetes interventions have improved adherence and metabolic management (Delamater et al., 2018). Effective communication between parents and adolescents is necessary to successfully transition the young person to increased responsibility for diabetes self-management. Guo et al. (2011) found the young person with type 1 diabetes has room to improve their diabetes self-management skills by sharing responsibility with their parents. Jaser and White (2011) identified that coping strategies might increase resilience, as evidenced by the quality of life and a higher social competence reported by the family and the adolescent.

Theme 3: Peer Support

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Considering the all-encompassing nature of type 1 diabetes, the adolescent's psychosocial impact can occur for various reasons, such as being concerned with feeling different from their peers. Chao et al. (2016) explained that having diabetes was a source of stress within adolescent friendships. Peers can have either a supportive or detrimental effect on management behaviors because of their overall lack of understanding of the illness. Due to the requirements of consistently checking one's blood sugar, a reduction in self-management adherence can happen while in their peers' presence to conform to normative peer expectations. Socialization and the pressure to fit in with their peers may be a higher priority for the adolescent than practicing optimal self-management. Fogel and Weissberg-Benchell (2010) found that when friends displayed adverse reactions, the adolescent's adherence decreased, and the diabetes-related stress increased. Starkman et al. (2019) identified a need for education to friends and peers to provide ongoing support efforts to better a young person's glycemic control. Fogel and Weissberg-Benchell (2010) further explained that increased education among a peer group can undoubtedly lead to improved adherence and decreased diabetes-related stress based on their study with adolescents and their best friends. With a lack of knowledge of the disease process, adolescents feel reluctant to rely on their peers for support (Marshall et al., 2018). Incorporating coping strategies such as diabetes-specific problem solving with age-appropriate roleplay scenarios can enhance communication skills when adolescents explain their diagnosis to peers. The increased knowledge perception gained by the friends enhances peer support.

Theme 4: Psychosocial and behavioral interventions

In the family systems theory (FST), the focus was on the adaptive and maladaptive communication between the family members concerning the management of the adolescent's disease. The family systems theory was designed to provide collaborative training involving all

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

family members in a calm, nonjudgmental conversation on diabetes-related topics (Hilliard et al., 2016). Family support is needed for the ongoing day-to-day management of adolescent diabetes. The promotion of the adolescent's self-esteem begins with the adolescent and family being positive even when blood glucose is not under control on a day, recognizing the lessons learned from the day and the experience. The family and adolescent must understand that no two days will ever be the same when testing blood sugars, a learning experience for all.

Babler and Strickland (2015) state interventions must build on adolescent perceptions and strengths. A beneficial resource for adolescents is support groups. Support groups provide adolescents an opportunity to connect with other young people faced with similar issues and offer a space for nonjudgmental discussion to take place. Hilliard et al. (2016) found using the social cognitive theory (SCT) with a training program improved coping skills, quality of life, and glycemic control for adolescents up to one-year post-intervention compared to the control group without coping skills training.

Discussion

The current study investigated the role of diabetes-specific self-esteem of adolescents with type 1 diabetes and found four central themes: dealing with emotions, family dynamics, peer support, and psychosocial and behavioral interventions. Assisting families with behavioral management strategies, such as helping parents or caregivers, focus on the process rather than the behavioral goals. During this time, a goal for parents is to empower their teens. Promoting the young person's self-esteem begins with positive affirmations. Examples include praising the adolescent for testing the blood sugar rather than focusing on the numeric result and avoiding judgmental words when referring to the adolescents' high or low blood sugar numbers. (Manning & DiPietro, 2018). The key to successful diabetes management is education (Lange et al., 2014).

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Therefore, it is important to integrate behavioral health into regular pediatric diabetes care to promote efficient change in the behavioral and medical health of adolescents and families living with type 1 diabetes. Social support and emotional well-being are crucial to achieving effective self-management of diabetes. According to Luyckx et al. (2014), the degree to which an adolescent accepts their diagnosis of diabetes as part of oneself without the feeling of being reduced to the label of "diabetic" is vital to their sense of self. Healthcare professionals play an integral role in supporting adolescents in accepting their diagnosis, effectively managing their condition, treatment adherence, and adapting to life with type 1 diabetes.

Strengths and Limitations

The strengths obtained from the literature analysis identified common themes of dealing with emotions, family dynamics, peer support, and psychosocial and behavioral interventions. As the prevalence of adolescent diabetes continues to increase, nurses must have a greater understanding of illness-specific challenges that may negatively affect adolescents' self-esteem and compliance with the complex, daunting treatment regimen. These findings could be highly beneficial in facilitating diabetes education to impact adolescents' social and personal challenges of growing up with a lifelong illness.

A significant limitation of this review has been the analysis of publications only written in the United States. Restricting articles to only the United States publications could omit other relevant factors unique to different cultures that may have shown diverse adolescent perspectives on self-esteem and diabetes management. Another limitation of this review is race/ethnicity and gender. Many of the studies shared the majority of participants were females. Kenowitz et al. (2020) and Berlin et al. (2012) believed a diverse sample should be examined when assessing self-care association to glycemic control. Morone (2019) indicated that cultural responsiveness

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

has been essential to researchers regarding cultural differences between black and white families with type 1 diabetic adolescents and their perception of what they feel was most important when living as a family unit with type 1 diabetes.

Conclusion

This study aimed to provide information on the adolescent population diagnosed with type 1 diabetes, the subjected substantial changes to their self-esteem, and strategies to promote a complementary view of oneself. After analyzing the literature, knowledge has been gained that psychosocial interventions, coping skills training, and family systems interventions would improve adolescent adjustment to the disease process. Tactful implementation of these interventions could also significantly reduce the parent-child conflict about diabetes management and likely improve glycemic control.

Future studies should further differentiate between general developmental stressors, diabetes-specific stressors and analyze coping as a predictor of treatment adherence. Additional studies may be beneficial in considering self-management behaviors by stage of adolescence. Besides, the role of gender, race, and ethnicity should continue to be explored when observing behavioral approaches shown to improve self-esteem, self-worth, or self-image in adolescents diagnosed with type 1 diabetes.

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

References

- Ackerman, C. M. E. (2020, October 31). What is self-esteem? A psychologist explains. PositivePsychology. <https://positivepsychology.com/self-esteem/>
- Babler, E., & Strickland, C. J. (2015). Normalizing: adolescent experiences living with type 1 diabetes. *The Diabetes Educator*, 41(3), 351-360. <https://doi.org/10.1177/0145721715579108>
- Battaglia, M., Alemzadeh, R., Katte, H., Hall, P., & Perlmutter, L. (2006). Brief report: disordered eating and psychosocial factors in adolescent females with type 1 diabetes mellitus. *Journal of Pediatric Psychology*, 31(6), 552-556. <https://doi.org/10.1093/jpepsy/jsj047>
- Baucom, K. J., Queen, T. L., Wiebe, D. J., Turner, S. L., Wolfe, K. L., Godbey, E. I., Fortenberry, K. T., Mansfield, J. H., & Berg, C. A. (2015). Depressive symptoms, daily stress, and adherence in late adolescents with type 1 diabetes. *Health Psychology*, 34(5), 522. <https://doi.org/10.1037/hea0000219>
- Berlin, K. S., Rabideau, E. M., & Hains, A. A. (2012). Empirically derived patterns of perceived stress among youth with type 1 diabetes and relationships to metabolic control. *Journal of Pediatric Psychology*, 37(9), 990-998. <https://doi.org/10.1093/jpepsy/jss080>
- Borus, J. S., & Laffel, L. (2010). Adherence challenges in the management of type 1 diabetes in adolescents: prevention and intervention. *Current Opinion in Pediatrics*, 22(4), 405-411. <https://doi.org/10.1097/MOP.0b013e32833a46a7>
- Centers for Disease Control. (2019). *Diabetes in youth. Diabetes report card 2017*. <https://www.cdc.gov/diabetes/library/reports/reportcard/diabetes-in-youth-2017.html>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Chao, A. M., Minges, K. E., Park, C., Dumser, S., Murphy, K. M., Grey, M., & Whittemore, R.

(2016). General life and diabetes-related stressors in early adolescents with type 1 diabetes. *Journal of Pediatric Health Care*, 30(2), 133-142.

<https://doi.org/10.1016/j.pedhc.2015.06.005>

Compas, B., Jaser, S., Dunn, M., & Rodriguez, E. (2012). Coping with chronic illness in childhood and adolescence. *Annual Review of Clinical Psychology*, 8, 455-480.

<https://doi.org/10.1146/annurev-clinpsy-032511-143108>

Dang, D., & Dearholt, S. (2017). *Johns Hopkins nursing evidence-based practice: model and guidelines*. 3rd ed. Indianapolis, IN: Sigma Theta Tau International

https://www.hopkinsmedicine.org/evidence-based-practice/ijhn_2017_ebp.html

Delamater, A., de Wit, M., McDarby, V., Malik, J., & Acerini, C. (2014). Psychological care of children and adolescents with type 1 diabetes. *Pediatric Diabetes*, 15(S20), 232-244.

<https://doi.org/10.1111/pedi.12191>

Delamater, A. M., de Wit, M., McDarby, V., Malik, J. A., Hilliard, M. E., Northam, E., &

Acerini, C. L. (2018). ISPAD Clinical Practice Consensus Guidelines 2018:

Psychological care of children and adolescents with type 1 diabetes. *Pediatric Diabetes*, 19, 237.

<https://doi.org/10.1111/pedi.12736>

Feldman, M., Anderson, L., Shapiro, J., Jedraszko, A., Evans, M., Weil, L., Garza, K., &

Weissberg-Benchell, J. (2018). Family-based interventions targeting improvements in

health and family outcomes of children and adolescents with type 1 diabetes: a systematic review. *Current Diabetes Reports*, 18(3), 1-12.

<https://doi.org/10.1007/s11892-018-0981-9>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Fogel, N. R., & Weissberg-Benchell, J. (2010). Preventing poor psychological and health outcomes in pediatric type 1 diabetes. *Current Diabetes Reports*, 10(6), 436–443.

<https://doi-org.proxy.kennesaw.edu/10.1007/s11892-010-0145-z>

Guo, J., Whittemore, R., & He, G. (2011). The relationship between diabetes self-management and metabolic control in youth with type 1 diabetes: an integrative review. *Journal of Advanced Nursing*, 67(11), 2294-2310. <https://doi.org/10.1111/j.1365-2648.2011.05697.x>

Hilliard, M., Powell, P., & Anderson, B. (2016). Evidence-based behavioral interventions to promote diabetes management in children, adolescents, and families. *American Psychologist*, 71(7), 590-601. <https://doi.org/10.1037/a0040359>

Hood, K. K., Beavers, D. P., Yi-Frazier, J., Bell, R., Dabelea, D., Mckeown, R. E., & Lawrence, J. M. (2014). Psychosocial burden and glycemic control during the first 6 years of diabetes: Results from the SEARCH for diabetes in youth study. *Journal of Adolescent Health*, 55(4), 498–504. <https://doi.org/10.1016/j.jadohealth.2014.03.011>

Jaser, S., Patel, N., Xu, M., Tamborlane, W., & Grey, M. (2016). Stress and coping predict adjustment and glycemic control in adolescents with type 1 diabetes. *Annals of Behavioral Medicine*, 51(1), 30-38. <https://doi.org/10.1007/s12160-016-9825-5>

Jaser, S. S., & White, L. E. (2011). Coping and resilience in adolescents with type 1 diabetes. *Child: Care, Health & Development*, 37(3), 335–342. <https://doi.org/10.1111/j.1365-2214.2010.01184.x>

Kenowitz, J. R., Hoogendoorn, C. J., Commissariat, P. V., & Gonzalez, J. S. (2020).

Diabetes-specific self-esteem, self-care and glycemic control among adolescents with type 1 diabetes. *Diabetic Medicine*, 37(5), 760-767. <https://doi.org/10.1111/dme.14056>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Lange, K., Swift, P., Pańkowska, E., & Danne, T. (2014). Diabetes education in children and adolescents. *Pediatric Diabetes*, *15*(S20), 77-85. <https://doi.org/10.1111/pedi.12187>

Luyckx, K., Rassart, J., Aujoulat, I., Goubert, L., & Weets, I. (2014). Self-esteem and illness self-concept in emerging adults with type 1 diabetes: long-term associations with problem areas in diabetes. *Journal of Health Psychology*, *21*(4), 540-549.
<https://doi.org/10.1177/1359105314531467>

Manning, A., & DiPietro, J. (2018). Treating adolescents with type 1 diabetes: psychological interventions to promote adherence. *The Brown University Child and Adolescent Behavior Letter*, *34*(7), 1-7. <https://doi.org/10.1002/cbl.30305>

Marshall, K., Martin, H., & Siarkowski Amer, K. (2018). Exploring perceptions about insulin-dependent diabetes mellitus in adolescent patients and peers. *Comprehensive Child and Adolescent Nursing*, *41*(1), 25-41.
<https://doi.org/10.1080/24694193.2017.1316788>

Morone, J. (2019). Systematic review of sociodemographic representation and cultural responsiveness in psychosocial and behavioral interventions with adolescents with type 1 diabetes. *Journal of Diabetes*, *11*(7), 582-592. <https://doi.org/10.1111/1753-0407.12889>

Peters, A. (2011, November 1). Diabetes care for emerging adults: Recommendations for the transition from pediatric to adult diabetes care systems. *Diabetes Care*, *34*, 2477-2485.
<https://care.diabetesjournals.org/content/34/11/2477>

Starkman, H., Fisher, K., Pilek, N. L., Lopez-Henriquez, G., Lynch, L., & Bilkins-Morgis, B. L. (2019). Listening to adolescents with uncontrolled diabetes, their parents and medical team. *Families, Systems & Health*, *1*, 30. <https://doi.org/10.1037/fsh0000396.supp>

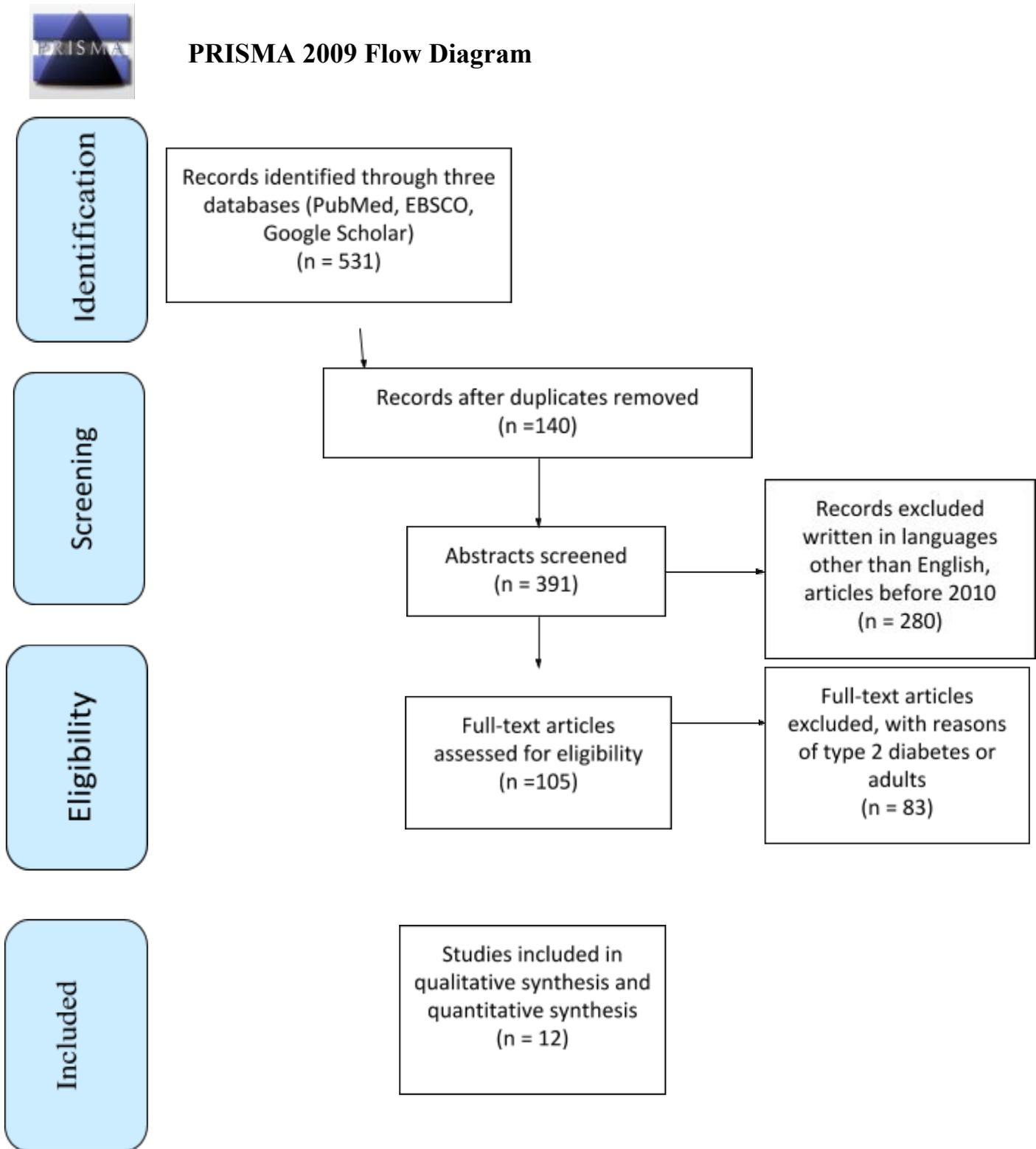
PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Vigen, C., Carandang, K., Blanchard, J., Sequeira, P. A., Wood, J. R., Spruijt-Metz, D.,

Whittemore, R., Peters, A. L., & Pyatak, E. A. (2018). Psychosocial and behavioral correlates of A1C and quality of life among young adults with diabetes. *The Diabetes Educator*, 44(6), 489–500. <https://doi.org/10.1177/0145721718804170>

Whittemore, R., & Knafl, K. (2005). The integrative review: updated methodology. *Journal of Advanced Nursing*, 52(5), 546-55. <https://doi.org/10.1111/j.1365-2648.2005.03621.x>

Figure 1



PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

Table 1*Summary of Findings from Research*

Author, Date	The Aim, Sample, and Setting	Study Design/Methods	Major Findings	Limitations	JHEBP Rating
<p>Jaser, S., Patel, N., Xu, M., Tamborlane, W., Grey, M., Jaser, S. S., and Tamborlane, W. V. (2017). Stress and coping predict adjustment and glycemic control in adolescents with type 1 diabetes. <i>Annals of Behavioral Medicine</i>, 51(1), 30–38. https://doi.org/10.1007/s12160-016-9825-5</p>	<p>Adolescents with type 1 diabetes completed measures of diabetes-related stress, coping, symptoms of depression, and quality of life at baseline, six months, and 12 months at an outpatient diabetes clinic. Data on glycemic control were collected from the adolescents' medical charts. Data included 117 participating families with adolescents ranging from 10-16 years of age. (<i>M</i> age =12.8) 45% of female</p> <p><i>n</i>=105 <i>n</i>=99 (6 months later)</p>	<p>A longitudinal study using the following instruments:</p> <p>Child Depression Inventory (CDI) Glycemic control (A1C) Response to stress questionnaire (RSQ) Pediatric Quality of Life Inventory (PedsQL)</p>	<p>The most common stressor noted was diabetes care at 83%. Adolescents stated the second contributing stressor were their parents.</p> <p>Findings from the study showed coping may help predict the relationship between diabetes-related stress and outcomes. The adolescent's use of primary control coping strategies (problem-solving) and secondary control coping strategies (positive thinking) predicted significantly fewer problems with the quality of life and fewer depressive symptoms over time.</p>	<p>The sample of participants was in relatively reasonable glycemic control, limiting the generalizability of the findings. Families from the sample had a relatively high socioeconomic status and income. Participants endorsed reasonably low levels of stressors, suggesting a possible resilient sample.</p>	<p>Level III</p>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

<p>Babler, E., and Strickland, C. J. (2015). Normalizing: adolescent experiences living with type 1 diabetes. <i>The Diabetes Educator</i>, 41(3), 351–360. https://doi.org/10.1177/0145721715579108</p>	<p>This study aimed to gain an understanding of adolescent's experiences living with diabetes and to build a theoretical paradigm to inform the interventional design</p> <p>There were eleven participants, ages 11-15, with type 1 Diabetes.</p>	<p>Classical grounded theory was utilized.</p>	<p>Normalizing is the adolescents' ability to integrate diabetes into their daily life by creating routines to make diabetes "part of me."</p>	<p>During this study, the limitation noted was the adolescent's emotional response to getting a diabetes diagnosis, leading to needle fear.</p>	<p>Level III</p>
<p>Kenowitz, J., Hoogendoorn, C., Commissariat, P., and Gonzalez, J. (2020). Diabetes-specific self-esteem, self-care, and glycemic control among adolescents with Type 1 diabetes. <i>Diabetic Medicine</i>, 37(5), 760-767.</p>	<p>A mixed-methods study, including qualitative interviews, distinguishes the relationship between diabetes-specific self-esteem, self-care, and glycemic control among adolescents.</p> <p>Eighty-five adolescents aged 13- 21 diagnosed with type 1 diabetes for at least a year completed the DSSE (diabetes-specific</p>	<p>Mixed Methods study</p>	<p>Diabetes self-esteem was significantly associated with self-care and glycemic control. Diabetes self-esteem may be closely related to Hemoglobin A1C</p>	<p>This study's limitations included the inability to obtain HbA1C levels one-year post-baseline, small sample size, and the role of relationship should continue to be examined.</p>	<p>Level V</p>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

	<p>self-esteem scale) at their standard endocrinology clinic appointments at an urban medical center.</p> <p>53% of women 47% Hispanic/Latino</p>				
<p>Jaser, S. S., and White, L. E. (2011). Coping and resilience in adolescents with type 1 diabetes. <i>Child: care, health, and development</i>, 37(3), 335–342. https://doi.org/10.1111/j.1365-2214.2010.01184.x</p>	<p>Thirty adolescents between the ages of 10-16, and their mothers completed questionnaires on adolescents' coping strategy use, competence, and quality of life at a university diabetes clinic. This study aimed to explore how the use of specific coping strategies impacts resilience (QOL, competence, and metabolic control) in adolescents with type 1 diabetes</p>	<p>A longitudinal study using the Responses to Stress Questionnaire (RSQ) assesses adolescents' coping strategies in response to diabetes-related stressors.</p>	<p>This study was one of the first to examine coping concerning resilience in adolescents with type 1 diabetes. The study's findings indicated that adolescents were most likely to use secondary control coping strategies (acceptance, distraction), followed by primary control strategies (problem-solving and emotional expression) and disengagement strategies (withdrawal or denial) to deal with diabetes-related stress.</p>	<p>The authors identify their small sample size of thirty and the clinic's treatment practices as a limitation. A second limitation was that the authors excluded fathers from the analysis. A third limitation was the inability to assess causal factors due to the study's cross-sectional design.</p>	<p>Level III</p>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

<p>Baucom, K. J., Queen, T. L., Wiebe, D. J., Turner, S. L., Wolfe, K. L., Godbey, E. I., Fortenberry, K. T., Mansfield, J. H., and Berg, C. A. (2015). Depressive symptoms, daily stress, and adherence in late adolescents with type 1 diabetes. <i>Health psychology: official journal of the Division of Health Psychology, American Psychological Association</i>, 34(5), 522–530. https://doi.org/10.1037/hea0000219</p>	<p>One hundred seventy-five late adolescents with depressive symptoms and glycemic control issues followed a 14-day daily diary during which adolescents rated the severity of general and diabetes-specific stressful events and the adherence to their diabetes regimen. This study aimed to examine whether depressive symptoms are associated with greater perceived daily stress and moderate the link between stress severity and poorer daily diabetes adherence. This study was completed at an outpatient pediatric endocrinology clinic in two southwestern US cities.</p> <p>113 females (64.6%)</p>	<p>A longitudinal study of an online 14-day daily diary.</p>	<p>Depressive symptoms are associated with poorer daily adherence and greater stress severity</p>	<p>A more explicit focus on stress management and problem-solving skills training in interventions targeting depressive symptoms in late adolescents may bolster treatment outcomes.</p>	<p>Level III</p>
---	---	--	---	--	------------------

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

<p>Berlin, K. S., Rabideau, E. M., and Hains, A. A. (2012). Empirically derived patterns of perceived stress among youth with type 1 diabetes and relationships to metabolic control. <i>Journal of pediatric psychology</i>, 37(9), 990–998. https://doi.org/10.1093/jpepsy/jss080</p>	<p>The aim was to test a social information processing model in which negative expectations of others' reactions to diabetes care would predict anticipated adherence difficulties and predict the experience of stress and poorer metabolic control. 204 youth with type 1 diabetes (52% female, age 10-18 years, <i>M</i> age =13.91 years completed a diabetes stress questionnaire and their hemoglobin A1C at an outpatient endocrinology clinic.</p>	<p>A cross-sectional study that did not involve a clinical intervention or experimental manipulation.</p>	<p>The measure of stress may not accurately account for the association between perceived stress and metabolic control. Rather than interpersonal or peer pressure, family stress seems to be an essential stress domain linked to suboptimal metabolic control.</p>	<p>This study's limitations include a sample size of predominantly Caucasian racial/ethnic background limiting the generalizability of findings. The Diabetes Stress Questionnaire was used to assess perceived stress related to diabetes in adolescents.</p>	<p>Level V</p>
<p>Hilliard, M. E., Yi-Frazier, J. P., Hessler, D., Butler, A. M., Anderson, B. J., and Jaser, S. (2016). Stress and A1C among people with diabetes across the lifespan. <i>Current Diabetes Reports</i>, 8, 1. https://doi.org/10.1007/s11892-016-0761-3</p>	<p>The review aims to describe acute and chronic stress both specifically related to diabetes and with origins external to diabetes that relate to living with diabetes</p>	<p>Non-experimental study</p>	<p>A review of the literature examined direct and mediated links between stress and glycemic outcomes in people with diabetes across the lifespan suggested that higher stress specifically related to the experience of living with diabetes was associated at least moderately</p>	<p>Using the A1C as the only outcome provides an accurate representation of average blood glucose for all people.</p>	<p>Level III</p>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

			with poorer glycemic control.		
<p>Morone, J. (2019). A systematic review of sociodemographic representation and cultural responsiveness in psychosocial and behavioral interventions with adolescents with type 1 diabetes. <i>Journal of diabetes, 11</i>(7), 582–592. https://doi.org/10.1111/1753-0407.12889</p>	<p>Two hundred fifty-nine total studies published between 2006 and 2016 of adolescents with type 1 diabetes, 13-18 years old, responded to psychosocial and behavioral interventions to improve self-management and glycemic control.</p> <p>28 studies met the inclusion criteria</p>	<p>Systematic review guided by the Culturally Responsive Rubric (CRR) where the majority of interventions delivered in person at a clinic, in the home or camp via telephone support or conducted via the internet</p>	<p>Type 1 diabetes researchers must increase targeted recruitment and sampling methods to include more high-risk pediatric type 1 diabetes groups and increase culturally responsive recruitment. These efforts can reduce type 1 diabetes disparities by making interventions relevant to the highest type 1 diabetes groups' unique needs.</p>	<p>This study's limitations included confining the search to only three databases and including only studies published in English over the last ten years, which may have excluded international work. The study appraisal process was limited to only one reviewer; additional raters would broaden the appraisal process.</p>	<p>Level I</p>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

<p>Chao, A. M., Minges, K. E., Park, C., Dumser, S., Murphy, K. M., Grey, M., and Whittemore, R. (2016). General life and diabetes-related stressors in early adolescents with type 1 diabetes. <i>Journal of pediatric health care: official publication of National Association of Pediatric Nurse Associates and Practitioners</i>, 30(2), 133–142. https://doi.org/10.1016/j.pedhc.2015.06.005</p>	<p>This study aimed to examine general life and diabetes-specific stressors from the perspective of early adolescents (ages 11-14) with type 1 diabetes. The study examined qualitative data from participants involved with the internet coping skills training program and diabetes education program. 205 participants 58% of female 33% minority hemoglobin A1C= 8.2</p>	<p>A multi-site randomized clinical trial</p>	<p>Data extracted via online data of participant responses to interactive questions in a lesson on stress management. 82% of the adolescents reported school as their top stressor, followed by social life 49% and diabetes 48%.</p> <p>The authors used descriptive statistics and qualitative and quantitative content analysis methods to analyze stress management lesson responses.</p>	<p>Limitations included data drawn from a lesson on stress with no opportunity to explore the participants' interpretations of the questions. Participants were also forced to pick three stressors from the list. Possible social desirability bias as other teens were able to see other participants' responses.</p>	<p>Level I</p>
<p>Guo, J., Whittemore, R., and He, G. (2011). The relationship between diabetes self-management and metabolic control in youth with type 1 diabetes: an integrative review. <i>Journal of Advanced Nursing</i>, 67(11), 2294-2310.</p>	<p>The purpose of this integrative review was to describe the relationship between diabetes self-management and metabolic control in youth with type 1 diabetes and explore the factors that affect this relationship.</p>	<p>An integrative review was completed using Whittemore's modified framework for data collection, analysis, and synthesis.</p>	<p>A positive relationship was noted between diabetes self-management and metabolic control in youth with type 1 diabetes was supported in longitudinal studies and in studies where the mean age >13 years old.</p>	<p>The major limitation of this review was that only English and Chinese publications were analyzed.</p>	<p>Level I</p>

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

<p>Starkman, H., Fisher, K., Pilek, N. L., Lopez-Henriquez, G., Lynch, L., and Bilkins-Morgis, B. L. (2019). Listening to adolescents with uncontrolled diabetes, their parents, and the medical team. <i>Families, Systems, and Health, 37</i>(1), 30–37. https://doi.org/10.1037/fsh0000396.supp (Supplemental)</p>	<p>The purpose of this study was to explore the relational dynamics and interactions of adolescents with poorly controlled diabetes, their parents, and health care providers using a qualitative semi-structured interview approach. Nine Adolescents 12-18 years of age at a regional pediatric diabetes center. type 1 Diabetes > 1-year duration Hemoglobin A1C >9.0% three consecutive times.</p> <p>Seven females Two males M age of 14. 6</p>	<p>Qualitative Descriptive Approach</p>	<p>Adolescents, parents, and providers shared similar feelings of frustration, guilt, anxiety, and anger related to uncontrolled diabetes but described different behavioral responses. Adolescents tended to rebel and become more non-adherent to the treatment regimen. Parents became angry, threatened, and often blamed and shamed the teen. Providers became less patient-focused, distancing themselves from the adolescent and their parents.</p>	<p>The study was limited by the cross-sectional nature of its design and selecting interview subjects from a single regional diabetes center. All participants were Caucasian females, which may have concealed gender and cultural differences related to uncontrolled diabetes.</p>	<p>Level III</p>
---	--	---	--	---	------------------

PSYCHOLOGICAL ASPECTS OF ADOLESCENT DIABETES

<p>Marshall, K., Martin, H., and Siarkowski Amer, K. (2018). Exploring perceptions about insulin-dependent diabetes mellitus in adolescent patients and peers. <i>Comprehensive Child and Adolescent Nursing</i>, 41(1), 25–41. https://doi.org/10.1080/24694193.2017.1316788</p>	<p>The purpose of this study was to examine the perceptions of adolescents with IDDM and their peers. The qualitative interviews focused on exploring the knowledge, management, and identified needs of the peers and adolescents with diabetes. 6 participants Two adolescents with diabetes type 1 and 4 adolescent peers</p>	<p>Qualitative Study</p>	<p>Both participants with diabetes type 1 expressed trying to be optimistic about their outlook and described diabetes as challenging. They both stated that they wished they were just "normal teenager that doesn't have to care about what their sugar was or constantly poke for blood."</p>	<p>Since adolescents had to volunteer for this study, researchers could not be selective regarding who was interviewed. Another limitation was all of the participants were in the same age group, school, economic class, and geographical area. Social support may vary among these factors.</p>	<p>Level III</p>
---	--	--------------------------	--	--	------------------