

PATIENT-LEVEL MISCONCEPTIONS AS DETERMINANTS OF ORAL HYPOGLYCEMIC AGENT USE: A CROSS-SECTIONAL ANALYSIS

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ABSTRACT

Objective: To examine patient-level misconceptions related to oral hypoglycemic agent use and their association with treatment patterns using a cross-sectional analysis of outpatient data.

Methods: This cross-sectional study used an outpatient drug utilization survey involving adults with type 2 diabetes mellitus receiving OHAs, either alone or in combination with insulin. Patient-level misconceptions were inferred from reported medication-related behaviors that deviated from evidence-based diabetes management principles. Descriptive analyses were performed to assess the prevalence of identified misconception domains and their distribution across treatment patterns.

Results: Among 59 patients included in the analysis, treatment permanence misconceptions were observed in 27.1% of participants, while safety-related misconceptions were identified in 18.6%. Treatment permanence misconceptions were more common among patients receiving oral hypoglycemic agents alone compared with those receiving combined OHA–insulin therapy. Safety-related misconceptions were present in both treatment groups, but were more frequent among patients on OHA monotherapy.

Conclusion: Patient-level misconceptions regarding oral hypoglycemic agent use are common and vary according to treatment exposure. Addressing these misconceptions through patient-centered education and consistent counselling may be essential for promoting rational and sustained use of oral hypoglycemic agents in routine diabetes care.

Keywords: Oral hypoglycemic agents, Type 2 diabetes mellitus, Patient misconceptions, Drug utilization, Medication adherence

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INTRODUCTION

Type 2 diabetes mellitus is a chronic metabolic condition that continues to pose a major public health challenge worldwide [1]. Oral hypoglycemic agents (OHAs) remain the foundation of pharmacological management for most patients, particularly in outpatient settings, due to their effectiveness, affordability, and ease of administration [2]. While considerable attention has been given to prescribing patterns and access to medications, less focus has been placed on how patients understand and use these medicines in their daily lives [3].

Medication use in chronic diseases is shaped not only by clinical decisions but also by patient beliefs, expectations, and lived experiences [4]. In diabetes care, misconceptions such as stopping medication once blood glucose levels appear normal, concerns about long-term safety, and uncertainty about the necessity of continuous treatment are commonly encountered [5]. These beliefs can lead to inconsistent adherence, unadvised treatment discontinuation, and delays in treatment optimization, even when effective therapies are readily available [6].

Previous research has explored patient beliefs through qualitative studies and knowledge–attitude–practice surveys. However, misconceptions are often discussed descriptively and are rarely examined as measurable behavioral determinants within real-world drug utilization data [7, 8]. Examination of how patient-reported behaviors reflect underlying misconceptions and how these behaviors coexist with specific treatment patterns is needed for understanding patient level misconceptions. This is particularly important in settings where access to medicines does not necessarily translate into rational or sustained use. In such contexts, suboptimal outcomes may persist despite adequate pharmacological options, highlighting the need to consider behavioral and perceptual factors alongside clinical management.

Against this background, the present study aimed to examine patient-level misconceptions related to oral hypoglycemic agent use using a cross-sectional analysis of outpatient data. By operationalizing misconceptions as behavior-derived constructs, this study seeks to provide insight into how patient beliefs influence real-world patterns of OHA use and to inform patient-centered approaches to diabetes care.

MATERIALS AND METHODS

This cross-sectional study employed an outpatient survey among patients with type 2 diabetes mellitus. The analysis addressed a distinct research objective by examining patient-level misconceptions related to the use of oral hypoglycemic agents.

A structured questionnaire was administered to adult outpatients receiving OHAs, either alone or in combination with insulin therapy. The questionnaire collected information on sociodemographic characteristics, treatment patterns, and patient-reported medication-related beliefs and behaviors. Adult patients with a confirmed diagnosis of type 2 diabetes mellitus who were receiving at least one oral hypoglycemic agent at the time of data collection were included in the analysis. Patients receiving OHA monotherapy as well as those receiving OHAs alongside insulin were considered. Records with incomplete responses to key medication-related behavior variables were excluded to maintain consistency in analysis.

Patient-level misconceptions were not directly assessed as standalone questionnaire items. Instead, misconceptions were inferred from patient-reported behaviors that deviated from evidence-based principles of diabetes management. Two misconception domains could be reliably operationalized from the available data. Treatment permanence misconceptions were identified among patients who reported stopping their medication when they felt better or perceived their blood glucose levels to be

controlled. Safety-related misconceptions were identified among patients who reported discontinuing medication when they felt worse or experienced perceived side effects without professional consultation. Each misconception was coded as present or absent.

The primary outcome was the prevalence of identified misconception domains. Secondary outcomes included the distribution of misconceptions across demographic characteristics and treatment patterns, specifically OHA monotherapy versus combined OHA–insulin therapy. Descriptive statistics were used to summarize findings, with categorical variables presented as frequencies and percentages. No inferential analyses were performed.

RESULTS

A total of 59 patients with type 2 diabetes mellitus receiving oral hypoglycemic agents were included in the analysis. The sociodemographic profile and treatment characteristics of the study population are summarized in table 1. The majority of participants were aged 60 years or older (71.2%), and slightly more than half were female (52.5%). Most patients resided in panchayat (rural) areas (71.2%). With respect to treatment patterns, 35 patients (59.3%) were receiving oral hypoglycemic agents alone, while 24 patients (40.7%) were receiving oral hypoglycemic agents in combination with insulin therapy.

Table 1: Sociodemographic and treatment characteristics of the study population (N = 59)

Characteristic	Category	n (%)
Age group (years)	<40	0 (0.0)
	40–59	17 (28.8)
	≥60	42 (71.2)
Sex	Female	31 (52.5)
	Male	28 (47.5)
Place of residence	Panchayat (rural)	42 (71.2)
	Corporation	11 (18.6)
	Municipality	6 (10.2)
Education level	Illiterate/half-illiterate	5 (8.5)
	Primary school	14 (23.7)
	Middle school	12 (20.3)
	High school/technical	25 (42.4)
	College or above	3 (5.1)
Treatment pattern	OHA only	35 (59.3)
	OHA+insulin	24 (40.7)

Prevalence of patient-level misconceptions

The prevalence of patient-level misconceptions related to oral hypoglycemic agent use is presented in table 2, which summarizes misconceptions inferred from patient-reported medication-related behaviors. Treatment permanence misconceptions, defined as

discontinuation of medication when patients felt better or perceived their blood glucose levels to be controlled, were identified in 16 patients (27.1%). Safety-related misconceptions, reflected by discontinuation of medication when patients felt worse or experienced perceived side effects, were reported by 11 patients (18.6%).

Table 2: Prevalence of patient-level misconceptions related to oral hypoglycemic agent use (N = 59)

Misconception domain	Operational definition (dataset-derived)	n (%)
Treatment permanence misconception	Discontinuation of diabetes medication when feeling better or perceiving blood glucose control	16 (27.1)
Safety misconception	Discontinuation of diabetes medication when feeling worse or experiencing perceived side effects	11 (18.6)

Distribution of misconceptions by treatment pattern

The distribution of patient-level misconceptions stratified by treatment pattern is shown in table 3. Treatment permanence misconceptions were more frequently observed among patients receiving oral hypoglycemic agents alone, reported by 13 patients

(37.1%), compared with those receiving combined oral hypoglycemic agent–insulin therapy, among whom 3 patients (12.5%) reported this behavior. Safety-related misconceptions were observed in both treatment groups but were again more common among patients receiving oral hypoglycemic agent monotherapy (22.9%) than among those receiving combined therapy (12.5%).

Table 3: Distribution of patient-level misconceptions by treatment pattern

Misconception domain	OHA only (n = 35) n (%)	OHA+insulin (n = 24) n (%)
Treatment permanence misconception	13 (37.1)	3 (12.5)
Safety misconception	8 (22.9)	3 (12.5)

Overall, these findings indicate that patient-level misconceptions related to oral hypoglycemic agent use are common and vary according to treatment exposure, highlighting their potential role in shaping real-world patterns of diabetes medication use.

DISCUSSION

This cross-sectional analysis demonstrates that patient-level misconceptions are common among adults receiving oral hypoglycemic agents for type 2 diabetes mellitus. Despite being actively engaged in pharmacological treatment, a substantial proportion of patients reported behaviors reflecting

misunderstandings about the role and safety of their medications. These findings highlight patient beliefs as important behavioral determinants of real-world medication use [9].

Misconceptions related to treatment permanence were particularly prominent. Discontinuing medication when symptoms improve or glucose levels appear controlled reflects a misunderstanding of

diabetes as a condition requiring intermittent rather than continuous management. Such behaviors may contribute to fluctuating adherence and undermine long-term disease control, even in the presence of effective therapies [10].

Safety-related misconceptions were also notable. Patients who discontinued medication due to perceived adverse effects without consultation may be acting out of concern rather than non-compliance, underscoring the need for better communication regarding expected side effects and their management. These findings emphasize that unadvised discontinuation is often rooted in fear or uncertainty rather than deliberate neglect of treatment [11, 12].

Differences in misconception patterns between treatment groups suggest that patients receiving insulin may have greater engagement with healthcare services and more frequent counselling, which could mitigate certain misconceptions. Importantly, misconceptions were not limited to a specific subgroup, indicating that patient education remains relevant across treatment stages.

This study benefits from the use of real-world outpatient data and a behavior-based approach to identifying misconceptions. However, its cross-sectional nature limits the ability to capture all possible misconception domains or establish causal relationships. Despite these limitations, the findings provide valuable insight into how patient beliefs shape medication use.

CONCLUSION

This cross-sectional analysis highlights that patient-level misconceptions related to oral hypoglycemic agent use are common among adults receiving treatment for type 2 diabetes mellitus. A notable proportion of patients reported discontinuing medication either when they perceived improvement or when they experienced discomfort after treatment, reflecting misunderstandings about the chronic nature of diabetes therapy and concerns regarding medication safety. The presence of these behaviors across both treatment groups and sexes underscores that misconceptions persist even among patients who are actively engaged with healthcare services.

Addressing such misconceptions is essential for promoting rational and sustained use of oral hypoglycemic agents. Patient-centered education, clear communication regarding treatment expectations, and ongoing counselling may help bridge gaps between prescribed therapy and real-world medication use. Incorporating discussions around common misconceptions into routine diabetes care could support better adherence and contribute to more effective long-term disease management.

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AUTHORS CONTRIBUTIONS

All authors have contributed equally

CONFLICTS OF INTERESTS

Declared none

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