

Pharmacists as Stewards in Diabetes Mellitus: Current and Future Roles in Pakistan

Majid Khan*

Faculty of Pharmaceutical Sciences, Abasyn University, Peshawar, Khyber Pakhtunkhwa, PAKISTAN.

DEAR-EDITOR-IN-CHIEF

The global prevalence of diabetes mellitus is escalating daily (Khan, 2024; Khan *et al.*, 2025). In Pakistan, the high costs of therapy and diagnosis approximately 11,580 PKR annually and 965 PKR/month, with 46% of these costs attributed to medications and 32% to laboratory investigations consume about 18% of a family's income (Nasiri *et al.*, 2019). Coupled with the complications of diabetes mellitus and oxidative stress (Naz *et al.*, 2024) and in-turn significant noncompliance rates (Khan, 2022), these factors necessitate recognizing pharmacists as key stewards in diabetes management.

Stewardship involves the responsible management and utilization of resources. A steward is someone who manages these resources effectively (Jackevicius, 2023; Nasiri *et al.*, 2019). Pakistan's high diabetes prevalence underscores the need for pharmacist involvement in prevention, early detection, and management of diabetes and its comorbidities (Khan, 2024). Historically, pharmacists have played crucial roles in antimicrobial, opioid, and anticoagulant stewardship. Extending this concept to diabetes mellitus, though not widely addressed in literature, could significantly impact patient care. Evidence from the Canadian Medicine Safety Institute indicates that insulin, among other medications, has been linked to harm incidents (Jackevicius, 2023). Thus, pharmacists, as medication experts, should lead diabetes stewardship efforts (Khan, 2020a; Khan, 2020b).

In the past, diabetes education was introduced in rural hospitals in the United States in 2006. Initially, pharmacists provided diabetes education for a few hours weekly, later transitioning to more extensive pharmacy services. This intervention aimed to assess the impact of pharmacist-led education on A1C levels and patient engagement. A 1% reduction in A1C can lower the risk of microvascular complications by 35%. The study found that pharmacist interventions improved glycemic control and access to education, potentially reducing complications and diabetes-related costs (Meade *et al.*, 2018). One study

demonstrated that pharmacists have a notable effect on reducing HbA_{1C} levels (Jackevicius, 2023), as illustrated in Figure 1.

Despite the global lack of recognition for pharmacist stewardship in diabetes, it is crucial to integrate this role in Pakistan. Key roles for pharmacists as stewards in diabetes management should include:

Awareness and Education

Pharmacists should provide lifestyle modification education, including diet and exercise, and enable patients to manage their conditions at home (Litvak *et al.*, 2023).

Referral to Specialists

Stewards should ensure timely referrals to diabetologists to avoid diagnostic confusion.

Home Counseling and Online Care

Pharmacists should offer online education, including training on insulin devices and glucometers. Proper use of glucometers is essential for accurate self-monitoring of blood glucose and adherence to the ABC criteria (A1C, blood glucose, and blood pressure) to manage cholesterol and BMI. Additionally, they should educate patients on managing hypoglycemia and hyperglycemia (Khan, 2024; Khan *et al.*, 2022).

Treatment Triad

Pharmacists should emphasize the (MED) approach Medication optimization, Exercise (at least 30 min daily), and Diet modifications (Khan, 2022; Khan *et al.*, 2020; Khan *et al.*, 2022). This comprehensive role is depicted in Figure 2.

As technology advances and medication dispensing become more automated, it is vital to enhance pharmacists' roles as clinicians

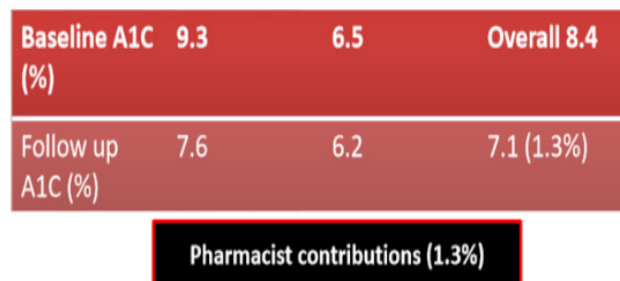


Figure 1: Impact of Pharmacists on HbA_{1C} reduction.



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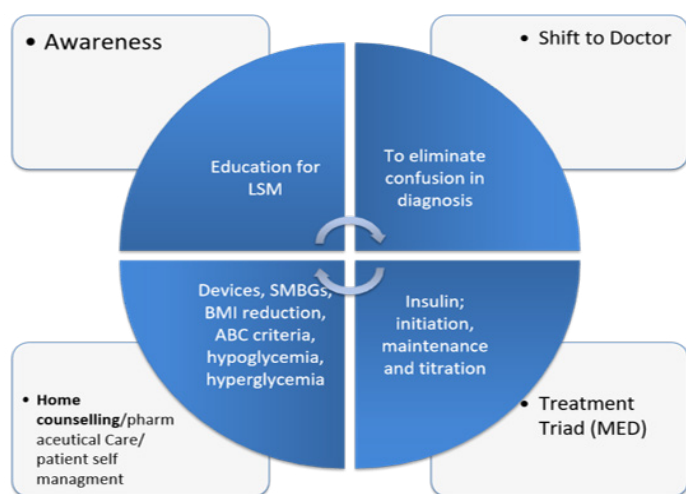


Figure 2: The Future role of Pharmacists as Stewards in diabetes mellitus.

and medication stewards. This shift will empower pharmacists to be recognized not only as medication experts but also as crucial stewards in diabetes care (Jackevicius, 2023).

CONCLUSION

In conclusion, the high prevalence of diabetes and adherence challenges in Pakistan highlight the need for pharmacists to be acknowledged globally as frontline stewards in diabetes management. Their involvement is essential to address and overcome the diabetes epidemic effectively.

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ABBREVIATIONS

A1C: Glycated Hemoglobin; **ABC:** A1C, Blood Glucose, and Blood Pressure Criteria; **BMI:** Body Mass Index; **COVID-19:** Coronavirus Disease 2019; **HbA_{1c}:** Hemoglobin A_{1c}; **MED:** Medication, Exercise, and Diet; **PKR:** Pakistani Rupee.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Correspondence:

Majid Khan

Lecturer, Faculty of Pharmaceutical Sciences, Abasyn University, Peshawar, Khyber Pakhtunkhwa, PAKISTAN.
Email: majidkhanpiran@gmail.com

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