

QUALITY OF LIFE OF PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Abstract: Type 2 diabetes mellitus is a chronic metabolic disease whose prevalence continues to increase, making it one of the leading public health challenges of the modern era. It is characterized by insulin resistance and progressive metabolic dysregulation, resulting in chronic hyperglycemia. Due to its long-term nature and the need for daily self-management, the disease significantly affects the physical, psychological, social, and functional aspects of patients' lives. Consequently, contemporary therapeutic approaches have gradually shifted from an exclusive focus on glycemic control toward a more holistic model that includes the assessment and improvement of patients' quality of life. Aim: To provide an overview of current evidence on the determinants of quality of life in individuals with type 2 diabetes mellitus, emphasizing the role of health literacy, psychological factors, sociodemographic characteristics, and diabetes-related clinical complications. Methods: This paper is based on a narrative review of the available scientific literature. Relevant studies were identified through searches of electronic databases (PubMed, Scopus, Web of Science, and Google Scholar) following the PRISMA guidelines. Studies examining health-related quality of life (HRQoL) among adults with type 2 diabetes mellitus were considered eligible. A total of eight original research articles published in 2024 were included in the final analysis. Results: The reviewed studies indicate that most patients perceive their quality of life as moderate. A strong positive association is identified between health literacy and quality of life, with higher levels of health literacy contributing to better self-care and adherence to therapeutic recommendations, which emerged as the strongest predictors of a good quality of life. Conversely, psychological factors such as depression, anxiety, and diabetes distress, as well as clinical factors including disease duration, insulin therapy, and microvascular and macrovascular complications (e.g., peripheral neuropathy and heart failure), were found to significantly impair daily functioning and reduce the quality of life. Furthermore, older age, lower educational attainment, and poorer socioeconomic status were associated with less favorable outcomes.

Quality of life among individuals with type 2 diabetes mellitus is a complex construct influenced by the interaction of clinical, psychological, and behavioral determinants. Improving the quality of life requires a multidisciplinary approach that extends beyond pharmacological treatment alone. The integration of structured health literacy programs, continuous self-management education, psychological support, and the strengthening of social support networks represents an essential strategy for reducing emotional burden, improving disease management, and enhancing overall well-being and the quality of life in the long term.

Keywords: type 2 diabetes mellitus, quality of life, health literacy, diabetes distress, self-care, chronic complications

1. INTRODUCTION

Type 2 diabetes mellitus (T2DM) is one of the most significant chronic non-communicable diseases of the modern era and one of the leading public health challenges worldwide (International Diabetes Federation, 2021; American Diabetes Association, 2024). It is characterized by a progressive disorder of carbohydrate, fat, and protein metabolism resulting from insulin resistance and a relative deficiency of insulin, leading to chronic hyperglycemia and the development of numerous acute and chronic complications (American Diabetes Association, 2024). Because of its high prevalence, long-term course, and the need for continuous treatment and self-management, T2DM significantly affects not only patients' physical health but also their psychological, social, and functional well-being (World Health Organization, 2023; GBD 2021 Diabetes Collaborators, 2023). In recent years, the focus of diabetes management has increasingly shifted from glycemic control alone toward a holistic approach that includes the assessment and improvement of patients' quality of life (American Diabetes Association, 2024; Powers et al., 2021; Alsayed Hassan et al., 2022). The World Health Organization (2023) conceptualizes quality of life as how individuals perceive their life status, factoring in the cultural norms and values of their environment, alongside their personal objectives, standards, and apprehensions.

This concept emphasizes the subjective evaluation of one's life circumstances and encompasses physical, psychological, social, and environmental dimensions of functioning. In health research, the concept of Health-Related Quality of Life (HRQoL) is frequently used to describe the impact of health status, disease, and treatment on daily functioning and overall well-being (Forestier et al., 2019; Esubalew et al., 2024). Among

individuals with T2DM, quality of life represents one of the most important indicators of treatment success. Unlike many other chronic diseases, diabetes requires patients to actively participate in disease management on a daily basis through adherence to therapy, dietary regulation, regular physical activity, self-monitoring of blood glucose levels, and the prevention of complications (Powers et al., 2021; Alsayed Hassan et al., 2022). These ongoing demands may constitute a significant source of burden and stress, often affecting emotional well-being, social relationships, and overall life satisfaction. Recent studies consistently demonstrate that individuals with T2DM experience a lower quality of life compared to the general population, particularly in the physical and psychological domains (Teli et al., 2023).

A reduction in the quality of life among individuals with diabetes is associated with numerous interrelated factors. Demographic characteristics, such as advanced age, lower educational attainment, and lower socioeconomic status, are frequently linked to poorer quality-of-life outcomes (Tan et al., 2022; Teli et al., 2023). In addition, disease duration, the presence of comorbidities, insulin therapy, poor glycemic control, and the development of microvascular and macrovascular complications significantly contribute to impaired daily functioning (Davies, et al, 2022). Diabetic neuropathy, nephropathy, retinopathy, and cardiovascular diseases are particularly important, as they may lead to functional limitations, pain, reduced mobility, and loss of independence (Ritonga et al., 2025). Beyond the physical consequences of the disease, psychological factors play a crucial role in shaping the quality of life in individuals with type 2 diabetes. Depression, anxiety, diabetes-related emotional stress, and diabetes distress are common psychological responses that can negatively affect self-management behaviors, adherence to treatment recommendations, and overall health status (Jenkins et al., 2022; Perrin et al., 2017).

Conversely, recent studies indicate that self-efficacy, psychological resilience, and social support are significant positive predictors of quality of life among people with type 2 diabetes (Speight et al., 2020). In recent years, particular attention has been focused on health literacy as one of the key determinant of quality of life in individuals with diabetes. According to Nutbeam (2025), health literacy involves the capacity of an individual to obtain, process, interpret, and utilize health-related information to make informed healthcare choices.

Contemporary research demonstrates that health literacy is a significant predictor of self-management, metabolic control, and quality of life among people with type 2 diabetes (Al-Qerem et al., 2024). In addition to individual patient characteristics, the quality of life is influenced by the broader social and healthcare environment. Access to healthcare services, family support, social networks, and economic security represent important factors that may mitigate the negative consequences of the disease (World Health Organization, 2023). Recent studies further confirm that social support and patient education have a direct impact on quality of life and treatment adherence among individuals with type 2 diabetes (Almubaid et al., 2024; Hadush et al., 2024). Given the increasing prevalence of type 2 diabetes and its substantial impact on everyday life, the assessment of quality of life has become an important indicator of treatment effectiveness and healthcare planning. Contemporary diabetes management extends beyond achieving optimal glycemic control and emphasizes the preservation of physical, psychological, and social functioning (American Diabetes Association, 2024; Powers et al., 2021). Understanding the factors that influence quality of life may contribute to the development of targeted interventions aimed at improving treatment outcomes and enabling individuals with type 2 diabetes to lead more active, functional, and satisfying lives (Teli et al., 2023).

2. MATERIALS AND METHODS

This paper presents a narrative review of contemporary scientific literature addressing the quality of life in individuals living with Type 2 Diabetes Mellitus (T2DM) and the factors influencing its development and maintenance.

A literature search was conducted in 2026 across electronic databases, including PubMed, Scopus, Web of Science, Google Scholar, and ResearchGate. The search process adhered to the PRISMA guidelines for identifying, screening, and including relevant scientific studies.

The following keywords and their combinations were used: type 2 diabetes mellitus, quality of life, health-related quality of life, health literacy, diabetes distress, self-care, self-management, social support, psychological factors, diabetes complications, and glycemic control.

The inclusion criteria were as follows:

- Studies involving adults diagnosed with Type 2 Diabetes Mellitus;
- Studies assessing quality of life or health-related quality of life (hrqol);
- Original research articles published in 2024;
- Studies available in full text and published in English;
- Cross-sectional, longitudinal, and observational studies examining the determinants of quality of life.

The exclusion criteria included:

- Studies involving individuals with Type 1 diabetes mellitus or gestational diabetes;
- Review articles, narrative reviews, commentaries, and expert opinions without original data;
- Studies that did not assess quality of life as a primary or secondary outcome;

- Articles without full-text availability.

Following the screening of titles, abstracts, and full-text articles, eight studies meeting the predefined eligibility criteria were included in the final analysis. The selected studies comprised an aggregate sample of 2,957 individuals with type 2 diabetes across diverse geographic locations, such as Romania, Jordan, Nigeria, Iraq, Iran, and neighboring areas. The majority of these investigations utilized a cross-sectional methodology, whereas a single study adopted a longitudinal approach.

To evaluate quality of life, authors utilized diverse validated measures. Specifically, these included the Short Form-12 Health Survey (SF-12) and the Diabetes Quality of Life Questionnaire (DQOL), alongside the WHOQOL-BREF and EuroQol-5D (EQ-5D) scales.

Particular attention was given to identifying sociodemographic, clinical, psychological, and behavioral factors associated with quality of life among individuals with T2DM.

3. RESULTS

Based on the synthesis of the eight reviewed papers, quality of life in type 2 diabetes patients emerges as a multifaceted outcome shaped by intertwined behavioral, psychological, clinical, and sociodemographic elements.

Despite the variation in assessment tools across the literature, the gathered data reveal uniform trends regarding how patient demographics, health conditions, and self-care routines relate to overall well-being.

A predominant finding across multiple papers is that a moderate level of well-being is felt by most type 2 diabetes patients. For instance, Al-Qerem et al. (2024) documented an average well-being score of 2.87 (on a 5-point scale), which aligns with Salah and Al-Abedi (2024), who noted that 90% of their cohort fell into the moderate category. Furthermore, Ekekezie et al. (2024) observed a mean score of 52.9%, indicating that just over 50% of their sample experienced favorable life quality.

The interplay between health literacy and patient well-being was a primary focus in the reviewed literature. Al-Qerem et al. (2024) demonstrated that superior health literacy closely links to enhanced life quality.

Similar findings were reported by Jafari et al. (2024), who identified a moderately strong positive association between health literacy and quality of life ($r = 0.438$; $p < 0.001$). Moreover, path analysis within these investigations highlighted health literacy as a pivotal positive determinant of well-being...

, while simultaneously contributing to better self-care and reduced emotional burden associated with the disease. Mental health variables functioned as critical indicators of patient outcomes. According to Jafari et al. (2024), elevated levels of stress, anxiety, and depression inversely correlated with well-being scores, while higher life satisfaction predictably corresponded to more favorable self-assessments. Additionally, path analysis demonstrated that diabetes distress was the strongest negative predictor of quality of life ($\beta = -0.613$), while disease-related burnout and the presence of diabetes complications also made significant negative contributions. Beyond psychological attributes, variables tied to how patients manage their condition proved crucial. Engaging in self-care and complying with medical advice consistently tracked with higher well-being indices. Notably, Ekekezie et al. (2024) highlighted that compliance with treatment regimens served as the most robust indicator of positive life quality (aOR = 4.565; $p < 0.001$). Additionally, maintaining optimal fasting blood glucose levels correlated heavily with superior well-being outcomes.

The gathered literature further underscores the profound role of demographic profiles. Advanced age consistently linked to diminished well-being across the cohorts examined by Alsaraireh et al. (2024), Albalawi et al. (2024), and Al-Qerem et al. (2024). Concurrently, academic background played a protective role, as patients with higher educational attainment reported superior life quality. Finally, stable employment and robust socioeconomic standing predicted better patient outcomes, while financial constraints paired with poorer self-assessments.

Medical complications and clinical indicators stood out as powerful determinants of patient well-being. Albalawi et al. (2024) identified that individuals managing stroke, heart failure, diabetic peripheral neuropathy, or those undergoing insulin treatment reported markedly diminished quality of life. Furthermore, quality of life was negatively associated with older age, longer disease duration, higher HbA1c levels, unfavorable lipid profiles, and impaired renal function. Approximately one-third of participants reported the presence of pain, discomfort, anxiety, or depression, while difficulties in daily activities, self-care, and mobility were observed among a considerable proportion of respondents.

Data from a longitudinal inquiry by Izadi et al. (2024) revealed that aggregate metrics for both the mental and physical dimensions of well-being remained relatively stable throughout the monitoring timeframe. Nonetheless, distinct variations came to light within isolated areas, namely social and physical roles. Variations in the physical dimension were tied to gender, body mass index, and comorbid renal or cardiovascular conditions, whereas occupational status primarily dictated social functioning scores.

In summary, the collective evidence demonstrates that well-being in the context of type 2 diabetes is a cumulative product of diverse, interacting elements. These encompass a patient's psychological health,

healthcare literacy, social networks, self-management capacity, blood sugar stability, demographic features, and the onset of secondary medical complications.

The results also suggest that health literacy, adherence to therapeutic recommendations, and adequate disease control are among the most important factors associated with better quality of life.

Figure 1. PRISMA flow diagram of the study selection process

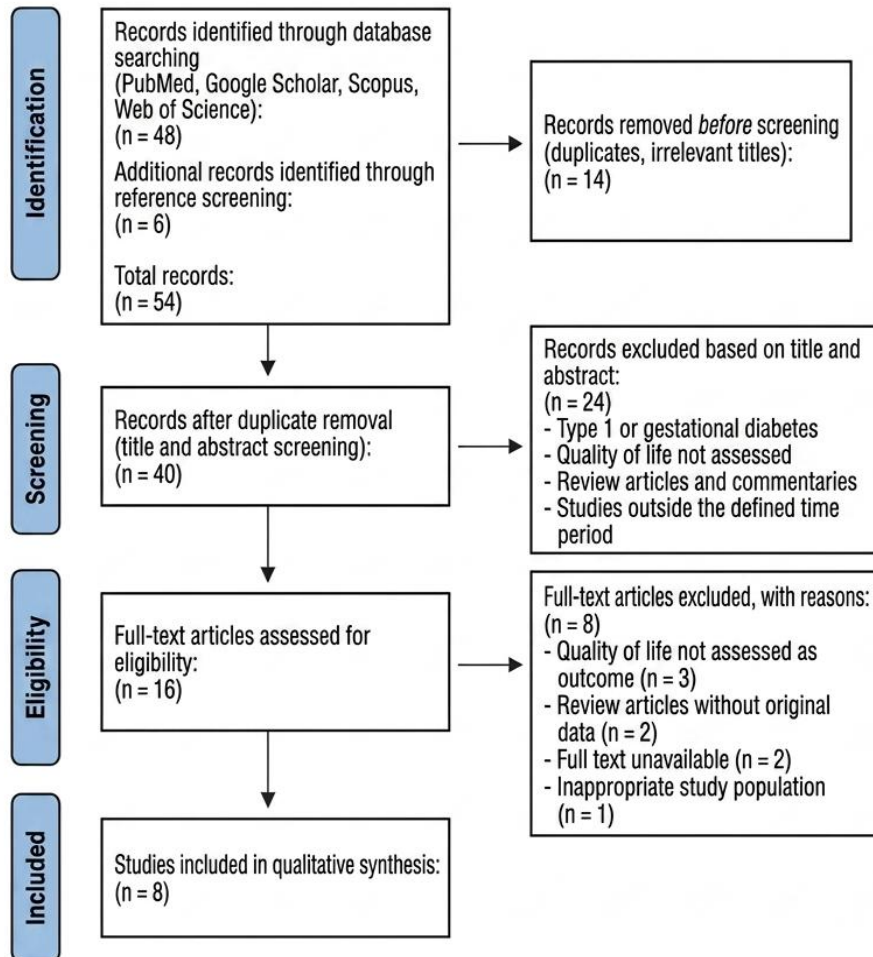


Table 1. Characteristics of Studies Included in the Review

Author(s)	Study Title	Objective	Methods	Results	Conclusion
Alsaraireh et al. (2024)	<i>Associated Factors Influencing Quality of Life and Knowledge Among Type 2 Diabetic Patients</i>	To evaluate how disease-specific awareness correlates with well-being in T2DM patients.	Cross-sectional study; n = 184	Well-being was overall moderate; age and the level of patient education/knowledge emerged as key correlates.	Age and diabetes knowledge influence quality of life
Al-Qerem et al. (2024)	<i>The Association Between Health Literacy and Quality of Life of Patients with Type 2 Diabetes Mellitus</i>	To investigate the association between health literacy and quality of life	Cross-sectional study; n = 400	Enhanced health literacy linked directly to superior well-being outcomes.	Health literacy stands as a crucial determinant of patient life quality.
Jafari et al. (2024a)	<i>Role of Diabetes Health Literacy,</i>	To examine the role of psychological and	Cross-sectional	Health literacy and self-care improved	Psychological support and

	<i>Psychological Status, Self-Care Behaviors, and Life Satisfaction in Predicting Quality of Life in Patients with Type 2 Diabetes</i>	behavioral factors in quality of life	study; n = 300	quality of life, while psychological distress reduced it	education may improve quality of life
Jafari et al. (2024b)	<i>Relationship Between Diabetes Health Literacy, Distress, Burnout, Social Support, Self-Care Behaviors and Quality of Life Among Patients with Type 2 Diabetes</i>	To investigate how social support, emotional burnout, and diabetes-specific distress intertwine with patient well-being.	Cross-sectional study; n = 820	Elevated burnout and distress adversely affected life quality, while robust self-care and social resources showed a protective, positive effect.	Interventions targeting psychological and social factors are needed
Izadi et al. (2024)	<i>Socio-behavioral Determinants of Health-Related Quality of Life among Patients with Type 2 Diabetes</i>	To explore the social and behavioral factors that dictate well-being over time.	Longitudinal study; n = 498	Patient body mass index, secondary medical complications, and work status emerged as major correlates of overall life quality.	Quality of life depends on multiple social and health-related factors
Albai et al. (2024)	<i>Predictive Factors for Altered Quality of Life in Patients with Type 2 Diabetes Mellitus</i>	To pinpoint clinical and environmental triggers linked to a decline in patient well-being.	Cross-sectional study; n = 299	Inadequate metabolic regulation and the presence of secondary clinical complications predicted poorer well-being outcomes.	Prevention of complications may improve quality of life
Salah & Al-Abedi (2024)	<i>Identification of Quality of Life for Patients with Type II Diabetes Mellitus</i>	To outline the baseline well-being of the cohort alongside their demographic profiles.	Cross-sectional study; n = 150	Participants mostly reported intermediate life quality, with occupational status, schooling, and financial earnings acting as primary influencers.	Socioeconomic factors significantly influence quality of life
Ekekezie et al. (2024)	<i>A Cross-Sectional Study on the Quality of Life of Patients with Type 2 Diabetes Attending a General Hospital in Lagos State</i>	To analyze the core predictors shaping well-being within the targeted T2DM group.	Cross-sectional study; n = 306	Optimal regulation of blood glucose and strict compliance with medical regimens corresponded to superior life quality.	Patient education and adherence to therapy improve quality of life

Source: Illustration

4. DISCUSSION

The quality of life of individuals living with type 2 diabetes mellitus represents one of the most important indicators of treatment success, as it reflects not only the physical consequences of the disease but also its

psychological, social, and functional implications. The contemporary concept of diabetes management is increasingly moving away from the exclusive monitoring of metabolic parameters and toward a holistic approach that includes the preservation of daily functioning, emotional well-being, and social inclusion of patients. In this context, quality of life becomes an important treatment outcome that enables a more comprehensive evaluation of the effectiveness of healthcare delivery.

The synthesized evidence indicates that well-being among type 2 diabetes patients constitutes a holistic outcome generated by the dynamic interplay of personal, clinical, and environmental elements. The obtained findings support the biopsychosocial model of health, according to which the experience of illness does not depend solely on the presence of pathological changes, but also on how an individual understands the disease, adapts to it, and uses available resources to cope with its consequences. Such an understanding is particularly important in type 2 diabetes, where treatment success is largely conditioned by the patient's daily behavior.

One of the themes particularly emphasized in contemporary literature is the importance of health literacy. Conventional healthcare approaches frequently operated on the premise that simple knowledge transfer directly triggers behavioral shifts. In contrast, contemporary literature frames health literacy as a far more expansive paradigm, encompassing a patient's capacity to interpret, critique, and actively execute medical guidance within their daily routines.

Patients possessing advanced health literacy skills tend to engage proactively in their care journeys, navigate therapeutic choices with greater confidence, and show a stronger commitment to preventative strategies.

For this reason, health literacy is now considered one of the key elements of modern chronic disease management programs. Psychological aspects of living with diabetes are also of particular importance. Living with a chronic illness involves continuous decision-making, self-monitoring, and adaptation of daily activities, which for many individuals can represent a source of long-term emotional burden. Lately, academic circles have placed greater emphasis on diabetes-specific distress—a distinct emotional state separate from clinical depressive disorders—which captures the precise psychological strain of navigating a lifelong metabolic condition.

Such emotional burdens can reduce motivation for treatment adherence, make it more difficult to adopt healthy lifestyle habits, and indirectly affect the perception of one's own quality of life. Therefore, the need to include psychological assessment and support in standard diabetes care is increasingly emphasized.

The importance of social support represents another key aspect emerging from the analyzed literature. Support from family, friends, and healthcare professionals can significantly facilitate daily coping with the demands of the disease. Social support contributes to a sense of security, reduces emotional burden, and encourages more consistent adherence to recommended health behaviors. At the same time, a lack of support may increase feelings of isolation and make the process of disease adjustment more difficult. Such findings confirm that diabetes management should not be focused exclusively on the individual, but also on their immediate social environment.

The reviewed literature further validates the profound impact of structural social determinants on patient outcomes. Financial stability, employment status, and formal schooling fundamentally dictate a patient's capacity to acquire health insights, utilize medical infrastructure, and successfully adopt mandated behavioral modifications.

Individuals with a more favorable socioeconomic status often have greater resources for disease management, whereas financial limitations may hinder regular health monitoring, access to medication, and the adoption of recommended habits. These findings further support the need for an individualized approach to treatment that takes into account the patient's broader life context.

The clinical characteristics of the disease also have significant implications for quality of life. The development of diabetes-related complications often leads to a progressive decline in functional ability, increased dependence on others, and a diminished subjective sense of health. However, it is important to emphasize that quality of life is not determined solely by disease severity. Some patients, despite the presence of complications, are able to maintain a satisfactory level of functioning thanks to developed coping strategies, adequate support, and active involvement in treatment. These findings highlight the need for equal attention to be given to both objective and subjective indicators of health in the assessment of health outcomes.

The practical implications of the analyzed studies indicate that improving the quality of life of individuals with type 2 diabetes requires a multidisciplinary approach. In addition to pharmacological treatment, it is necessary to develop programs of health education, psychological support, and patient empowerment for active disease management. Such programs can contribute not only to better disease control but also to the preservation of emotional well-being, social functioning, and overall life satisfaction.

While the gathered data offer valuable perspectives on the forces driving patient well-being, several research constraints must be acknowledged when evaluating these conclusions.

A primary constraint is that the bulk of published research relies on cross-sectional frameworks, thereby preventing the deduction of definitive cause-and-effect dynamics. Furthermore, the heterogeneity of assessment

scales utilized across different cohorts complicates the direct synthesis and comparative analysis of their metrics.

5. CONCLUSION

Ultimately, life quality among those navigating type 2 diabetes is a intricate, multi-layered phenomenon continuously molded by a confluence of behavioral patterns, demographic variables, mental health states, and clinical indicators.

The analysis of the included studies showed that quality of life does not depend solely on the presence and duration of the disease, but also on the way individuals manage the illness, their level of health literacy, psychological adjustment, social support, and the ability to implement recommended health behaviors.

This synthesis highlights healthcare literacy as a cornerstone of long-term patient well-being. Cultivating a deeper comprehension of the illness and its clinical protocols paves the way for more proficient self-care routines, greater treatment adherence, and more successful handling of daily disease-related demands. At the same time, psychological factors, particularly diabetes-related emotional distress, depression, and anxiety, can significantly impair quality of life and complicate the treatment process.

Concurrently, the synthesized literature highlights that social networking resources, educational background, and financial stability act as pivotal predictors of patient well-being. Encouragement from relatives and medical practitioners, when paired with structured instructional initiatives, fosters superior adjustment to the illness and protects the functional capabilities of individuals.

Conversely, sub-optimal blood sugar regulation, extended duration of the illness, and the emergence of secondary medical conditions correlate heavily with a heightened probability of diminished well-being.

These outcomes validate the premise that modern diabetes care paradigms must expand beyond the narrow scope of stabilizing metabolic markers to actively foster the comprehensive wellness of the patient.

Combining patient education, psychological counseling, and strategies designed to bolster independent condition management marks a critical milestone in elevating life quality within the T2DM population.

Subsequent investigations ought to prioritize the long-term tracking of well-being trajectories, while systematically testing the utility of integrated, multi-specialty care strategies that concurrently target the emotional, social, and clinical facets of patient management.

Adopting this holistic framework could guide the formulation of superior public health initiatives, ultimately ensuring sustained improvements in the daily lives of those managing type 2 diabetes.

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