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Short communication

Assessment of medication adherence, disease knowledge, and self-monitoring behaviors in patients with type 2 diabetes

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Introduction

Type 2 diabetes mellitus is a chronic metabolic disorder with increasing global prevalence and represents a major public health challenge due to its associated complications and healthcare burden (IDF Diabetes Atlas, 2025; Nascimento et al., 2025). Effective disease management relies on long-term pharmacotherapy combined with patient adherence and self-management behaviors, which are essential for achieving adequate glycemic control (Nascimento et al., 2025).

Medication non-adherence remains highly prevalent among patients with diabetes and is influenced by multiple factors, including forgetfulness, complex treatment regimens, and insufficient disease-related knowledge (Polonsky and Henry, 2016). Inadequate understanding of target glycemic values and poor self-monitoring practices further contribute to suboptimal disease control and increased risk of acute and chronic complications (Al Assaf et al., 2022; Polonsky and Henry, 2016).

Community pharmacists play an important role in supporting patients through education, counselling, and monitoring of therapy adherence, thereby contributing to improved diabetes outcomes (Al Assaf et al., 2022).

The aim of the study was to assess medication adherence, knowledge, and self-monitoring practices among patients with type 2 diabetes in a community pharmacy setting.

Materials and methods

An observational cross-sectional study was conducted in May 2026 among patients with type 2 diabetes mellitus. Adults aged ≥18 years with a diabetes duration of at least 3 months, receiving oral antidiabetic therapy for more than 3 months, and willing to participate were eligible for inclusion. Patients with other types of diabetes, pregnancy, severe comorbidities, mental disorders, or communication difficulties were excluded. Data were collected using a structured questionnaire. Ethical approval for the study was obtained from the Ethics Committee of the Faculty of Pharmacy, Ss. Cyril and Methodius University in Skopje, North Macedonia (Approval No. 02-284/3, issued on 29 April 2024). Data were entered into Microsoft Excel and analyzed using appropriate statistical software.

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Results and discussion

Fifteen eligible patients were approached, and all agreed to participate after receiving study information and providing written informed consent. Questionnaire administration was conducted by the community pharmacist, who confirmed participants' understanding of the study objectives.

Analysis of practices related to medication adherence revealed that 33.3% of the surveyed patients reported always taking their medications exactly as prescribed. Furthermore, 26.7% and 20.0% of respondents indicated that they adhered to their prescribed regimen most of the time and sometimes, respectively. Among patients reporting irregular medication use, the most frequently cited reason was forgetfulness (37.5%), followed by the complexity of the treatment regimen (25.0%). An additional 25.0% of respondents reported non-adherence due to the perception that the medication was ineffective. The majority of patients (80.0%) obtained their medications independently. Furthermore, 26.7% of the respondents used insulin, and all insulin users reported being familiar with the correct administration procedure.

Regarding the patients' knowledge and educational needs, the majority of respondents (57,1%) reported only a partial understanding of their disease. In contrast, 21.4% indicated a very good understanding of their condition, while an equal proportion (21.4%) demonstrated insufficient disease-related knowledge. The majority of patients (73.3%) have received training in terms of self-measurement, dietary plan/management and appropriate medication adherence. However, 26.7% of the total number of respondents stated that they had not received such education.

The assessment of self-monitoring practices revealed that 86.7% of patients owned a glucometer. However, only 53.3% were aware of their target glycemic values, including fasting blood glucose, postprandial blood glucose, and HbA1c. Regarding glucose self-monitoring, 46.7% of respondents reported regularly measuring their blood glucose using a self-monitoring device, whereas 40.0% performed self-monitoring only rarely during the course of a week. The majority of respondents (66.7%) do not know how to recognize emergency situations related to symptoms of hypoglycemia and hyperglycemia.

Conclusion

In conclusion, the study indicates suboptimal medication adherence among patients with type 2 diabetes, with forgetfulness and treatment complexity identified as the main barriers. Although most patients obtain their medications independently and a proportion demonstrate correct insulin use, overall disease knowledge remains moderate to insufficient in a considerable number of participants. While the majority have received some form of diabetes-related education, gaps in understanding target glycemic values and recognizing acute hypo- and hyperglycaemic events were evident. Self-monitoring practices were present in most patients; however, they were not consistently applied, and a substantial proportion lacked adequate awareness of proper disease monitoring. These findings highlight the need for strengthened patient education and structured pharmaceutical care interventions to improve diabetes self-management outcomes.

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