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ORIGINAL ARTICLE

Glibenclamide prescription services profile in pharmacies of the Tapung Hilir District

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ABSTRACT

Prescription dispensing in pharmacies involves two key stages: screening and medication preparation. Screening, conducted by the pharmacist, covers administrative requirements, pharmaceutical suitability, and clinical considerations. Medication preparation includes compounding, labeling, packaging, dispensing, counseling, and monitoring. The overarching goal is to ensure that the medication prescribed is accurately and safely delivered to the patient. This study assessed the prescription service quality for glibenclamide in Tapung Hilir pharmacies. Ninety pharmacies were randomly sampled, and data were collected using a simulated patient approach, where researchers acted as patients' family members seeking glibenclamide. The instruments employed—prescription, scenario, protocol, and checklist—were validated for reliability. Results showed that 85 pharmacies (94.4%) dispensed the prescribed medication. However, patient information gathering was minimal: only 7.1% asked for the recipient's identity, 18.8% for the patient's address, and fewer than 5% inquired about prior medication use or understanding of administration. Critical clinical data such as patient age, symptomatology, therapy goals, concurrent medications, and allergy history were generally not obtained. On average, pharmacies asked only 0.4 out of 13 patient assessment questions. Regarding medication counseling, the frequency of drug use was explained by 42.4% of pharmacies, while other key information—indication, dose, side effects, treatment duration, and storage—was rarely provided. On average, only 1.2 out of 16 drug information items were communicated. Labels were provided by 65.9% of pharmacies, with only one using a distinguishable blue label. In conclusion, the involvement of pharmacy staff in the comprehensive provision of prescription services for glibenclamide remains limited in Tapung Hilir. Enhancement in patient assessment and information delivery is urgently needed to improve medication safety and effectiveness.

Keywords: prescription service, glibenclamide, patient assessment, drug information

Introduction

Advancements in science and technology, along with rising educational and socioeconomic levels, have shifted the focus of pharmaceutical services from solely dispensing medication to a patient-centered approach known as pharmaceutical care.[1] According to the Indonesian Ministry of Health Regulation No. 1027 of 2004, pharmaceutical care is defined as a direct professional responsibility of pharmacists aimed at improving patient quality of life.[2] This paradigm shift requires pharmacists to enhance their knowledge, skills, and behaviors to engage in effective patient interactions.[3] The American Pharmaceutical Association's Pharmacist Practice Activity Classification (PPAC) further outlines key pharmacist tasks involving direct patient engagement, including interviewing, education, counseling, and information provision.[4]

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A critical component of pharmaceutical care is prescription service in community pharmacies, which involves two stages: prescription screening (administrative, pharmaceutical, and clinical evaluations) and medication preparation (including compounding, labeling, packaging, dispensing, counseling, and monitoring).[5] The objective is to ensure that medications are appropriately dispensed both administratively and clinically. Collecting patient information—such as demographics, disease status, allergies, and concurrent medications—is essential to prevent drug therapy problems and tailor appropriate drug information.[6]

Based on data from the International Diabetes Federation (IDF), Indonesia's national diabetes rate saw a significant increase. The prevalence was estimated at 6.2% in 2019, but it surged to 10.8% by 2021. This rapid rise has positioned Indonesia within the top 10 nations grappling with the highest rates of Type 2 Diabetes Mellitus (T2DM) and experiencing one of the sharpest upturns in the condition.[7] In Riau province, T2DM ranks seventh among the top ten diseases, with 90% of cases being T2DM.[8] Glibenclamide, a sulfonylurea, remains a first-line oral antidiabetic drug that requires correct usage to maximize therapeutic efficacy and minimize adverse effects, such as hypoglycemia.[9,10]

Effective pharmaceutical care, including proper patient assessment, labeling, and drug information provision, is vital to avoid complications and improve therapeutic outcomes.[11] This study employs the simulated patient method—a validated approach to objectively assess real-world pharmacy practices—to evaluate prescription services of glibenclamide in Tapung Hilir, an area with a significant diabetes burden.

Method

This study employed a descriptive research design aimed at providing a detailed description, explanation, and validation of the investigated phenomena. The research was conducted across multiple pharmacies located in the Tapung Hilir region from May to July 2025. The study population comprised all pharmacies operating within Tapung Hilir, with pharmacy staff serving as the target population. The sample selection criteria were defined as follows: (a) Inclusion criteria: pharmacies located in the Tapung Hilir area; (b) Exclusion criteria: pharmacies used for pilot visits, pharmacies that were no longer operational, and pharmacies where the staff were aware of being observed by researchers.

Data were collected using the simulated patient method. This approach involved a trained researcher acting as a patient to visit the pharmacies and observe the behavior of pharmacists or pharmacy staff according to a standardized scenario.[12] Collected data were analyzed descriptively to provide an objective overview of the studied conditions. Results from the checklist were recorded and frequencies were calculated as percentages (%). The processed data were then presented using graphs, charts, and tables to illustrate the percentage of conformity of drug information—specifically regarding glibenclamide prescriptions—based on predetermined variables.

Results

This study aims to evaluate the quality of prescription services and medication information in pharmacies located in the Tapung Hilir area. The research sample consisted of 90 pharmacies selected through simple random sampling. During data collection, eight pharmacies did not meet the inclusion criteria, necessitating resampling to maintain the sample size of 90 pharmacies. Excluded pharmacies included one used for a pilot visit, five that were no longer operational, one whose staff became aware of the researchers' visit, and one located outside the designated study area.

Availability of medication and compliance in prescription services

Among the 90 pharmacies sampled, 85 pharmacies (94.4%) stocked the prescribed medication, while the remaining five pharmacies did not have the medication available. This finding indicates that the availability of glibenclamide remains an issue, despite the fact that it is included in the National Essential Medicines List (DOEN) and should be consistently available. Of the 85 pharmacies that provided the medication, 33 pharmacies returned the prescriptions to the researchers. This practice contradicts the Government Regulation (Minister of Health Decree No. 280/Menkes/SK/V/1981), which mandates that pharmacies retain prescriptions for a minimum of three years for audit purposes.

One pharmacy dispensed an incorrect quantity of medication due to limited stock but did not issue a prescription amendment. This noncompliance poses a potential risk to patients, as it may result in interrupted therapy, thereby compromising optimal therapeutic outcomes and possibly leading to disease progression. It

is plausible that the pharmacy staff regarded glibenclamide as an over-the-counter medication, despite its status as prescription-only.

Table 1. Information collected from patients

Questions asked to patients	Number of pharmacies	
	Yes n (%)	No n (%)
For whom is the medication intended?	6 (7,1%)	79 (92,9%)
Patient's address	16 (18,8%)	69 (81,2%)
Patient's phone number	4 (4,7%)	81(95,3%)
Patient's age	0 (0%)	85 (100%)
Information provided by the prescribing physician	1 (1,2%)	84 (98,8%)
What symptoms have appeared?	0 (0%)	85 (100%)
Duration of symptoms	0 (0%)	85 (100%)
Actions already taken	0 (0%)	85 (100%)
Previous use of the medication	2 (2,4%)	83 (97,6%)
Knowledge of how to use the medication	1 (1,2%)	84 (98,8%)
Awareness of the therapeutic purpose	0 (0%)	85 (100%)
Concurrent use of other medications	0 (0%)	85 (100%)
History of allergies	0(0%)	(100%)

Patient information gathering and medication information provision

The study revealed a low level of patient information collection. Of the 13 recommended questions to be asked, pharmacies in the sample queried an average of only 0.4 items. Crucial questions such as patient age, presenting symptoms, allergy history, and therapeutic goals were not asked by any of the 85 pharmacies dispensing prescriptions. This lack of initial interaction between pharmacy staff and patients suggests inadequate collection of pertinent information necessary for pharmaceutical care services.

Table 2. Average number of questions asked by 85 pharmacies dispensing medication

Number of questions asked to patients (items)	Number of pharmacies asking questions (n, %)
0	65 (76,5%)
1	13(15,3%)
2	4(4,7%)
3	3(3,5%)
Total	85(100%)
The average number of questions asked per patient	30 item : 85 pharmacies = 0,4 item

Regarding the provision of medication information, results also indicated a markedly low level of communication. Out of 16 information items that should be provided, pharmacies delivered an average of only 1.2 items. Only the information about medication dosing frequency was communicated by over 50% of pharmacies, whereas critical information including therapeutic purpose, side effects, symptoms of side effects, drug interactions, and storage instructions were rarely conveyed. For example, the only side effect information provided was the risk of hypoglycemia, with dizziness being the sole symptom mentioned.

Table 3. Average number of drug information items provided by 85 pharmacies dispensing medications

Number of information items provided (items)	Number of pharmacies providing information
0	25(29,4%)
1	27(31,8%)
2	24(28,2%)
3	6(7,1%)
4	2(2,3%)
5	1(1,2%)
Total jumlah apotek	85(100%)
Average number of drug information items provided per pharmacy	106 item : 85 pharmacies = 1,2 item

Provision of written information (labels)

Among the 85 pharmacies, 56 (65.9%) issued medication labels. However, these labels were frequently incomplete or contained errors. Three pharmacies (5.4%) omitted the patient's name, which could increase the risk of medication errors due to drug misidentification. The date of dispensing was recorded by 51 pharmacies (91.1%), but other vital details such as timing of administration relative to meals were

documented by only a few. Alarmingly, the expiration date was indicated by only one pharmacy (1.8%). Additionally, one pharmacy used a blue label, which is conventionally reserved for topical medications.

Table 4. Written information on medication labels

Information present on medication labels	Number of pharmacies (n=56)	
	Yes n (%)	No n (%)
Patient's name	53 (94,6%)	3 (5,4%)
Compounding date	51 (91,1%)	5 (8,9%)
Usage instructions	56 (100%)	0 (0%)
Dosage form	48 (85,7%)	8 (14,3%)
Administration time before meals	2 (3,6%)	54 (96,4%)
Administration time after meals	5 (8,9%)	51 (91,1%)
Prescription number	32 (57,1%)	24 (42,9%)
Medication name	6 (10,7%)	50 (89,3%)
Total quantity of medication dispensed	5 (8,9%)	51(91,1)
Morning dosage instructions	2 (3,6%)	54 (96,4%)
Expiration date	1 (1,8%)	55 (98,2%)

Discussion

Overall, the findings of this study highlight the suboptimal quality of pharmaceutical services in pharmacies within the Tapung Hilir area, particularly concerning the dispensing of glibenclamide prescriptions. The processes of obtaining patient information and providing medication counseling remain significantly below the expected standards. This is evidenced by the low average number of questions asked (0.4 items) and the average amount of information provided (1.2 items), indicating that communication between pharmacy staff and patients is minimal.

Research on pharmaceutical services in community pharmacies across different countries reveals significant gaps in patient counseling and information gathering. Studies in Eastern Indonesia, Pakistan, and Malaysia found that pharmacy staff often provide limited information during medication dispensing.[13–15] Common shortcomings include insufficient questioning about patient history and current medications, as well as inadequate counseling on side effects, drug interactions, and storage.[13,14] In Pakistan, only 29.4% of simulated patients received direct counseling for diabetes medication, with many pharmacies referring patients to physicians without providing information.[14] While pharmacy staff with formal education and experience tend to gather more information[13], overall communication between pharmacy staff and patients remains minimal, falling short of professional guidelines.[16] These findings highlight the need for improved training and adherence to counseling standards in community pharmacies.

This situation is particularly concerning given that diabetes mellitus is a chronic condition requiring long-term treatment and close monitoring. The pharmacist's role in pharmaceutical care is critical to ensure that patients understand their therapy, prevent adverse effects, and achieve optimal therapeutic outcomes. Neglecting essential prescription service steps, such as thorough information gathering and accurate labeling, may lead to detrimental consequences for patients, including therapeutic failure or other medication-related problems.

Pharmacists play a crucial role in diabetes management through various pharmaceutical care services. These include medication adherence support, patient education, identification and resolution of drug-related problems, and collaboration with other healthcare providers.[17–19] Studies have shown that pharmacist interventions can improve therapeutic outcomes, reduce costs, and enhance patients' quality of life.[17,18] Common pharmaceutical care issues identified in primary care settings include drug-use problems, insufficient patient knowledge, adverse drug reactions, and therapeutic failure.[20] Pharmacists can address these issues by providing comprehensive medication reviews, patient counseling, and monitoring treatment goals.[18] The evolving role of pharmacists in diabetes care emphasizes the importance of a multidisciplinary approach to optimize patient outcomes and ensure safe and effective use of medications.[17,19]

These findings underscore the urgent need to enhance the competence and awareness of pharmacy staff, including pharmacists and pharmacy assistants, regarding the importance of each stage in the prescription service process. More intensive education and training programs are necessary to ensure that the pharmaceutical service standards mandated by regulatory authorities are effectively implemented in practice, thereby maximizing patient benefit from medications and minimizing avoidable risks.

The research highlights significant gaps in pharmacy staff competence and awareness regarding prescription services and minor ailment management. Studies indicate a lack of integration of practice

standards in community pharmacies, with inconsistent procedures for over-the-counter medicine supply and prescription dispensing.[21] There is a notable deficiency in digital literacy knowledge among pharmacy staff, with minimal research on training effectiveness.[22] Education and training for minor ailment services are primarily focused on pharmacists, neglecting other pharmacy staff, and lack uniformity in content and delivery.[23] To enhance medication safety and align with international standards, there is an urgent need for comprehensive training programs, policy reforms, and technological integration for all pharmacy staff in both community and hospital settings.[24] These improvements are crucial for maximizing patient benefits and minimizing risks in pharmaceutical services.

Conclusion

This study reveals significant deficiencies in the quality of prescription services for glibenclamide in pharmacies within the Tapung Hilir area. Although most pharmacies stocked the medication, issues such as noncompliance with prescription retention policies and incorrect dispensing were identified, potentially compromising patient safety and treatment continuity. Critically, the collection of patient information was markedly insufficient, with pharmacies asking only 0.4 out of 13 recommended questions on average, and essential clinical details were completely neglected. Similarly, communication of medication information was minimal, averaging merely 1.2 out of 16 key counseling points, with only dosing frequency commonly addressed. Furthermore, written information on medication labels was often incomplete or inaccurate, posing additional risks for medication errors.

These findings are particularly alarming given the chronic nature of diabetes mellitus, which requires thorough pharmaceutical care to ensure effective therapy, prevent adverse effects, and optimize patient outcomes. The minimal interaction observed between pharmacy staff and patients highlights an urgent need to improve the knowledge, skills, and counseling practices of both pharmacists and pharmacy assistants. Enhancing staff competence through targeted education and training programs is essential to ensure adherence to national pharmaceutical service standards and regulatory requirements.

Ultimately, strengthening pharmaceutical care in community pharmacies will contribute to safer medication use, better therapeutic results, and improved quality of life for patients with diabetes and other chronic conditions. This study underscores the critical role of pharmacies in managing chronic diseases and calls for systemic efforts to elevate pharmacy practice standards in Indonesia's primary healthcare settings.

References

1. Chmielewski AK. The Global Increase in the Socioeconomic Achievement Gap, 1964 to 2015. Am Sociol Rev. 2019 Jun 16;84(3):517–44.
2. Kementerian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Republik Indonesia Nomor 1027/Menkes/SK/IX/2004 Tentang Standar Pelayanan Kefarmasian di Apotek. Jakarta: Kementerian Kesehatan Republik Indonesia; 2004.
3. Sari N. Protecting Consumer Medicine In Indonesia: Examining The Role of Pharmacist. J Huk Ius Quia Iustum. 2015 Jan;22(1):97–115.
4. Council on Credentialing in Pharmacy. Scope of Contemporary Pharmacy Practice: Roles, Responsibilities, and Functions of Pharmacists and Pharmacy Technicians. Washington; 2009.
5. Eldooma I, Maatoug M, Yousif M. Outcomes of Pharmacist-Led Pharmaceutical Care Interventions Within Community Pharmacies: Narrative Review. Integr Pharm Res Pract. 2023 May;12:113–26.
6. Rantucci MJ. Pharmacists Talking with Patients: A Guide to Patient Counseling. Philadelphia: Lippincott Williams & Wilkins; 2007.
7. International Diabetes Federation. IDF Diabetes Atlas. 10th ed. Brussels: International Diabetes Federation; 2021.
8. Dinas Kesehatan Provinsi Riau. Profil Kesehatan Provinsi Riau Tahun 2017. Pekanbaru; 2018.
9. Feingold KR. Oral and Injectable (Non-Insulin) Pharmacological Agents for the Treatment of Type 2 Diabetes. In: Endotext. South Dartmouth: MDText.com; 2024.
10. Bethesda. Sulfonylureas, Second Generation [Internet]. LiverTox: Clinical and Research Information on Drug-Induced Liver Injury. 2012. Available from: http://www.ncbi.nlm.nih.gov/pubmed/31643463
11. Mohiuddin A. The Excellence of Pharmacy Practice. Inov Pharm. 2020 Jan 28;11(1):3.
12. Watson MC, Norris P, Granas AG. A systematic review of the use of simulated patients and pharmacy practice research. Int J Pharm Pract. 2010 Feb 18;14(2):83–93.
13. Brata C, Marjadi B, Schneider CR, Murray K, Clifford RM. Information-gathering for self-medication via Eastern Indonesian community pharmacies: a cross-sectional study. BMC Health Serv Res. 2015 Dec 22;15(1):8.
14. Aziz MM, Yang S, Masood I, Zhu S, Raza MA, Ji W, et al. An assessment of counseling quality provided by community pharmacies to type 2 diabetic adult patients for oral therapy: a simulated patient study from Pakistan. Endocr J. 2019;66(3):233–9.
15. Neoh CF, Hassali MA, Shafie AA, Awaisu A. Nature and adequacy of information on dispensed medications delivered to

patients in community pharmacies: a pilot study from Penang, Malaysia. J Pharm Heal Serv Res. 2011 Mar;2(1):41–6.
16. van Dijk M, Blom L, Koopman L, Philbert D, Koster E, Bouvy M, et al. Patient–provider communication about medication use at the community pharmacy counter. Int J Pharm Pract. 2016 Jan 13;24(1):13–21.
17. Shawahna R, Thawabi F, Salah R, Ramadan S. Pharmaceutical care services for patients with diabetes: a systematic scoping review. Am J Manag Care. 2022 Sep 14;28(9):339–46.
18. Shareef J, Fernandes J, Samaga L. Evolving role of clinical pharmacist in the management of diabetes mellitus. Int J Res Med Sci. 2015;3(6):1305–8.
19. Inamdar SZ, Kulkarni RV, Karajgi S., Manvi FV, Ganachari MS, Kumar BJM. Medication Adherence in Diabetes Mellitus: An Overview on Pharmacist Role. Am J Adv Drug Deliv. 2013;1(3).
20. Chua SS, Kok LC, Yusof FAM, Tang GH, Lee SWH, Efendie B, et al. Pharmaceutical care issues identified by pharmacists in patients with diabetes, hypertension or hyperlipidaemia in primary care settings. BMC Health Serv Res. 2012 Dec 12;12(1):388.
21. Hattingh HL, King MA, Smith NA. An evaluation of the integration of standards and guidelines in community pharmacy practices. Pharm World Sci. 2009 Oct 5;31(5):542–9.
22. MacLure K, Stewart D. Digital literacy knowledge and needs of pharmacy staff: A systematic review. J Innov Heal Informatics. 2016 Oct 7;23(3):560.
23. Aly M, Schneider CR, Sukkar MB, Lucas C. Educational needs of community pharmacy staff in minor ailment service delivery: A systematic scoping review. Curr Pharm Teach Learn. 2020 Oct;12(10):1269–87.
24. Ahmed R, Tanzimur Rahman Tamim. Enhancing Medication Safety: The Role of Community and Hospital Pharmacists in Modern Healthcare Systems. Radinka J Heal Sci. 2025 Feb 28;2(3):328–55.