**Management of the Type 1 Diabetes Challenges in adolescents**

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**Introduction**

Teenage years are developmental disaster times, and the existence of a chronic illness like diabetes in teenage years could emasculate the independence, sense of identity, as well as alteration of the patients’ future plans (Castensøe-Seidenfaden et al., 2017). These concerns make it more problematic to handle this illness in the teenage years. As a result, it's essential to establish the perceptual and cognitive hurdles encountered by this vulnerable group with type I diabetes to assist them in getting the necessary skills to deal with their illness commendably. Pender's Health Promotion Model (HPM), commonly employed in public health nursing applications, is frequently employed in the determination of these barriers. The HPM is made up of distinct characteristics and theories and precisely addresses behavioral issues. According to Pender (2011), knowledge of attitudes and behavior toward the illness assists in determining the professed hurdles to and health-promoting benefits.

**Background information**

According to JDRF, the shift from infancy to teenage years is challenging for both children and parents. As boys and girls with type 1 diabetes enter adolescence, they experience several changes, including increases in growth and appetite, proliferating the necessity for insulin. Sex hormones (estrogen and testosterone) similarly interfere with insulin. Insulin takes down blood sugar, but on the other hand, sex hormone elevates it. Stress hormones, like cortisol, increase blood sugar, and adolescents could experience high stress levels. According to experts, adolescents' emotional and social features may equally make the management of T1DM complex. It's harder to handle blood sugar when peer pressure and a variety of activities appear more demanding. Adolescents could be preoccupied and forget boluses/injections, blood-sugar checks, needed supplies, and more.

Children going through puberty need more daily insulin. It's good to talk to your doctor about any sudden and unexpected spike and develop a plan. Also, to the projected challenges of adolescence, adolescents with type 1 diabetes ought to struggle with the effect of unstable hormones on the levels of glucose. Besides, several adolescents might feel screening their blood sugar levels is an inconvenience, a disturbance, or gives them an odd feeling in front of their peers. As a result, they might not do it regularly—or never do it. As a result, up to 70% of teenagers living with diabetes don’t have optimal control of their illness.

Nevertheless, watchful and regular diabetes handling is vital in thwarting severe problems. For adolescents, this implies learning to balance self-care and sports, jobs, school programs, learning to drive, social commitments, etc. Equipped with a proper understanding of why this specific phase of adolescent life can be so impactful on their illness, most teenagers, with the help of parents and trustworthy adults and the right tools. They will get through adolescence and enter adulthood, hale and hearty and all set to deal with their diabetes for life.

**Research Question(S)**

Therefore this paper aims at look assisting parents to pinpoint the hurdles adolescents are facing in T1DM management.

1. Identifying the hurdles the teenagers with T1DM face in their everyday lives as they continue to manage the illness.
2. Identifying ways parents can assist adolescents in learning to handle their diabetes independently.
3. The steps to take on letting adolescents handle things independently and the importance of employing mobile health into self-management of T1DM without affecting their desired lifestyle, like the desire to participate in sports.

**Research Methodology**

Focus groups will be involved in exploring hurdles to adherence in adolescents living with type 1 diabetes. Focus groups will be selected to facilitate robust conversations between respondents and to enable more comprehensive arguments than may be possible with personal interviews. Besides, this study aims to understand the hurdles adolescents face and what parents or guardians can do to assist them in living everyday and healthy life. The focus groups will be used to sanction a discussion among peers that may not be possible in other research backgrounds.

A qualitative, phenomenological research method will be employed in this study, which will be conducted on 20 adolescents with T1DM from SUNY Downstate along with their parents between 17th May to 4th June this year. Teenagers coming for regular screening for type I diabetes will be included in the study employing a “purposeful sampling approach." The inclusion criterion will be as follows: (a) been living with diabetes mellitus from age 10, (b) aged between 12 and 19 years, and (c) offering to take part in the research (teenager and their parents/ guardians). The elimination criteria will be as follows: (a) bee living with diabetes type II, (b) incapable of completing the interviews, or (c) having psychological challenges.

### Data Collection

Interviews will be carried out in a quiet and special interviewing room and audio recorded. Data will be gathered via face-to-face interviews using open-ended questions (Pender et al., 2015). In the interviews, analytical queries will be asked to get descriptions and elucidations (Hyett, 2014). Interview durations will range between 15 to 35 minutes (mean = 25 min). A semi-structured interview controller will be set based on the qualitative research approaches defined by the HPM. The 5 interview queries will be:

1. Can you please describe your diabetes life?
2. Which activities do you undertake to handle your illness (for example, individual monitoring, exercise, insulin shots, diabetes education, and dosing,
3. How does living with diabetes impact your life?
4. Do you participate in any sports activities at home or school?
5. What challenges do you encounter when managing your diabetes when you participate in extracurricular activities?
6. Which conditions are impacting your ability to handle your diabetes (only those participating in sporting activities)?
7. Are you aware of/using/ willing to use any mHealth apps/interventions to manage diabetes?

**Data Analysis**

The data will be analyzed employing the “content analysis method,” which is mainly proposed for qualitative studies. The data will be analyzed by employing an inductive methodology (Mohajan, 2018). 1st, audio recordings will be transcribed, then examined line by line, and code the data. The coded data will be apportioned to pertinent subthemes. Lastly, the core theme will be formed by amalgamating the subthemes, then identifying and comparing the respondents' responses to the research queries. At the end of each respondent's responses, the respondent's interview age, gender and order will be noted down using acronyms.

**Expected Results**

The expected outcome of this study will be a benchmark of what teenagers living with T1DM are likely to encounter in self-management of diabetes, thus giving a proper understanding of what is needed to correct this. Since the study sample group of teenagers living with T1DM from one region only, there’re chances that the perspectives prompted in this research will not amply echo the full spectrum of views of adolescents with T1DM. Finally, regardless of employing inductive queries in the interviews, a number of respondents are likely to provide superficial answers, which very common among adolescents. This may bring about the short average interview durations.

**References**

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