Patients' And Physicians' Perspectives On Glycemic Control Targets In Type 2 Diabetes: A Comparative Survey Study

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Abstract

Optimal glycemic control is still fundamental to controlling Type 2 Diabetes mellitus, however, physicians' glycemic targets and patients' expectations are frequently different. The purpose of this study was to compare patients' and physicians' views of what constitutes appropriate glycemic control targets and investigate what factors influence those views.

The study was a cross-sectional comparative survey conducted from January to April 2025 with patients diagnosed with Type 2 Diabetes and physicians who manage diabetes care. Two hundred twenty (220) participants made up the sample: (N=150) represented patients diagnosed with Type 2 Diabetes and (N=70) represented physicians (endocrinologists or primary care providers). A structured questionnaire, consisting of three sections (demographics, perception of target glycemic level, and factors influencing treatment goals), was used to gather data. Glycemic targets were evaluated primarily as Hemoglobin A1c (HbA1c). The statistical analyses of the data were conducted using descriptive statistics, chi-square tests, and independent sample t-tests to compare between the two groups. A statistical significance level was set at a p-value of <0.05.

68.7% of physicians reported having a strict glycemic control goal of HbA1c of <7%, in accordance with international diabetes management guidelines, and only 41.3% of patients felt similarly. About 36.0% of patient felt HbA1c levels between 7 and 8% were acceptable, while only 18.6% of physicians felt the same way. In addition, 22.7% of patients indicated that they were unsure about the recommended HbA1c goal.

Physicians were significantly more likely to support individualized glycemic targets based upon age, commorbid conditions, and potential for developing hypoglycemia (p<0.003). A large number of patients stated that fear of hypoglycemia or medication side effects affected their willingness to attempt rigorous glycemic control, while 64.2% of physicians stated that the prevention of long-term complications guided their treatment goals.

The study highlighted a significant discrepancy between the clinician and patient glycemic control goals. There is clearly a need for improved shared decision making, education about the diabetes condition, and the development of individualized treatment plans for better adherence and ultimately, improved long-term diabetes outcomes.

Keywords: Type 2 Diabetes Mellitus, Glycemic Control, Hemoglobin A1c, Patient–Physician Communication, Diabetes Management, Shared Decision-Making, Comparative Survey Study.

Introduction

Type 2 Diabetes Mellitus (T2DM) is one of the most common chronic metabolic diseases in the world and has become an increasing public health problem because of its increased rate of occurrence and its long-term complications. The defining characteristics of T2DM are an inability to respond to the action of insulin (insulin resistance) and a progressive loss of insulin-producing β-cells, resulting in long-lasting hyperglycemia and an increased risk for developing microvascular and macrovascular complications (e.g., retinopathy, nephropathy, neuropathy, and cardiovascular disease). The effective management of Type 2 Diabetes requires ongoing monitoring and appropriate control of glucose levels in order both to prevent progression of T2DM and to reduce morbidity and mortality rates from T2DM-related complications.

The primary goal of diabetes management is to achieve optimal glycemic control. Glycemic control is usually assessed by measuring Hemoglobin A1c (HbA1c), which indicates an individual's average blood glucose level over the past 2-3 months and provides a useful marker for assessing whether a patient's diabetes management is achieving desired outcomes. By maintaining HbA1c within the targets established in clinical practice guidelines, individuals with diabetes can significantly lower their long-term risk of complications from T2DM and improve their overall quality of life. Unfortunately, many individuals do not achieve the recommended glycemic control levels as outlined in clinical practice guidelines due to a variety of factors related to behavior, psychology, and access to healthcare.

Self-care activities of patients significantly contribute to the proper control of their blood sugar levels. Self-care activities include the proper intake of medication, monitoring of blood sugar levels, consumption of healthy foods, exercise, and regular consultation with medical practitioners. Research has proven that proper self-care activities of patients significantly contribute to proper blood sugar control and prevention of diabetes complications. For example, research conducted among patients with Type 2 Diabetes in Jordan revealed that there is a significant association between diabetes self-care activities and better control of blood sugar levels among patients with Type 2 Diabetes (Almomani & Al-Tawalbeh, 2022). Another study conducted among patients attending primary healthcare centers in Saudi Arabia revealed that the level of adherence to diabetes self-management activities varies among patients with diabetes, depending on various factors (AlQahtani et al., 2020).

In addition to the influence of behavioral characteristics, how people view or think about their condition also plays a large part in the success of managing diabetes. An individual's perception of their chronic condition includes their beliefs about what causes and/or leads to their illness, the effect it will have on them, how much control they have over it, and for how long they will suffer from it. These perceptions are important because they will tend to drive how compliant a patient is to the plan of care that has been created and how actively the patient engages in managing their own disease. For example, if a person sees, or perceives, diabetes to be a serious but treatable illness, they are more likely to comply with their treatment plan and lead a healthier lifestyle than someone who has a distorted or negative perception about their metabolic disorder (Tang & Gao, 2019).

A second aspect of diabetes management is the relationship between a patient and their health care provider (physician), who directs their treatment options and develops a plan for the patient to achieve their defined or acceptable level of blood glucose. A difference of perception between a physician and patient about what constitutes a recommended blood glucose goal may play a role in how compliant a patient is with their treatment plan and ultimately how successful the resources that the doctor provides are in achieving the intended outcome. While physicians will generally use evidence-based guidelines and establish targets when developing an overall blood glucose goal for their patients, the patient's perceptions (e.g., long-term effects of treatments, the cost of treatment, potential side effects, concern about hypoglycemia) can frequently differ from the physician's. Differences in the perception of either party can create barriers to effective communication, as well as shared decision-making, which ultimately impacts the effectiveness of resources used for diabetes management.

Moreover, the use of structured data analysis tools and statistical reporting tools is crucial in ensuring proper interpretation of clinical research results. Modern statistical software packages, for instance, make use of tools such as R programming software for reproducible data analysis and reporting of clinical research results. Such tools as the gtsummary package enable researchers to produce reproducible summary tables for clinical research results, thereby enhancing transparency in reporting clinical research results (Sjoberg et al., 2021).

With the rising burden of Type 2 Diabetes globally and the difficulties associated with glycemic control in managing the condition, it is critical to understand the perspectives of both patients and physicians in relation to glycemic control targets in managing Type 2 Diabetes. Such understanding may help in identifying possible barriers to proper management of diabetes in both patients and physicians. Therefore, the purpose of this study is to examine and compare the perspectives of both patients and physicians in relation to glycemic control targets in managing Type 2 Diabetes.

Methodology

Study Design
This study used a quantitative cross-sectional comparative survey design to investigate the differences between patients' and physicians' perspectives on the targets for glycemic control in Type 2 Diabetes Mellitus. A cross-sectional design was considered appropriate because it allows researchers to study attitudes, perceptions, and behaviors of a given population at a particular time. The comparative aspect of this study allowed for an evaluation of possible differences in the viewpoints of the two key stakeholders involved in the management of diabetes mellitus: patients and physicians. This design offered a framework for exploring possible discrepancies in perceptions related to targets and decision-making processes.

Study Setting and Population
The study was carried out between January and April 2025. The study sites included outpatient clinics and primary healthcare centers that offer services for the management of diabetes. The study population can be classified into two groups. The first group comprises patients diagnosed with Type 2 Diabetes and receive routine medical care and treatment. The second group comprises physicians involved in the management of diabetes, including endocrinologists and primary care physicians who routinely offer medical care services to diabetic patients. These groups were targeted because they play a critical role in guiding and implementing a management plan for diabetes.

Sample Size and Sampling Technique
The total sample size for the study was 220 participants in order to have a proper representation of both patients and physicians. The sample included 150 patients suffering from Type 2 Diabetes and 70 physicians dealing with diabetic patients. For the purpose of data collection, a convenient sample was selected using a convenient sampling technique. This technique is usually applied in survey-based healthcare studies where a sample is selected based on their availability and willingness to participate in a survey. Patients were selected during their routine clinical visits, whereas physicians were selected through direct contact in healthcare facilities. The selected sample size was sufficient for a proper statistical comparison between both groups.

Inclusion and Exclusion Criteria
To ensure consistency and reliability in the collected data, specific inclusion and exclusion criteria were used. For instance, patients were considered eligible if they were 18 years or older in age, diagnosed with Type 2 Diabetes, and have been undergoing treatment for at least one year. This criterion was used to ensure that patients were experienced in managing their health and could offer informed opinions regarding glucose level management. Severe cognitively impaired patients were also considered ineligible to participate in the study if they were unable to complete the questionnaire independently. For the second group of study participants, licensed physicians were considered eligible if they were actively involved in managing patients with Type 2 Diabetes and have at least one year of experience in managing patients with Type 2 Diabetes.

Data Collection Instrument
Data gathering was conducted by using a structured self-administered questionnaire, which was developed on the basis of literature relevant to diabetes management and control. The structured questionnaire used for data gathering had three major components. The first part of the questionnaire gathered information on the demographic and professional characteristics of the respondents, including age, gender, years of diabetes management for patients, and years of clinical practice for physicians.

The second part of the questionnaire gathered information on the perceptions of the respondents about recommended levels of control, especially those concerning Hemoglobin A1c (HbA1c) levels. The third part of the questionnaire gathered information on factors that influence treatment decisions, such as the level of fear of hypoglycemic episodes, treatment burden, prevention of complications, and the level of communication between physicians and patients.

Data Collection Procedure
The process of data collection took four months. Patients were approached when they came for their scheduled appointments. Patients were made aware of the purpose of the study before being approached for their participation in the study. Patients who agreed to participate in the study completed their questionnaires in a specific section of the healthcare facility where privacy and confidentiality of their responses could be guaranteed. Similarly, physicians were approached to participate in the study. They could either complete a paper form of the questionnaire or an electronic version of the survey.

Study Variables
The variables that formed the subject of interest in the study included the glycemic target level that a patient preferred for their own use. The level of HbA1c that a patient found acceptable for effective management of their diabetes was a key aspect of interest in the study. Other variables included demographic factors, duration of diabetes in patients, clinical experience of physicians, and factors that a physician believed affected their choice of glycemic target level.

Statistical Analysis
The collected data was coded, entered, and analyzed using statistical analysis software. Descriptive statistics were employed to analyze the characteristics of the participants and the results of the surveys, including frequencies, percentages, means, and standard deviations. Comparative statistics were also employed to determine the differences in the responses of the patients and the physicians. The Chi-square test was employed to analyze the categorical variables, whereas the independent t-test was employed to analyze the mean values of the variables in the two groups. A value of less than 0.05 was considered significant to show the difference in the opinions of the patients and the physicians regarding the glycemic control targets.

Ethical Considerations
Ethical clearance for the study was obtained from the concerned institutional review authority before the commencement of the data collection process. Informed consent was obtained from the participants regarding the purpose of the study. Confidentiality was strictly maintained while dealing with the participants. No personal information was collected from the participants. The participants were free to withdraw from the study at any stage of the data collection process.
the above-specified methodology was adopted for the study with the aim of ensuring an objective comparison of the perspectives of patients and physicians regarding the target for the control of blood sugar in the case of Type 2 Diabetes. The data was collected using the structured data collection tools, and the findings were analyzed using statistical tools with the aim of ensuring the accuracy of the findings.

Results
This section will present the findings of the comparative survey that was conducted among 220 participants, including 150 patients diagnosed with Type 2 Diabetes Mellitus and 70 physicians involved in the management of diabetes mellitus. The analysis of the participants' demographic characteristics, perception of glycemic control targets, preferred levels of Hemoglobin A1c, and factors that influence treatment decisions will be performed through descriptive and comparative statistical analysis.

Table 1. Demographic Characteristics of the Study Participants (n = 220)

VARIABLE	CATEGORY	PATIENTS (N=150)	PHYSICIANS (N=70)	TOTAL (%)
GENDER	Male	82	41	55.9

	Female	68	29	44.1
AGE GROUP	20–30	18	12	13.6
	31–40	29	23	23.6
	41–50	41	18	26.8
	51–60	39	12	23.2
	>60	23	5	12.8
EDUCATION LEVEL (PATIENTS)	Secondary	48	—	32.0
	University	71	—	47.3
	Postgraduate	31	—	20.7
PHYSICIAN SPECIALTY	Endocrinology	—	28	40.0
	Internal Medicine	—	24	34.3
	Family Medicine	—	18	25.7

From the demographic analysis, it is clear that the majority of the participants were males, constituting 55.9% of the total number, while females constituted 44.1% of the total number of participants. The majority of the participants, 26.8%, fell in the category of people aged between 41 and 50 years, followed by those in the category of people aged between 31 and 40 years, constituting 23.6% of the total number of participants. Almost 47.3% of the patients possessed a university degree, implying that the population is educated and capable of understanding medical recommendations on how to handle diabetes. Of the physicians, 40% were endocrinologists, while 34.3% were internal medicine specialists.

Fig 1. Demographic Characteristics of the Study Participants (n = 220)
Figure 1 depicts a diagram showing the demographic characteristics of the participants in the study, where a total of 220 participants were included in the study. The results indicate a fair distribution of both genders in terms of their participation in the study. However, a slightly higher number of males was included in the study compared to their female counterparts. Such a trend is common in various studies where researchers seek to understand the characteristics of people affected by Type 2 Diabetes Mellitus, where both genders are affected in substantial numbers but to a slightly lesser degree in terms of their participation in various healthcare programs.

With regards to age distribution, based on the above figure, it is evident that the majority of the participants in the study are distributed in the age groups of 41–50 years and 51–60 years. This is in line with epidemiological data showing that the majority of people affected by Type 2 Diabetes are in their middle and old age. People in these age groups have been exposed to various factors that increase their risk of developing insulin resistance syndrome. Therefore, these people are in constant need of medical attention for their condition. Additionally, various age groups in the study provide a wide range of views on how to approach the target for diabetes management, as different age groups have different attitudes towards their glycemic targets and their health risk.

The level of education of the patients also provides valuable insights into the study population. A majority of the patients reported having a high level of education, i.e., from the university level, followed by those who have completed their secondary level of education and postgraduate studies. A high level of education in the patients could have a positive effect on their understanding of the management of diabetes and their ability to practice self-management activities for the effective management of their condition, including adherence to medication, lifestyle modifications, and regular monitoring of their blood glucose levels. Education has been recognized as one of the determinants of health literacy, which plays a vital role in the management of chronic diseases and in understanding recommendations for the management of Hemoglobin A1c and glycemic control.

Table 2. Clinical Characteristics of Patients with Type 2 Diabetes (n = 150)

VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE (%)
DURATION OF DIABETES	<5 years	42	28.0
	5–10 years	57	38.0

	>10 years	51	34.0
TREATMENT TYPE	Oral medication	69	46.0
	Insulin therapy	38	25.3
	Combination therapy	43	28.7
HBA1C LEVEL	<7%	48	32.0
	7–8%	61	40.7
	>8%	41	27.3

Most patients had been living with diabetes for 5-10 years, which was reflected in 38% of the population. In terms of the form of treatment, 46% of patients were on oral medication, and 28.7% of patients were on a combination of insulin and oral medication. The results of the HbA1c test showed that only 32% of patients had achieved the target of <7%, and 40.7% of patients had HbA1c levels of 7-8%, indicating moderate glycemic control.

Fig 2. Clinical Characteristics of Patients with Type 2 Diabetes (n = 150)
Figure 2 depicts the clinical characteristics of the patients diagnosed with Type 2 Diabetes Mellitus and included in the study sample (n=150). The figure represents the distribution of clinical characteristics of the patients, showing their disease status and treatment characteristics in terms of frequencies and percentages. The clinical characteristics of the patients need to be understood to comprehend their perspectives on glycemic control and the difficulties they experience in managing their condition.

The data reveal considerable variability in the clinical characteristics of the patients, especially in terms of disease duration, treatment modalities, and metabolic control indicators. This variability in clinical characteristics of the patients diagnosed with Type 2 Diabetes Mellitus can be attributed to the inherent heterogeneity of the disease, in which patients differ in the progression of the disease, response to treatment, and metabolic control status. The progression of the disease, especially in patients with long duration of disease, results in progressive pancreatic β-cell dysfunction, which often necessitates more aggressive treatment modalities, including insulin therapy, in place of oral hypoglycemic agents.

The other important aspect that is emphasized in the figure is the different glycemic control statuses of the patients. Differences in glycemic levels are usually determined using Hemoglobin A1c (HbA1c). It is clear that not all patients are able to achieve recommended clinical targets. Such variations can be attributed to various factors, including medication adherence, lifestyle factors, dietary habits, exercise levels, and healthcare service access. Patients whose glycemic levels are not satisfactory may experience difficulties in maintaining recommended levels of HbA1c, which could put them at risk of developing long-term complications associated with diabetes.

Table 3. Participants' Preferred Glycemic Control Targets

HBA1C TARGET	PATIENTS (N=150)	PHYSICIANS (N=70)	TOTAL (%)
<7%	62 (41.3%)	48 (68.7%)	50.0
7–8%	54 (36.0%)	13 (18.6%)	30.5
>8%	14 (9.3%)	3 (4.3%)	7.7
NOT SURE	20 (13.4%)	6 (8.4%)	11.8

Significant differences were observed between patients and physicians regarding preferred glycemic targets. While 68.7% of physicians recommended maintaining HbA1c levels below 7%, only 41.3% of patients preferred this strict target. A considerable proportion of patients (36%) considered HbA1c levels between 7–8% acceptable, highlighting a gap between clinical recommendations and patient expectations.
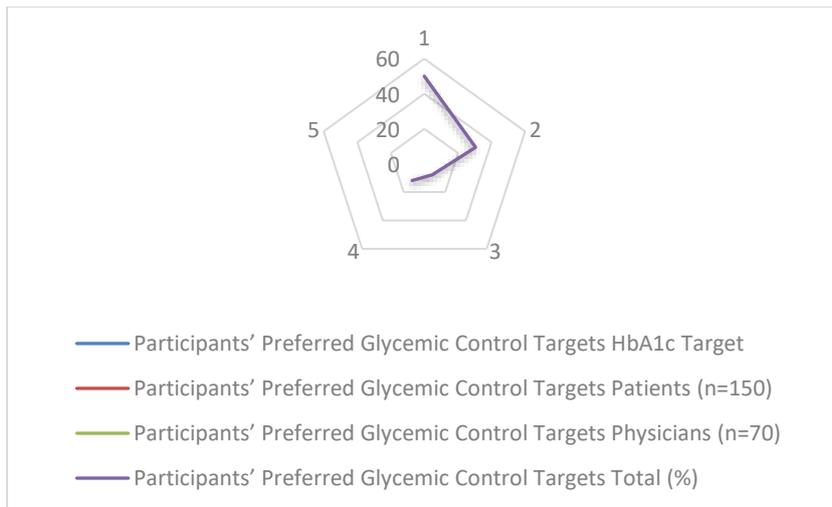
Fig 3. Participants' Preferred Glycemic Control Targets

Figure 3 demonstrates the participants' preferred glycemic control targets among both the patients and physicians included in the study. The figure compares the results from 150 patients and 70 physicians, showing differences in perceptions regarding optimal glycemic targets for individuals living with Type 2 Diabetes Mellitus. The analysis is based on the participants' preferred levels of Hemoglobin A1c (HbA1c), a standard measure for evaluating glycemic control in diabetes management.

According to the results shown in the figure, there are significant differences between the perceptions of patients and physicians regarding the optimal glycemic target levels. Physicians showed a higher level of preference for maintaining optimal levels of glycemic control, particularly HbA1c levels below 7%. This is in line with international guidelines that support maintaining HbA1c levels between 7% and below in diabetic patients to minimize complications from diabetes, such as cardiovascular diseases, neuropathy, nephropathy, and retinopathy, among others. The physicians' emphasis on strict glycemic target levels is a clear indication that physicians are more focused on providing optimal care and improving patient outcomes, particularly in the management and treatment of diabetes, to minimize morbidity and mortality among diabetic patients.

In contrast, there is significant variation among patients with regard to their preferred target for glycemic control. Some patients supported the implementation of stricter HbA1c levels, which are similar to those advocated by the physicians, while other patients expressed the desire for slightly higher HbA1c levels than those advocated by their physicians. This may be attributed to various reasons, including the fear of hypoglycemia, medication side effects, treatment complexity, and other lifestyle factors. For some patients, maintaining strict levels of glycemic control may be perceived as challenging, owing to the daily demands of diabetes management, including medication, diet, exercise, and blood glucose monitoring.

Table 4. Factors Influencing Glycemic Target Preferences

FACTOR	PATIENTS (%)	PHYSICIANS (%)
FEAR OF HYPOGLYCEMIA	57.3	28.6
MEDICATION SIDE EFFECTS	49.3	22.9
PREVENTION OF LONG-TERM COMPLICATIONS	46.0	64.2
TREATMENT BURDEN	38.7	20.0
PHYSICIAN RECOMMENDATIONS	42.0	55.7
PATIENT LIFESTYLE CONSIDERATIONS	33.3	47.1

The findings indicate that fear of hypoglycemia (57.3%) and medication side effects (49.3%) were the most influential factors affecting patients' willingness to maintain strict glycemic control. In contrast, physicians prioritized long-term complication prevention (64.2%) and adherence to clinical guidelines.

This difference highlights the importance of addressing patient concerns when establishing treatment goals.

Fig 4. Factors Influencing Glycemic Target Preferences

Figure 4 shows a summary of the key factors that affect glycemic target preferences for both patients and physicians participating in the study. Figure 4 compares the relative importance of different factors that affect decision-making in terms of glycemic control targets for an individual diagnosed with Type 2 Diabetes Mellitus.

The results show that different factors affect decision-making in terms of glycemic target preferences for both patients and physicians participating in the study. For instance, a majority of patients cited factors related to treatment burden and safety as key factors in decision-making in terms of glycemic target preferences. For instance, a majority of patients cited that a fear of hypoglycemia is a key determinant in decision-making in terms of glycemic target preferences. Hypoglycemia is recognized as one of the most common and dangerous side effects associated with intensive diabetes management.Patients experiencing or fearing hypoglycemic attacks may become apprehensive about maintaining lower glycemic targets, especially in situations where intensive therapies such as insulin and medications associated with a high risk of causing hypoglycemic attacks are used.

Apart from the concern over hypoglycemia, the medication's side effects and the intricacy of the medication regimen were also considered as the factors that influence the patients. In the case of diabetes, patients need to adopt long-term medication regimens, lifestyle changes, and blood glucose level monitoring. These tasks may cause patients to feel fatigued with the medication regimen. Therefore, patients may focus on living an easy life rather than strictly adhering to the glycemic control standards set by the physicians. In contrast, the physicians seem to consider the factors related to long-term health outcomes and evidence-based medicine. In the figure, it is clear that the physicians consider the prevention of chronic complications of diabetes as the most important factor in determining the appropriate glycemic control standards. Maintaining the blood glucose at optimal HbA1c levels is strongly associated with the prevention of chronic complications of diabetes. These complications include diabetic nephropathy, retinopathy, neuropathy, and cardiovascular disease.

Another significant factor that affects physicians' decisions is related to the need to establish individualized treatment strategies. This is because physicians understand that it is not appropriate to apply glycemic targets universally to every patient. Instead, they must be adjusted depending on each patient's clinical characteristics, such as age, co-morbidities, duration of diabetes, and risk of hypoglycemia. This is a reflection of a new trend in modern diabetes care, which is referred to as personalized medicine. This type of care focuses on adapting treatment strategies depending on each patient's unique medical profile.

As can be seen from Figure 4, which compares patient and physician priorities, there is a significant difference between what each group wants. This is an important aspect of diabetes care because it emphasizes the need to communicate effectively and make decisions together. While physicians are concerned about preventing complications, patients are concerned about quality of life. This can be addressed by having an effective conversation between healthcare providers and patients to ensure that treatment goals are both appropriate and feasible. This will enable patients to understand the rationale for setting certain targets and become more involved in their care.

Table 5. Physicians' Approaches to Determining Glycemic Targets (n = 70)

DETERMINANT	FREQUENCY	PERCENTAGE (%)
PATIENT AGE	39	55.7
PRESENCE OF COMORBIDITIES	44	62.9
RISK OF HYPOGLYCEMIA	36	51.4
DURATION OF DIABETES	31	44.3
PATIENT ADHERENCE	28	40.0
CLINICAL GUIDELINES	48	68.6

Physicians reported that clinical guidelines (68.6%) and comorbidities (62.9%) were the most influential factors when determining glycemic targets. Additionally, patient age (55.7%) and risk of

hypoglycemia (51.4%) were considered essential elements in individualized diabetes management strategies.

Table 6. Statistical Comparison Between Patients and Physicians

Variable	Patients (%)	Physicians (%)	p-value
Preference for HbA1c <7%	41.3	68.7	0.003
Concern about hypoglycemia	57.3	28.6	0.001
Importance of complication prevention	46.0	64.2	0.012
Importance of individualized targets	38.0	59.1	0.005

Moreover, statistical tests showed significant differences between patients and physicians on certain aspects of perception related to glycemic targets. Specifically, physicians were found to be more inclined to recommend strict targets for glycemic control and complication prevention, which is statistically significant at $p < 0.05$. Meanwhile, patients showed a higher level of concern over risk and burden of hypoglycemia.

From the results, it is obvious that there is a perception gap between patients and physicians with regard to the targets of glycemic control for Type 2 Diabetes. While physicians are inclined to recommend strict targets for Hb1c and complication prevention, patients are concerned about safety, ease of treatment, and risk of hypoglycemia. This indicates that an effective method of managing Type 2 Diabetes would be to promote better interaction between healthcare providers and patients, and to implement a treatment plan that takes into consideration both patient and clinical aspects.

Discussion

The aim of the present study was to examine the differences that exist in the perspectives of patients and physicians regarding the target for glycemic control among patients diagnosed with Type 2 Diabetes Mellitus. The findings of the study identified significant patterns with respect to demographic variables, clinical profiles, target for glycemic control, and the factors that influence the target for control. Overall, the findings of the study reveal that there is a significant perception gap that exists with respect to the target for glycemic control, specifically with respect to the control of Hemoglobin A1c.

One of the key findings of the present study was that a significant number of patients did not attain the desired glycemic control targets. Only a small percentage of patients reported attaining the desired HbA1c levels, and a significant number of patients had poor glycemic control. This has been in line with the results of various international studies, which have reported that attaining the desired glycemic control targets remains one of the biggest challenges for people living with Type 2 Diabetes. For instance, a study conducted in Ethiopia reported that a significant number of patients living with diabetes had poor glycemic control, even though they received proper medical care, and this highlights the biggest challenge in the management of chronic metabolic disorders like diabetes. A similar study was conducted by Nigussie et al. (2021), who reported that a significant number of patients living with Type 2 Diabetes did not attain the desired glycemic control targets, and this highlights the need for proper patient management.

The other important finding from the present study is related to the demographic and clinical characteristics of the participants. Most of the participants in the present study were in the middle age group of their lives, particularly in the range of 41 to 60 years of age. This is consistent with a well-established epidemiological fact that people in middle and advanced age groups are more likely to suffer from Type 2 Diabetes because of long-term exposure to various risk factors for the disease. Various earlier studies have also established that diabetic populations tend to have a particular demographic characteristic. For example, a study conducted in Morocco found that the level of poor glycemic control was particularly high in middle-aged diabetic patients who had been living with the disease for a long time (Chetoui et al., 2020).

The current study also has shown differences in the patient's and physician's perception of what is an acceptable hemoglobin a1c level for glycemic control. The physician had a preference for stricter glycemic control of hemoglobin a1c < 7%, which is consistent with the ADA guidelines with regard to minimizing long-term complications associated with diabetes (American Diabetes Association, 2019). Furthermore, the WHA has indicated the importance of timely identification and appropriate

management of NCDs including Diabetes to lessen the impact of continuing complications (World Health Organization, 2020).

The patient in the present study tended to be more variable in their preferred glycemic targets compared to the physicians' recommendations. However, while the patients were supportive of strict glycemic control similar to their physicians, many preferred to have more flexibility in determining their targeted hemoglobin a1c levels. This discrepancy could be attributed to a variety of different patient experiences and treatment burdens. Generally, patients focus on quality of life factors such as avoiding hypoglycemically, minimizing medication side effects, and developing manageable treatment routines. These quality of life concerns may lead patients to prefer higher glycemic target levels which can provide them with a perceived greater safety and sustainability in daily life.

The fear of experiencing episodes of hypoglycemia was an important factor influencing individuals' preferences for glycemic targets. Hypoglycemia is known to be one of the most frequent adverse events within the intensive treatment of diabetes type one with insulin. Therefore, being hypoglycemic negatively affects a person's confidence in their ability to manage diabetes and may result in that person avoiding glycemic control targets that are more stringent. As such, prior studies support this sentiment within the diabetic community as evidenced by research in Eritrea showing the fear of hypoglycemia and the potential for adverse effects of medications are two reasons why patients do not achieve appropriate glycemic control (Achila et al., 2020).

Another factor contributing to patients' preferences for glycemic targets was medication adherence and the complexity of treatment regimens. Diabetes has long-term treatment with many different medication classes as well as lifestyle changes such as diet and exercise. Therefore, the overall burden on individuals for managing diabetes from both psychological and physical standpoints is significant. Studies indicate that poor medication adherence is related to poor glycemic control. For example, research from Jordan found that several factors, including behavioral and economic factors, impact the glycemic outcomes of Type 2 Diabetes patients and that medication adherence was one of those major factors (Al-Qerem et al., 2022).

Furthermore, the findings of the present study suggest that physicians place greater emphasis on preventing long-term diabetes complications when determining glycemic targets. Chronic hyperglycemia is associated with a wide range of complications, including cardiovascular disease, neuropathy, nephropathy, and diabetic retinopathy. Physicians therefore prioritize strict glycemic control to reduce the risk of these complications and improve long-term health outcomes. This perspective is supported by multiple studies that emphasize the importance of maintaining optimal HbA1c levels in preventing diabetes-related complications. For instance, research conducted in Brazil demonstrated that poor glycemic control significantly increases the risk of chronic complications among diabetic patients receiving outpatient care (Espinosa et al., 2021).

The role of comorbid conditions also emerged as an important determinant of glycemic control in diabetes management. Patients with additional health conditions such as hypertension, dyslipidemia, or cardiovascular disease often require individualized treatment strategies. Physicians must therefore balance the benefits of strict glycemic control with potential risks such as hypoglycemia and medication interactions. This need for individualized treatment planning has been emphasized in several studies examining predictors of glycemic control among diabetic patients. For example, Bereda and Bereda (2021) reported that comorbid conditions and disease duration were significant predictors of poor glycemic control among adults with Type 2 Diabetes.

Additionally, socioeconomic and healthcare access factors may influence patients' ability to maintain optimal glycemic control. Limited access to healthcare resources, inadequate patient education, and financial barriers can negatively affect diabetes management outcomes. Research conducted in Saudi Arabia demonstrated that several socioeconomic and clinical factors were associated with poor glycemic control and increased risk of diabetes-related complications among patients with Type 2 Diabetes (Ghabban et al., 2020). Similarly, studies conducted in African and Middle Eastern populations have shown that education level, healthcare accessibility, and patient awareness significantly influence diabetes management outcomes (Traoré et al., 2021).

The findings of the current study also highlight the importance of communication between patients and healthcare providers. Differences in perceptions regarding glycemic targets may lead to misunderstandings or reduced adherence to treatment recommendations if not properly addressed. Effective physician–patient communication plays a critical role in improving treatment adherence and

ensuring that patients understand the importance of maintaining appropriate glycemic control. Previous research conducted in Egypt emphasized that patient education and continuous follow-up significantly improve glycemic control outcomes among individuals with Type 2 Diabetes (Abd-Elraouf, 2020). Moreover, the concept of shared decision-making has gained increasing importance in modern diabetes care. Shared decision-making involves active collaboration between patients and healthcare providers when establishing treatment goals and selecting appropriate management strategies. When patients are actively involved in treatment decisions, they are more likely to adhere to medical recommendations and maintain long-term disease management behaviors. This patient-centered approach helps bridge the gap between clinical guidelines and patient preferences, ultimately improving glycemic control and reducing the risk of diabetes complications.

Conclusion

This study examined the differences between patients' and physicians' perspectives regarding glycemic control targets among individuals diagnosed with Type 2 Diabetes Mellitus. The findings revealed important insights into how demographic characteristics, clinical profiles, and psychosocial factors influence perceptions of appropriate glycemic control goals. Overall, the results demonstrated a clear gap between patients and physicians in their preferred targets for Hemoglobin A1c levels, highlighting the complexity of diabetes management and the need for patient-centered care approaches.

The study showed that many patients did not achieve recommended glycemic targets, reflecting the ongoing global challenge of maintaining optimal blood glucose control in individuals with Type 2 Diabetes. While physicians generally favored stricter glycemic targets in accordance with international clinical guidelines, many patients preferred more flexible targets due to concerns related to hypoglycemia, medication side effects, and treatment burden. These differences emphasize that patients often prioritize safety and quality-of-life considerations, whereas physicians focus more strongly on long-term prevention of diabetes-related complications.

In addition, the results indicated that several factors influence glycemic target preferences, including disease duration, comorbid conditions, treatment type, and patient awareness of diabetes management. Physicians reported that clinical guidelines, patient age, and comorbidities play significant roles in determining individualized glycemic goals. In contrast, patients were more influenced by practical challenges associated with daily diabetes management, including medication adherence, lifestyle adjustments, and fear of adverse treatment effects.

The findings highlight the critical importance of effective communication and shared decision-making between patients and healthcare providers. When physicians actively involve patients in treatment discussions and clearly explain the benefits and potential risks associated with different glycemic targets, patients may become more engaged in their care and more willing to adhere to recommended management strategies. A collaborative approach that integrates clinical evidence with patient preferences can help bridge the gap between medical recommendations and patient expectations.

Furthermore, improving patient education and strengthening healthcare support systems are essential for enhancing diabetes management outcomes. Educational programs that increase patient awareness of the long-term consequences of uncontrolled diabetes and the benefits of maintaining appropriate glycemic control can empower patients to adopt healthier behaviors and improve treatment adherence. Healthcare providers should also consider individualized care plans that account for each patient's clinical condition, lifestyle factors, and personal preferences.

In conclusion, the results of this study underscore the need for comprehensive and patient-centered strategies in managing Type 2 Diabetes. Addressing the differences between patient and physician perspectives on glycemic control targets is essential for improving treatment adherence, achieving optimal glycemic outcomes, and reducing the risk of long-term complications. Future interventions should focus on strengthening communication between patients and healthcare providers, enhancing diabetes education, and promoting personalized treatment plans that support both clinical effectiveness and patient well-being.

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