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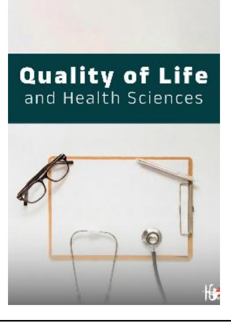

Psychological Adaptation, Illness Identity, and Quality of Life Among Young Adults Living With Type 1 Diabetes: An Interpretative Phenomenological Analysis

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ABSTRACT

Objective: This study aimed to explore the lived experiences of psychological adaptation, illness identity, and quality of life among young adults living with type 1 diabetes in Canada.

Methods and Materials: This qualitative study was conducted using Interpretative Phenomenological Analysis. Participants included 16 young adults aged 18 to 30 years living with type 1 diabetes in Canada, selected through purposive sampling. Data were collected using a demographic and clinical information form and in-depth semi-structured interviews. Interviews explored participants' experiences of diabetes management, emotional adjustment, identity formation, disclosure, social participation, autonomy, relationships, and perceived quality of life. Interviews were audio-recorded, transcribed verbatim, anonymized, and analyzed through repeated reading, exploratory noting, development of emergent themes, idiographic case analysis, and cross-case thematic integration. Trustworthiness was supported through reflexive memo-writing, research team review, audit trail documentation, and careful grounding of themes in participants' narratives.

Findings: The interpretative analysis generated five superordinate themes: psychological adaptation as an ongoing negotiation, illness identity as a contested part of the self, quality of life as conditional freedom, independence and dependence in young adulthood, and future orientation under chronic uncertainty. Findings indicated that adaptation was not experienced as a completed state, but as a continuous process of emotional regulation, practical self-management, and tolerance of uncertainty. Illness identity was shaped by the tension between rejecting diabetes as a total definition of the self and integrating it into personal biography. Quality of life was interpreted as the capacity to participate meaningfully in life while maintaining safety, autonomy, and relational understanding.

Conclusion: Young adults with type 1 diabetes experience adaptation, identity, and quality of life as dynamically interconnected processes shaped by developmental transitions, social contexts, healthcare experiences, and future concerns. Diabetes care for this population should therefore address not only biomedical management, but also emotional burden, identity negotiation, autonomy, disclosure, and meaningful participation in everyday life.

Keywords: *Type 1 Diabetes; Young Adults; Psychological Adaptation; Illness Identity; Quality of Life; Interpretative Phenomenological Analysis; Qualitative Research*

1. Introduction

Type 1 diabetes is a lifelong autoimmune condition that requires continuous self-management, intensive decision-making, and sustained psychological adaptation across the life course. Although biomedical treatment has advanced substantially through insulin analogues, glucose monitoring systems, insulin pumps, structured education, and digital health interventions, the daily experience of type 1 diabetes remains deeply personal, emotionally demanding, and socially embedded. For young adults, the condition is not only a matter of glycemic regulation but also a persistent influence on identity, autonomy, relationships, education, employment, and future planning. Recent work has increasingly emphasized that type 1 diabetes must be understood through a life-stage perspective, because the meanings, responsibilities, and vulnerabilities associated with the condition change as individuals move from childhood and adolescence into adulthood (Vitale et al., 2025). This developmental framing is especially important because young adulthood is characterized by transitions that require increasing independence at the same time that diabetes demands routine, vigilance, and support. Consequently, understanding how young adults psychologically adapt to type 1 diabetes requires attention not only to medical outcomes, but also to illness meaning, self-concept, relational experience, and perceived quality of life.

Young adulthood is a particularly complex period for people living with type 1 diabetes because it often involves simultaneous transitions in healthcare, education, work, family roles, romantic relationships, financial responsibility, and independent living. These transitions may disrupt established patterns of diabetes management and alter the availability of parental, clinical, and peer support. Studies focusing on transition and transfer to adult care show that young people often experience this period as a shift in responsibility, continuity, and relational security, where the movement from pediatric to adult services may be accompanied by uncertainty, loss of familiarity, and the need to renegotiate care relationships (Laursen et al., 2023; Olsson et al., 2023). Parents also experience this transition as emotionally demanding, particularly as they attempt to support autonomy while managing concerns about safety, adherence, and long-term health (Ness & Saylor, 2025; Olsson et al., 2026). These findings suggest that transition is not simply an administrative process between services, but a developmental and psychological reorganization involving young adults, families, and healthcare systems.

The burden of type 1 diabetes in younger populations extends beyond the individual and includes families and informal caregivers, who often share the emotional, practical, and financial consequences of the condition. Evidence on the humanistic burden of pediatric type 1 diabetes indicates that children, adolescents, and caregivers may experience reduced quality of life, emotional strain, fear of hypoglycemia, treatment burden, and disruptions to everyday family life (Allen et al., 2024). Although young adulthood involves a movement toward independence, this earlier family-based burden does not simply disappear; rather, it is transformed as young adults assume greater responsibility for self-management while family members continue to provide emotional or practical support in more negotiated ways. This is consistent with research showing that emerging adults with type 1 diabetes often face distinct health and psychosocial challenges as they attempt to manage diabetes within changing social and developmental contexts (Bayrakdar et al., 2024). Therefore, young adults' experiences should be examined as part of a broader developmental pathway shaped by earlier family involvement, current autonomy needs, and future expectations.

Psychological adaptation to type 1 diabetes involves more than learning technical self-management skills. It includes emotional regulation, acceptance of uncertainty, coping with bodily unpredictability, managing diabetes-related distress, and developing confidence in one's ability to respond to daily fluctuations. Research among young adults with type 1 diabetes has highlighted associations between psychological resources, diabetes distress, self-efficacy, stigma, and quality of life, indicating that adaptation depends on both internal capacities and social context (Cyranka et al., 2023; Soufi et al., 2023). Diabetes distress and depressive symptoms are also important concerns among emerging adults, with evidence suggesting that screening outcomes may vary according to age of onset and developmental context (Stahl-Pehe et al., 2023). Furthermore, environmental mastery has been associated with diabetes distress, suggesting that young adults' sense of competence in managing life circumstances may be closely linked to emotional burden in diabetes (Nagel et al., 2025). These findings collectively point to the need for qualitative exploration of how young adults interpret adaptation in everyday life, especially when biomedical control and psychological well-being do not always align.

Quality of life in type 1 diabetes is increasingly understood as a multidimensional construct that cannot be reduced to glycemic outcomes alone. Person-reported outcomes in diabetes trials have included diverse constructs such as emotional well-being, treatment satisfaction, distress, self-management, and health-related quality of life, reflecting growing recognition that the patient experience is central to evaluating diabetes care (Wit et al., 2024). In young adults, quality of life may be shaped by personality, coping, developmental conditions, metabolic control, and psychosocial context (Wagner et al., 2022). The transition to adulthood further complicates this relationship because educational participation, employment opportunities, financial stability, and social belonging become increasingly important markers of well-being. A scoping review on adulthood with juvenile-onset type 1 diabetes emphasized that education, employment, and quality of life are interconnected domains that shape the long-term experience of living with the condition (Maurel et al., 2025). As a result, quality of life among young adults with type 1 diabetes should be examined not only as a health outcome, but also as a lived experience of freedom, limitation, competence, uncertainty, and participation.

Illness identity provides a valuable conceptual lens for understanding how young adults incorporate type 1 diabetes into their self-understanding. Illness identity refers to the extent to which a chronic condition becomes integrated into, rejected from, or dominant within one's identity. Longitudinal research in type 1 diabetes has shown that illness identity is related to adjustment, suggesting that how individuals position diabetes in relation to the self has implications for psychological and behavioral adaptation (Rassart et al., 2021). Although illness identity has been studied in other chronic conditions, developmental research indicates that identity processes and well-being may influence one another over time, highlighting the dynamic nature of illness-related self-construction (Laere et al., 2024). For young adults, this issue is especially salient because they are simultaneously forming adult identities and managing a condition that can be visible, demanding, and socially misunderstood. Diabetes may be experienced as a source of maturity and self-knowledge, but it may also be perceived as a threat to normality, spontaneity, body confidence, and autonomy.

Body image and self-concept are particularly relevant to illness identity in adolescents and young adults with type 1 diabetes. Diabetes management may involve visible devices, injections, scars, weight concerns, hypoglycemia episodes, alarms, and social explanations that affect how individuals experience their bodies and present themselves to others. A systematic review on body image and self-concept found that these domains can influence the management of type 1 diabetes in adolescents and young adults, underscoring the connection between self-perception and self-care behaviors (Garrido-Bueno et al., 2025). Qualitative evidence further shows that adolescents with type 1 diabetes and their parents often describe a desire for the young person to be "like everybody else," revealing the importance of social contexts and illness representations in shaping diabetes experience (Hussein et al., 2023). Similarly, hermeneutic research on young people living with type 1 diabetes has shown that the condition is experienced through everyday meanings, social expectations, and efforts to live an ordinary life despite constant management demands (Holmström & Söderberg, 2021). These findings suggest that identity and quality of life are inseparable from the social visibility of diabetes.

The social environment plays a central role in young adults' adaptation to type 1 diabetes. Peer support, friend support, family relationships, university environments, workplaces, and healthcare encounters may either facilitate or hinder diabetes management and psychological well-being. Research on peer support has emphasized that peers can influence adjustment, belonging, and diabetes-related coping, although the quality and type of support matter considerably (Helgeson et al., 2022). In emerging adults, satisfaction with diabetes-specific friend support has been identified as an important factor, suggesting that support is beneficial when it is experienced as responsive, respectful, and relevant to the person's needs (Raymaekers et al., 2021). Peer support may also benefit those who provide it, as serving as a peer supporter can influence adolescents and young adults with chronic conditions by reinforcing meaning, competence, and social connection (Manning et al., 2025). However, technology-mediated peer support interventions in pediatric type 1 diabetes have shown that digital approaches must be carefully designed to address engagement, developmental relevance, and psychosocial needs (Titoria et al., 2023).

Educational and occupational settings are also important contexts in which young adults must negotiate diabetes management. University students with diabetes may face challenges related to disclosure, accommodations, irregular schedules, alcohol use, food access, stress, peer expectations, and the need to balance self-management with academic life (Hagger et al., 2022). Student perspectives further indicate that environmental characteristics of college

settings can shape diabetes management, particularly through routines, social norms, physical spaces, and communication demands (Malova & Harrison, 2023). In the workplace, young adults with type 1 diabetes may encounter concerns about disclosure, stigma, scheduling, hypoglycemia safety, productivity expectations, and access to supplies or food, making employment a significant social-ecological context for illness management (Saylor et al., 2021). These settings are critical because they represent the real-world environments in which young adults attempt to live independently while managing a condition that often requires flexibility, privacy, and understanding from others.

Healthcare systems and interventions increasingly aim to support young adults during transition, but much of the existing intervention literature remains focused on improving self-management behaviors and service engagement. Self-management interventions for young adults with chronic conditions, including type 1 diabetes, show the importance of age-appropriate strategies that address autonomy, responsibility, and developmental needs (Almabadi et al., 2025). Transition preparation programs and randomized trial protocols reflect growing recognition that adolescents and young adults require structured support when moving toward adult-oriented care (Caccavale et al., 2025). Digital interventions are also expanding, including user-centered applications and eHealth tools designed to improve diabetes management during adolescence and early adulthood (Carcone et al., 2025; Chiang et al., 2025). Systematic review evidence suggests that eHealth interventions may have potential for adolescents with diabetes, although their effectiveness depends on design, engagement, and fit with users' lives (Spaggiari et al., 2025). Nevertheless, these interventions may not fully capture the subjective meanings young adults attach to adaptation, identity, and quality of life.

Recent qualitative and ethnographic research has begun to address this limitation by examining how diabetes care is incorporated into young people's everyday lives. A photovoice study of young adults living with diabetes emphasized the effort involved in making diabetes care fit into daily life, showing that management is not merely a set of prescribed behaviors but a practical and personal process embedded in routines, relationships, and environments (Gastel et al., 2026). Ethnographic work has similarly shown that clinical encounters can transform guidelines into personally meaningful "lifelines," indicating that diabetes management is shaped by narrative, relational, and interpretative processes during interactions between young adults and healthcare providers (Schønning et al., 2025). These studies support the value of interpretative qualitative approaches that move beyond compliance-oriented models and examine how young adults make sense of diabetes as part of their lives. Such approaches are especially important for understanding how young adults balance medical advice with autonomy, social participation, emotional fatigue, and personal identity.

Psychological interventions also point to the importance of acceptance, flexibility, and values-based living in type 1 diabetes. Acceptance and Commitment Therapy has been explored as a feasible approach for adolescents with type 1 diabetes, reflecting interest in interventions that address psychological flexibility rather than focusing only on symptom reduction or glycemic behavior (Panton et al., 2025). This is relevant because young adults often face circumstances in which complete control is impossible, making flexibility, self-compassion, and value-based action central to adaptation. At the same time, epidemiological and population-based studies remind researchers that diabetes-related burden is unevenly distributed and influenced by broader risk contexts, healthcare access, and social conditions (Barakat et al., 2021). Therefore, qualitative research is needed to illuminate how individual adaptation is shaped by developmental, interpersonal, institutional, and cultural environments.

Despite increasing attention to transition, self-management, technology, peer support, and quality of life, there remains a need for in-depth qualitative research that integrates psychological adaptation, illness identity, and quality of life within a single interpretative framework. Existing studies have provided important evidence on healthcare transition, family burden, distress, social support, university and workplace experiences, eHealth interventions, and identity-related adjustment, but the lived relationship among adaptation, identity, and quality of life in young adulthood requires further exploration. Interpretative Phenomenological Analysis is particularly suitable for this purpose because it enables close examination of how participants make sense of personally significant experiences and how meaning is constructed within specific life contexts. For young adults living with type 1 diabetes, this approach can reveal how diabetes is experienced not only as a medical condition, but also as a continuing psychological and existential presence that shapes selfhood, relationships, autonomy, and future orientation.

Therefore, the aim of this study was to explore the lived experiences of psychological adaptation, illness identity, and

quality of life among young adults living with type 1 diabetes in Canada through an Interpretative Phenomenological Analysis.

2. Methods and Materials

2.1. *Study Design and Participants*

This study was conducted using a qualitative research design based on Interpretative Phenomenological Analysis to explore how young adults living with type 1 diabetes experience psychological adaptation, construct illness identity, and make sense of quality of life in the context of daily disease management. Interpretative Phenomenological Analysis was selected because the aim of the study was not to measure the prevalence of psychological or behavioral outcomes, but rather to obtain a detailed and idiographic understanding of participants' lived experiences, personal meanings, emotional responses, and identity-related interpretations. The study focused on young adulthood as a developmental period in which individuals are often negotiating autonomy, education, employment, intimate relationships, peer belonging, and long-term self-management responsibilities. Participants were recruited from Canada through purposive sampling, using announcements distributed through diabetes clinics, university health centers, community diabetes organizations, and online support networks for young adults with type 1 diabetes. The final sample consisted of 16 young adults living in Canada who had been diagnosed with type 1 diabetes. Participants were eligible for inclusion if they were between 18 and 30 years of age, had received a medical diagnosis of type 1 diabetes at least one year before participation, were able to communicate in English, and were willing to discuss their personal experiences of diabetes management, psychological adjustment, identity formation, and quality of life. Individuals with severe acute medical complications at the time of recruitment or with cognitive or communication difficulties that prevented participation in an in-depth interview were not included. Recruitment continued until the interviews provided sufficient depth, richness, and conceptual recurrence for interpretative analysis. All participants were informed about the purpose of the study, the voluntary nature of participation, confidentiality procedures, and their right to withdraw from the study at any stage without any negative consequences. Written informed consent was obtained from all participants before data collection.

2.2. *Measures*

Data were collected using a demographic and clinical information form and an in-depth semi-structured interview guide developed in accordance with the aims of the study and the principles of phenomenological inquiry. The demographic and clinical information form was used to collect contextual information, including age, gender, province of residence, educational status, employment status, relationship status, age at diagnosis, duration of living with type 1 diabetes, current diabetes management method, use of insulin pump or multiple daily injections, use of continuous glucose monitoring, history of diabetes-related hospitalization, and perceived level of family and peer support. This information was not used for statistical comparison, but rather to provide a contextual understanding of each participant's life situation and diabetes-related background. The semi-structured interview guide served as the main data collection tool and was designed to elicit detailed narratives about the lived experience of type 1 diabetes in young adulthood. The interview questions explored participants' initial reactions to diagnosis, emotional and cognitive adaptation over time, experiences of self-management, perceived changes in identity, feelings of difference or normality, disclosure of diabetes to others, interactions with family, peers, romantic partners, educational or occupational environments, and the perceived impact of diabetes on quality of life. Questions also addressed how participants interpreted the role of diabetes in their self-concept, future planning, independence, body awareness, social participation, and psychological well-being. The guide included open-ended questions and flexible probes to allow participants to describe experiences in their own words and to enable the interviewer to follow personally meaningful topics as they emerged. Examples of guiding questions included how participants understood the place of diabetes in their lives, how they managed emotional challenges associated with the condition, how diabetes affected their relationships and daily routines, and what quality of life meant to them while living with type 1 diabetes. Interviews were conducted individually in a private and secure format, either face-to-face or through encrypted online video calls, depending on participants' location and preference. Each interview lasted approximately 50 to 75 minutes and was audio-recorded with permission. Field notes were written immediately after each interview to document contextual observations, emotional tone, nonverbal expressions when available, and preliminary

analytic reflections. All recordings were transcribed verbatim, and identifying information was removed during transcription to protect confidentiality.

2.3. Data Analysis

Data were analyzed according to the procedures of Interpretative Phenomenological Analysis. Analysis began with repeated reading of each transcript to achieve close familiarity with the participant's account and to preserve the idiographic orientation of the study. During the first stage, exploratory notes were written for each transcript, including descriptive comments about the content of the participant's experience, linguistic comments about significant expressions and metaphors, and conceptual comments about deeper psychological meanings related to adaptation, identity, and quality of life. In the next stage, emergent themes were developed by transforming detailed notes into concise interpretative statements that captured psychologically meaningful aspects of each participant's experience. Each case was analyzed separately before cross-case analysis was conducted, allowing the uniqueness of each participant's narrative to be preserved. After the initial analysis of individual cases, patterns of convergence and divergence were examined across participants, and related emergent themes were clustered into superordinate themes and subordinate themes. Particular attention was paid to the ways in which participants made sense of diabetes as part of the self, negotiated independence and dependence, experienced emotional burden, managed visibility and disclosure, and redefined quality of life in relation to control, uncertainty, social belonging, and future expectations. Reflexivity was maintained throughout the analytic process through memo-writing, discussion among the research team, and continuous attention to the researchers' assumptions about chronic illness, young adulthood, and psychological adjustment. To enhance trustworthiness, an audit trail was maintained that included interview guides, field notes, coding notes, theme development records, and analytic memos. Selected transcripts and theme structures were reviewed by members of the research team to assess interpretative coherence and ensure that the themes remained grounded in participants' accounts. Credibility was further supported through the use of rich verbatim extracts during analysis, sustained engagement with the data, and careful comparison between individual narratives and the final thematic structure. Data analysis was conducted manually with the support of qualitative data management software to organize transcripts, codes, notes, and emerging themes. The final themes were developed through an iterative interpretative process in which the researchers moved repeatedly between individual statements, whole transcripts, and the broader thematic framework in order to produce a nuanced account of psychological adaptation, illness identity, and quality of life among young adults living with type 1 diabetes in Canada.

3. Findings and Results

The study included 16 young adults living with type 1 diabetes in Canada. Participants were between 18 and 30 years of age, with a mean age of 24.6 years. Ten participants identified as women, five as men, and one as non-binary. Participants were recruited from different Canadian provinces, including Ontario, British Columbia, Alberta, Quebec, and Nova Scotia, which provided variation in geographical and service-related experiences while preserving the idiographic depth required for Interpretative Phenomenological Analysis. Seven participants were university or college students, six were employed full-time, two were employed part-time, and one was not employed at the time of the interview. The duration of living with type 1 diabetes ranged from 2 to 21 years, with a mean duration of 10.8 years. Six participants had been diagnosed during childhood, seven during adolescence, and three during early adulthood. Nine participants used insulin pumps, seven used multiple daily injections, and 12 used continuous glucose monitoring as part of their daily diabetes management. Five participants reported at least one previous diabetes-related hospitalization, most commonly related to diabetic ketoacidosis or severe hypoglycemia. Participants described diverse family, peer, educational, occupational, and healthcare experiences, but all accounts reflected the central presence of diabetes in everyday decision-making, emotional regulation, bodily awareness, and future planning.

Table 1

Final thematic structure derived from the interpretative phenomenological analysis

Superordinate theme	Subordinate themes	Core interpretative meaning	Strongly reflected in participants' accounts
Psychological adaptation as an ongoing negotiation rather than a completed adjustment	Moving from shock to practical acceptance; emotional fatigue and self-management burden; learning to tolerate uncertainty; developing self-efficacy through experience	Adaptation was experienced as a continuous process in which participants gradually learned to live with diabetes, but did not describe adjustment as complete, stable, or free from emotional struggle.	16 of 16
Illness identity as a contested part of the self	Rejecting the label of being defined by diabetes; integrating diabetes into personal identity; managing visibility, disclosure, and difference; comparing the self with non-diabetic peers	Participants attempted to protect a valued sense of self while also recognizing that diabetes had become inseparable from their body, routines, relationships, and life story.	15 of 16
Quality of life as conditional freedom	Balancing control and spontaneity; social participation and hidden planning; emotional safety in relationships; redefining normality and independence	Quality of life was not understood as the absence of diabetes-related limitations, but as the ability to participate meaningfully in life while feeling safe, understood, and capable of managing risk.	16 of 16
Independence and dependence in young adulthood	Wanting autonomy from parents and healthcare providers; relying on technology, family, and partners; fear of being a burden; negotiating support without losing control	Young adulthood intensified the tension between independence and dependence, as participants wanted to be self-reliant while also recognizing the practical and emotional need for support.	14 of 16
Future orientation under chronic uncertainty	Concerns about complications; career and financial planning; intimate relationships and family planning; hope through mastery and adaptation	Participants viewed the future through both possibility and vulnerability, often shifting between confidence in their competence and anxiety about long-term consequences.	13 of 16

Table 1 presents the final thematic structure that emerged from the interpretative phenomenological analysis. The findings show that young adults did not experience psychological adaptation, illness identity, and quality of life as separate or linear domains. Instead, these domains were interconnected and mutually shaping. Psychological adaptation influenced how participants understood themselves as people living with diabetes, while illness identity affected how they evaluated their quality of life, relationships, independence, and future possibilities. The most consistent theme across all interviews was that adaptation was ongoing rather than completed. Even participants who had lived with type 1 diabetes for many years described moments of frustration, exhaustion, fear, or resistance, especially when blood glucose levels felt unpredictable despite careful management. Quality of life was also reflected in all accounts, but participants rarely defined it in terms of complete freedom from diabetes. Rather, they described quality of life as the possibility of living with fewer interruptions, less fear, more confidence, and more understanding from others. The themes of independence and future orientation were especially salient among participants who were transitioning into university, employment, romantic relationships, or independent living, indicating that young adulthood created a developmental context in which diabetes management became closely tied to autonomy, self-definition, and long-term life planning.

Table 2

Psychological adaptation among young adults living with type 1 diabetes

Subordinate theme	Interpretative description	Representative participant expression
Moving from shock to practical acceptance	Participants who were diagnosed during adolescence or early adulthood described diagnosis as an interruption in the expected continuity of life. Over time, acceptance developed less as emotional agreement with the illness and more as a practical recognition that diabetes had to be managed daily.	"At first I kept thinking, this cannot be my life now. Later it became more like, I do not have to like it, but I have to know what to do with it."
Emotional fatigue and self-management burden	Participants described diabetes management as mentally consuming because it required constant calculation, anticipation, and correction. Emotional fatigue was especially strong when effort did not lead to predictable glycemic outcomes.	"The hardest part is that you can do everything right and still get a number that makes you feel like you failed."
Learning to tolerate uncertainty	Adaptation involved learning to live with unpredictable glucose fluctuations, changing insulin needs, exercise effects, food variability, illness, stress, and hormonal changes. Participants gradually developed greater tolerance for uncertainty, although this tolerance remained fragile.	"I had to accept that control does not mean perfect numbers. It means responding without falling apart every time something changes."
Developing self-efficacy through experience	Confidence emerged through repeated problem-solving rather than through information alone. Participants described becoming more capable as they accumulated experiential knowledge about their bodies and learned to interpret patterns over time.	"I know my body better now. Not perfectly, but I can usually tell what is happening before the device confirms it."
Reframing diabetes from interruption to responsibility	Some participants described a shift from viewing diabetes as an unfair disruption to viewing it as a demanding but manageable responsibility. This reframing reduced helplessness and supported a more active role in self-care.	"It is still annoying, but it is mine to manage. Thinking that way makes me feel less powerless."

Table 2 demonstrates that psychological adaptation was experienced as a gradual, unstable, and effortful process. Participants did not describe adaptation as a single turning point or as a state of complete acceptance. Instead, adaptation involved repeated emotional and practical negotiations with the demands of diabetes. Many participants reported that early experiences were marked by disbelief, anger, embarrassment, or fear, particularly when diagnosis occurred during adolescence or early adulthood. However, over time, participants developed practical acceptance by learning how to respond to blood glucose changes, manage insulin, interpret bodily cues, and prepare for daily activities. A central feature of adaptation was the recognition that diabetes management could be highly demanding even when participants were knowledgeable and motivated. Several participants described distress when their efforts did not produce expected outcomes, suggesting that psychological burden was intensified by the gap between responsibility and control. The development of self-efficacy was therefore not based on perfect management, but on participants' increasing ability to respond flexibly, recover from difficult episodes, and avoid interpreting every fluctuation as personal failure. This theme shows that adaptation among young adults with type 1 diabetes is best understood as a dynamic process of learning, recalibration, emotional endurance, and embodied expertise.

Table 3

Illness identity and the meaning of living with type 1 diabetes

Subordinate theme	Interpretative description	Representative participant expression
Rejecting total definition by diabetes	Participants resisted being reduced to the illness and often emphasized that diabetes was only one part of who they were. This resistance functioned as a way to protect self-continuity and personal agency.	"I have diabetes, but I am not diabetes. I need people to understand that difference."
Integrating diabetes into the self	Although participants rejected being defined by diabetes, many also acknowledged that it had shaped their routines, maturity, values, and sense of responsibility. Integration involved accepting diabetes as part of the life story without allowing it to dominate identity.	"It is part of me because it changed how I grew up, but it is not the whole story."
Visibility, disclosure, and social interpretation	Devices, injections, alarms, and dietary decisions made diabetes visible in social settings. Participants carefully managed when and how to disclose their condition to avoid pity, misunderstanding, overprotection, or judgment.	"Sometimes I explain it before people ask, because I would rather control the story than have them guess."
Feeling different while wanting normality	Participants described feeling different from peers because of planning, restrictions, alarms, medical appointments, and fear of emergencies. At the same time, they strongly desired ordinary participation in social, academic, and occupational life.	"I want to be normal, but normal for me includes checking my blood sugar before doing things other people just do."
Identity maturity through chronic responsibility	Several participants interpreted diabetes as having accelerated maturity. They described becoming more disciplined, health-aware, organized, and empathetic because of the long-term responsibility of managing the condition.	"I grew up faster in some ways. I had to think about consequences when my friends did not."

Table 3 shows that illness identity was marked by tension between separation and integration. Participants consistently resisted the idea that diabetes should define them, yet they also recognized that living with type 1 diabetes had shaped their habits, personality, relationships, and developmental experiences. This created a complex identity position in which participants tried to maintain continuity with their pre-diabetes or non-illness self while also incorporating diabetes into their understanding of who they had become. Disclosure was one of the most important identity-related challenges. Participants described social situations in which they had to decide whether to explain devices, alarms, injections, food choices, or symptoms. Disclosure was not simply an informational act; it was a form of identity management. Some participants disclosed early to reduce misunderstanding and increase safety, whereas others avoided disclosure because they feared being treated as fragile, different, or dependent. The findings also indicate that participants' desire for normality did not mean denial of illness. Instead, normality was redefined as the ability to participate in ordinary life while carrying out diabetes-related tasks in the background. In this sense, illness identity was neither full rejection nor full acceptance, but an active and ongoing process of negotiating how visible, central, and meaningful diabetes should be in the self.

Table 4

Quality of life as experienced by young adults with type 1 diabetes

Subordinate theme	Interpretative description	Representative participant expression
Conditional freedom in everyday life	Participants described quality of life as the ability to do what they wanted while having enough preparation, supplies, technology, and confidence to remain safe. Freedom was possible, but it was rarely effortless.	"I can travel, go out, work, study, do most things, but there is always a condition attached. I have to plan first."
Social participation and hidden labor	Participants often participated in social life while privately managing glucose levels, insulin, food timing, alarms, and symptoms. Much of the work required to appear "normal" remained invisible to others.	"People see me at dinner, but they do not see the math I did before ordering or the worry afterward."
Emotional safety in relationships	Quality of life improved when family members, friends, partners, or colleagues understood diabetes without becoming intrusive. Participants valued support that respected autonomy and avoided blame.	"The best support is when someone knows what to do but does not make me feel watched all the time."
Technology as both relief and reminder	Continuous glucose monitoring and insulin pumps increased confidence and safety for many participants, but alarms, device visibility, sensor failures, and constant data also intensified awareness of being ill.	"My CGM gives me freedom, but it also means diabetes is always on the screen, always asking for attention."
Redefining quality of life through control, meaning, and flexibility	Participants did not define quality of life only through physical health. They emphasized emotional balance, independence, meaningful relationships, reduced shame, flexible routines, and confidence in managing unexpected situations.	"Quality of life is not having perfect numbers. It is being able to live and not feel scared all the time."

Table 4 indicates that quality of life was experienced as a layered and conditional phenomenon. Participants did not describe quality of life simply as high treatment adherence, good glycemic control, or absence of complications. Instead, they emphasized the subjective experience of being able to live with a sense of freedom, safety, dignity, and emotional stability despite the demands of diabetes. The phrase "conditional freedom" captures the central meaning of quality of life in participants' accounts. Young adults felt that they could study, work, travel, exercise, socialize, and form relationships, but these activities required additional planning and risk assessment that peers without diabetes often did not see. Social participation therefore involved hidden labor, as participants tried to appear spontaneous while privately calculating insulin doses, carbohydrate intake, activity effects, and possible hypoglycemia. Technology played a dual role in this process. For many participants, devices increased safety and reduced uncertainty, but they also acted as constant reminders of illness and sometimes made diabetes more visible in social settings. Emotional safety in relationships was especially important. Participants valued people who understood the seriousness of diabetes without turning support into surveillance. The findings suggest that quality of life among young adults with type 1 diabetes depends not only on medical management, but also on the extent to which individuals can preserve autonomy, reduce fear, participate socially, and feel understood without being defined by illness.

Figure 1

Interpretative model of psychological adaptation, illness identity, and quality of life among young adults living with type 1 diabetes

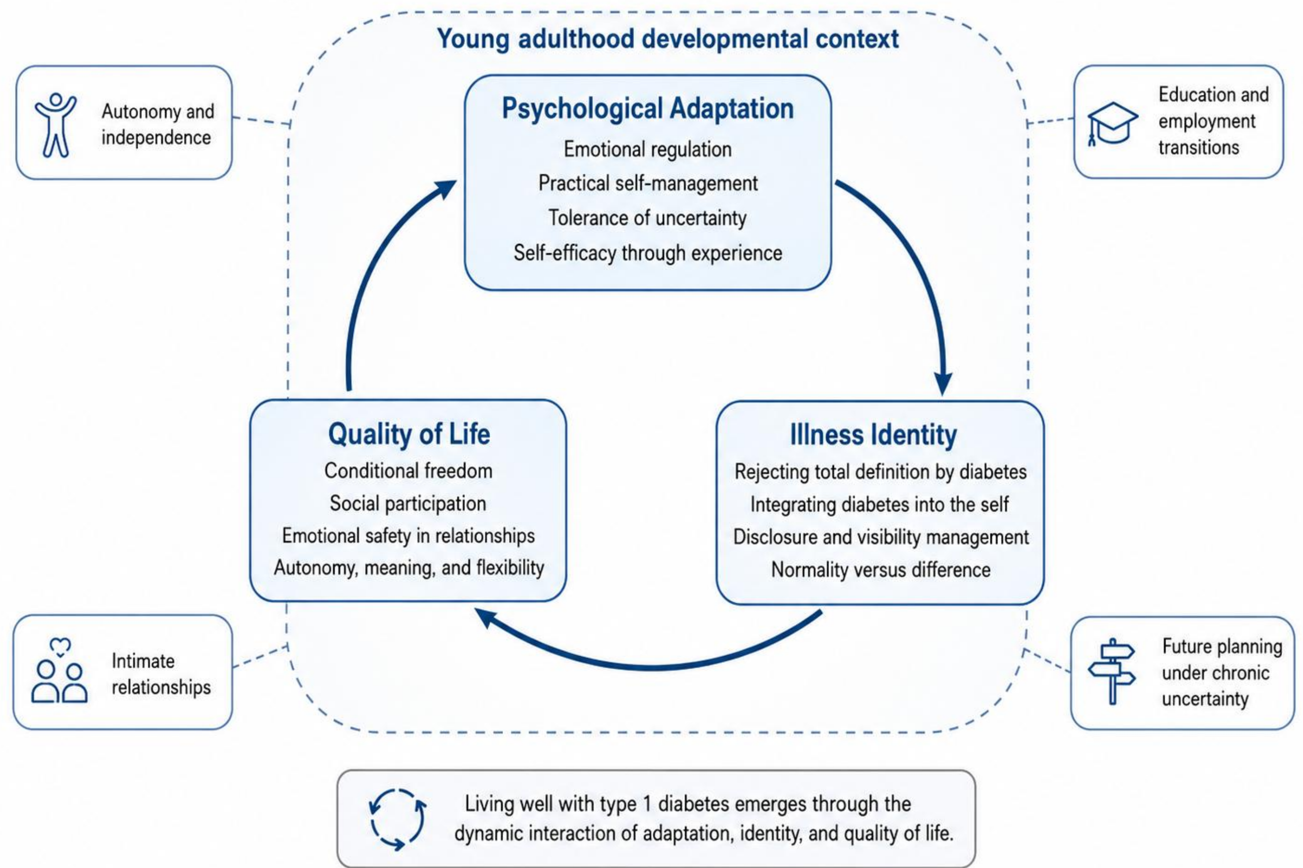

Figure 1 represents the interpretative relationship among the main findings of the study. The model conceptualizes psychological adaptation as the central process through which young adults gradually learn to manage the emotional, cognitive, and practical demands of type 1 diabetes. This adaptation influences illness identity by shaping whether diabetes is experienced as an external burden, a central defining feature, or an integrated but limited part of the self. Illness identity, in turn, affects quality of life because the meaning participants assign to diabetes influences how they experience social participation, independence, relationships, technology, and future planning. The model also shows that quality of life feeds back into adaptation: when participants feel supported, competent, and able to participate in valued life activities, they report greater confidence and emotional stability; when they feel judged, restricted, overwhelmed, or unsafe, adaptation becomes more difficult. Young adulthood functions as the developmental context surrounding the entire process. During this period, participants are expected to become independent, make educational and occupational decisions, form intimate relationships, and plan for the future, while also carrying the continuous responsibilities of diabetes management. Therefore, the findings suggest that the lived experience of type 1 diabetes in young adulthood is best understood as a circular and dynamic process in which adaptation, identity, and quality of life continuously influence one another.

Overall, the findings reveal that young adults living with type 1 diabetes in Canada experience the illness not merely as a biomedical condition, but as a persistent psychological and identity-related presence in everyday life. Participants' accounts showed that diabetes required continuous attention, but its meaning changed across time and context. Psychological adaptation involved learning to manage uncertainty without interpreting every difficulty as failure. Illness identity involved protecting the self from being reduced to diabetes while also acknowledging that diabetes had shaped personal development. Quality of life involved the ability to live meaningfully and participate fully, but with the recognition that freedom was often supported by planning, technology, self-knowledge, and relational understanding. Across the interviews, participants

emphasized that living well with type 1 diabetes did not mean removing the illness from life. Rather, it meant developing the emotional resilience, practical competence, supportive relationships, and identity flexibility necessary to live with diabetes without allowing it to occupy the whole self.

4. Discussion

The present study explored psychological adaptation, illness identity, and quality of life among young adults living with type 1 diabetes in Canada through an Interpretative Phenomenological Analysis. The findings showed that young adults did not experience type 1 diabetes only as a biomedical condition requiring insulin administration and glycemic monitoring, but as a continuous psychological, relational, and identity-related presence in everyday life. Four central interpretative insights emerged from the analysis. First, psychological adaptation was experienced as an ongoing negotiation rather than a completed state of adjustment. Second, illness identity was constructed through a tension between rejecting diabetes as a total definition of the self and integrating it as an unavoidable part of personal history and daily life. Third, quality of life was understood as conditional freedom, meaning the ability to participate in desired activities while continuously planning, anticipating risk, and maintaining safety. Fourth, young adulthood intensified these processes because participants were simultaneously managing diabetes and navigating autonomy, education, employment, intimate relationships, and future planning. These findings extend prior research by showing that adaptation, identity, and quality of life are not separate outcomes, but dynamically interconnected dimensions of living with type 1 diabetes.

One of the most prominent findings was that psychological adaptation was not described as a linear movement from distress to acceptance, but as a recurring and fluctuating process. Participants reported that they gradually developed practical acceptance, self-efficacy, and tolerance of uncertainty, yet they continued to experience emotional fatigue, frustration, and distress when diabetes felt unpredictable. This finding is consistent with previous research indicating that young adults with type 1 diabetes experience the transition to adulthood as a complex developmental process involving shifting responsibility, emotional burden, and renegotiation of support (Bayrakdar et al., 2024; Olsson et al., 2023). The present findings also align with evidence that psychological resources are important during the transition from pediatric to adult diabetes care, particularly because this period requires young adults to assume greater responsibility while coping with uncertainty and changing healthcare relationships (Cyranka et al., 2023; Laursen et al., 2023). The participants' accounts suggest that adaptation is not achieved once and then maintained permanently; rather, it is repeatedly tested by glucose variability, life transitions, social situations, and changing developmental demands.

The emotional burden described by participants also supports previous findings on diabetes distress, depression screening, stigma, and quality of life among adolescents and emerging adults with type 1 diabetes. Participants emphasized that distress often emerged when they felt responsible for outcomes that were not fully controllable, such as unexpected hyperglycemia or hypoglycemia despite careful management. This is consistent with studies showing that diabetes distress is a significant psychosocial concern among emerging adults and may be linked to self-efficacy, stigma, depression, and perceived quality of life (Soufi et al., 2023; Stahl-Pehe et al., 2023). The finding that participants developed confidence through repeated experience rather than through knowledge alone also resonates with research identifying environmental mastery as an important factor associated with diabetes distress among young adults (Nagel et al., 2025). In this sense, adaptation appears to involve the development of embodied competence: young adults learn not only diabetes rules, but also how their own bodies respond to food, insulin, stress, activity, sleep, illness, and emotional states.

The second major finding concerned illness identity. Participants strongly resisted being defined entirely by diabetes, while also recognizing that diabetes had shaped their routines, maturity, body awareness, social interactions, and sense of responsibility. This tension is closely aligned with the illness identity framework, which suggests that adjustment to type 1 diabetes depends partly on whether the condition is rejected, engulfing, accepted, or integrated within the self (Rassart et al., 2021). The present study adds qualitative depth to this framework by showing how illness identity is negotiated in everyday contexts, particularly through decisions about disclosure, visibility, and social presentation. Participants did not simply choose whether to "accept" or "reject" diabetes; instead, they actively managed how much space diabetes occupied in their self-concept and in the perceptions of others. This finding is also consistent with broader developmental evidence indicating that illness identity and well-being influence one another over time and

that chronic illness identity should be understood dynamically rather than as a fixed psychological trait (Laere et al., 2024).

Participants' accounts of visibility and disclosure are especially important. Devices, alarms, injections, food choices, and symptoms made diabetes visible in social settings, requiring participants to decide when to explain their condition and how to prevent misinterpretation. This supports previous qualitative research showing that young people with type 1 diabetes often want to be like everybody else while simultaneously managing a condition that sets them apart in social contexts (Hussein et al., 2023). It also aligns with hermeneutic findings that young people living with type 1 diabetes experience the condition through ordinary daily situations, where the effort to live normally is complicated by the constant need for self-management (Holmström & Söderberg, 2021). The present study suggests that the desire for normality should not be interpreted as denial. Rather, participants sought a form of normality that allowed diabetes management to be present without becoming socially dominant or identity-defining.

The theme of illness identity was also related to body image and self-concept. Participants' experiences with diabetes technologies, injections, and bodily signals affected how they understood their bodies and how they presented themselves to others. This finding is supported by evidence that body image and self-concept influence type 1 diabetes management among adolescents and young adults (Garrido-Bueno et al., 2025). The present study extends this evidence by showing that body-related experiences were not limited to appearance or self-esteem, but were also tied to social visibility, control, vulnerability, and identity. For some participants, devices increased confidence and safety; for others, they functioned as reminders of difference. This dual meaning of technology is important because current diabetes care increasingly depends on technological systems, yet young adults may experience these systems as both liberating and intrusive.

The third major finding was that participants understood quality of life as conditional freedom. They described being able to study, work, socialize, travel, exercise, and form relationships, but only through planning, preparation, monitoring, and risk management. Quality of life was therefore not defined as the absence of diabetes-related limitations, but as the ability to participate meaningfully while feeling safe, competent, and supported. This aligns with current emphasis on person-reported outcomes in diabetes research, which recognizes that quality of life, distress, treatment satisfaction, and emotional well-being are central constructs that cannot be captured by biomedical indicators alone (Wit et al., 2024). The findings are also consistent with research showing that personality, coping, developmental conditions, metabolic control, and quality of life are interconnected among adolescents and young adults with type 1 diabetes (Wagner et al., 2022). The present study adds that young adults may evaluate quality of life not by whether diabetes disappears from attention, but by whether it can be managed without overwhelming identity, relationships, and participation.

Social relationships played a central role in participants' quality of life. Participants valued support that was informed but not intrusive, responsive but not controlling, and protective without making them feel fragile. This finding supports previous research on the importance of peer support, friend support, and relational satisfaction in type 1 diabetes adjustment (Helgeson et al., 2022; Raymaekers et al., 2021). It also aligns with evidence that serving as a peer supporter may benefit adolescents and young adults with chronic conditions by strengthening meaning, competence, and connection (Manning et al., 2025). However, the present study also shows that support is not automatically beneficial. Participants were sensitive to the emotional tone of support and distinguished between supportive involvement and surveillance. This distinction is important because young adults are trying to establish independence while still needing practical safety networks. Support that undermines autonomy may intensify illness identity threat, whereas support that respects self-direction may enhance adaptation and quality of life.

The findings also highlight the importance of education and employment contexts. Participants described hidden labor in university, work, and social environments, including planning meals, carrying supplies, responding to alarms, managing hypoglycemia risk, and deciding whether to disclose diabetes. These findings are consistent with literature showing that university students with diabetes require support related to disclosure, accommodations, routines, academic expectations, and social participation (Hagger et al., 2022). They also align with student-centered research indicating that environmental characteristics of college settings shape diabetes management (Malova & Harrison, 2023). Similarly, workplace experiences among young adults with type 1 diabetes have been shown to involve disclosure decisions, social-ecological barriers, and the need to manage diabetes within productivity-focused environments (Saylor et al., 2021). The present study

reinforces that education and employment are not merely background demographic variables; they are active contexts in which adaptation, identity, and quality of life are negotiated.

Healthcare transition was another important interpretative context. Although this study focused on lived experience rather than service evaluation, participants' narratives reflected the broader challenge of moving toward independent diabetes care while maintaining supportive relationships with clinicians and family members. This is consistent with research showing that transition and transfer to adult care are experienced as major developmental and relational processes by young adults and parents (Olsson et al., 2026; Olsson et al., 2023). It also aligns with studies emphasizing the importance of care provider familiarity, continuity, and support during transition to adulthood (Laursen et al., 2023). The findings suggest that transition support should not focus only on appointment attendance or biomedical self-management, but should also address identity, confidence, emotional readiness, and quality of life. Programs designed to prepare adolescents and young adults for healthcare transition may be strengthened by incorporating these psychosocial dimensions more explicitly (Caccavale et al., 2025).

The role of digital and eHealth interventions is also relevant to the present findings. Participants' experiences suggested that technology can support autonomy, safety, and self-efficacy, but may also increase constant awareness of diabetes. This dual effect is important in light of current efforts to develop eHealth interventions, apps, and technology-mediated support systems for adolescents and young adults with type 1 diabetes (Carcone et al., 2025; Chiang et al., 2025; Spaggiari et al., 2025). Technology-mediated peer support interventions and broader eHealth approaches may help young people access information and social connection, but the present findings suggest that such interventions must be designed around lived experience rather than assuming that more monitoring or more information always improves well-being (Titoria et al., 2023). Young adults may benefit most from digital tools that reduce burden, support autonomy, and fit naturally into everyday routines.

The present findings also support qualitative and ethnographic research emphasizing that diabetes care must fit into life rather than life being organized entirely around diabetes. The participants' descriptions of hidden planning, social negotiation, and flexible adaptation are strongly aligned with photovoice evidence showing that young adults make active efforts to integrate diabetes care into their daily lives (Gastel et al., 2026). The findings are also consistent with ethnographic work showing that clinical guidelines become meaningful when they are translated into personally relevant strategies during clinical encounters (Schønning et al., 2025). In this study, participants did not reject medical recommendations, but they evaluated them in relation to social participation, emotional energy, autonomy, and life goals. This suggests that effective diabetes care requires interpretative sensitivity: clinicians must understand how young adults make sense of recommendations within the actual conditions of their lives.

5. Conclusion

Finally, the findings are consistent with emerging intervention perspectives that emphasize psychological flexibility, acceptance, and values-based living. Participants repeatedly described the need to live with uncertainty, tolerate imperfect control, and continue pursuing valued life activities despite diabetes-related demands. These experiences align with the rationale for psychological interventions such as Acceptance and Commitment Therapy, which focus on flexibility and meaningful action rather than complete elimination of distress (Panton et al., 2025). The findings also resonate with scoping review evidence indicating that self-management interventions for young adults with chronic conditions should be developmentally appropriate and responsive to autonomy, identity, and life-stage needs (Almabadi et al., 2025). Moreover, broader work on life-stage transitions and adulthood with juvenile-onset type 1 diabetes reinforces that quality of life is shaped by education, employment, relationships, and long-term developmental pathways (Maurel et al., 2025; Vitale et al., 2025). Thus, the present study contributes to the literature by integrating these domains into a single interpretative model in which living well with type 1 diabetes emerges through the dynamic interaction of adaptation, illness identity, and quality of life.

6. Limitations & Suggestions

The study has several limitations. First, the sample consisted of 16 young adults living in Canada, and although this sample size was appropriate for Interpretative Phenomenological Analysis, the findings should not be interpreted as statistically representative of all young adults with type 1 diabetes. Second, participants who agreed to take part in an in-depth interview may have been more willing or

able to reflect on their experiences than those who declined participation, which may have influenced the nature of the narratives obtained. Third, the study relied on self-reported accounts, and the findings reflect participants' subjective meanings rather than objective measures of metabolic control, psychological symptoms, or healthcare utilization. Fourth, although the sample included variation in gender, province, diabetes duration, and management method, it did not fully capture the experiences of all cultural, socioeconomic, Indigenous, rural, immigrant, and linguistically diverse groups in Canada. Finally, because the study was cross-sectional, it captured participants' experiences at one point in time and could not directly examine how psychological adaptation, illness identity, and quality of life change across different stages of young adulthood.

Future research should examine the lived experience of type 1 diabetes among more diverse groups of young adults, including those from rural and remote communities, Indigenous populations, recent immigrants, lower-income backgrounds, and individuals with limited access to diabetes technology. Longitudinal qualitative research would be especially valuable for understanding how adaptation, illness identity, and quality of life evolve across key transitions such as leaving home, entering university, beginning full-time employment, forming intimate relationships, pregnancy planning, and transferring to adult diabetes services. Future studies could also compare the experiences of young adults using different diabetes technologies, including continuous glucose monitoring, insulin pumps, hybrid closed-loop systems, and multiple daily injections, to better understand how technology affects autonomy, visibility, distress, and identity. Mixed-methods research may further clarify how qualitative themes such as conditional freedom, hidden labor, and identity integration relate to quantitative indicators of distress, self-efficacy, glycemic outcomes, and health-related quality of life. Additional research should also investigate how family members, partners, peers, employers, educators, and healthcare providers understand their roles in supporting young adults without undermining independence.

In practice, the findings suggest that care for young adults with type 1 diabetes should move beyond a narrow focus on glycemic outcomes and include systematic attention to psychological adaptation, illness identity, and quality of life. Healthcare providers should create space for young adults to discuss emotional fatigue, uncertainty, disclosure, relationships, technology burden, education, employment, and future concerns as legitimate parts of diabetes care. Transition programs should support not only technical self-management skills, but also confidence, autonomy, identity integration, and communication with family members, partners, universities, and workplaces. Clinicians should recognize that support can feel intrusive when it threatens independence, and should help young adults identify the kind of support that feels respectful, practical, and emotionally safe. Diabetes education should also address the hidden labor of living with diabetes, including planning, social negotiation, and decision-making in unpredictable real-world settings. Most importantly, young adults should be supported in developing a life with diabetes that is not organized solely around control, but around participation, meaning, flexibility, and a sustainable sense of self.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed to this article.

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