Indian Journal of Pharmacy Practice., 2024; 17(3):280-284.
https://www.ijopp.org

Original Article

Libyan Pharmacy Professionals' Knowledge, Attitudes and Practices Regarding Generic Substitution for Prescribed Brand Medications

Ahmed Atia[1,*], Aya Rhouma[2], Lama Ben Garsa[2]

[1]Department of Anesthesia and Intensive Care, Faculty of Medical Technology, University of Tripoli, Tripoli, LIBYA.
[2]Department of Pharmaceutical Sciences, University of Tripoli, Alahlia, Janzur, LIBYA.

ABSTRACT

Background and Aim: Generic substitution is considered as a major cost minimizing strategy to reduce pharmaceutical expenses without compromising healthcare quality. However, general practitioners are most concerned about the safety and quality of generic products. This study aimed to explore the knowledge, attitude and practice of pharmacy professionals regarding generic medicines in Tripoli, Libya. **Materials and Methods:** A cross-sectional survey was conducted among community pharmacists working in community pharmacies in Tripoli, Libya from Feb to March 2023. A self-administered eighteen item questionnaire on Knowledge, attitude and practice of community pharmacists was utilized. The data were entered into Microsoft Excel 2016 and analyzed using frequencies and percentages. **Results:** Out of 150 questioners distributed, only 119 of the participants gave their responses giving a response rate of 79.3%. Of the total eight knowledge items examined, about 93(78.2%) respondents correctly replied to the statement 'generic and brand medicines contain the same amount of active ingredients, 58(48.7%) of participant stated that generic medicine has the same bioequivalence as a brand medicine and 102(85.7%) of participants agreed that brand-name drugs can be replaced with generic versions. While participants' attitudes towards generic medicine were high and majority of them 107(89.9%) stated that the price difference between generic and brand-name drugs is a compelling reason to prescribe them. Most pharmacy professionals conveyed that they practiced the substitution of brand to generic and towards the generic medicine's substitution and 114(95.8%) of them encourage prescribers to use generic medicines. **Conclusion:** Pharmacy professionals working in community pharmacies in Tripoli had satisfied knowledge with positive attitude toward generic substitution. Most of them had practiced and encourages this practice. National guidelines and policies for generic medications are also necessary in Libya.

Keywords: Brand Drug, Generic Medicine, Substitution, Pharmacy Professional.

Correspondence:
Asst. Prof. Ahmed Atia
Department of Anesthesia and Intensive Care, Faculty of Medical Technology, University of Tripoli, Tripoli, LIBYA.
Email: ah.atia@uot.edu.ly

Received: 04-02-2024;
Revised: 16-04-2024;
Accepted: 01-05-2024.

INTRODUCTION

Brand to generic drug substitution is a practice that is commonly used in the healthcare industry. The practice involves switching a patient's prescription from a brand-name drug to a generic drug that contains the same active ingredients.[1] Typically, generic drugs are less expensive than their brand-name counterparts, because manufacturers do not have to invest in the research and development of new drugs. Generic drugs also are widely available in a variety of pharmacies and healthcare providers.[2] FDA regulates generic drugs to ensure that they are just as safe and effective as their brand-name counterparts. This means that patients can be confident that they are getting a high-quality medication.[3]

While generic drugs contain the same active ingredients as their brand-name counterparts, they may contain different inactive ingredients. In some cases, these inactive ingredients can cause allergic reactions or other adverse effects in certain patients.[4] To ensure the safety of brand to generic drug substitution, patient as well as physicians should be educated about the benefits and risks of brand to generic drug substitution.[5]

Numerous studies have been conducted on brand to generic drug substitution to assess the safety, efficacy and cost-effectiveness of this practice. A systematic review analyzed 20 studies that compared the clinical outcomes of patients who were switched from a brand-name drug to a generic drug. The review found that there was no significant difference in clinical outcomes between the two groups, indicating that generic drugs are just as safe and

DOI: 10.5530/ijopp.17.3.43

effective as their brand-name counterparts.[6] Another study found that generic drugs were associated with lower costs and similar or better clinical outcomes compared to brand-name drugs.[7] While these studies provide evidence for the safety and efficacy of brand to generic drug substitution, it is important to note that there may be individual cases where a patient may experience adverse effects or may not respond well to a generic drug.[8]

Brand to generic drug substitution has been a topic of interest in many countries, including Libya. The use of generic drugs can help reduce healthcare costs and increase access to essential medications, but there are concerns about the quality and efficacy of generic drugs compared to their brand-name counterparts. Thus, it is critical to assess health professionals' knowledge and attitudes toward generic medicines as a prerequisite for encouraging their use. A recent study evaluated the quality of generic drugs available in Libya, found that many of the generic drugs tested met the quality standards set by the World Health Organization, but there were also some drugs that did not meet these standards. The authors suggested that more rigorous quality control actions may be needed to ensure the safety and efficacy of generic drugs in Libya.[9] Therefore, this study aimed to assess knowledge, attitude and practice among pharmacy professionals toward brand to generic drug substitution in community pharmacies in Tripoli, Libya.

MATERIALS AND METHODS

Study design and area

This was a cross-sectional questionnaire-based study carried out among different pharmacy professionals working in community pharmacies in Tripoli, Libya from Feb to March 2023. This study included all volunteered pharmacy professionals and those who refused to participate were excluded.

Data collection techniques

A questionnaire adapted from previous studies was used, with some modifications to fit the local context.[1-10] It was conducted after the participants had agreed to participate (verbal consent form) and contains two main parts; the first part included socio-demographic characteristics of study participants. The second part contained three sections of "Yes or No questions" that is 8-items knowledge test statements, 6-statements to explore attitude toward generic for brand medicines substitution and four questions related to the practice of generic medicines substitution. The questionnaire was distributed physically through face-to-face survey. Participating pharmacists were required to complete the questionnaire in the presence of the researcher and were not permitted to consult any information sources while doing so. Sample size was calculated using a 5% margin of error and 95% confidence level, giving a sample size of 150.

Data analysis

The data were entered into Microsoft Excel 2016 and analyzed using frequencies and percentages.

Ethical approval

The study protocol was reviewed and approved by Institutional Review Board of university of Tripoli Alahlia, Janzur.

RESULTS

Out of 150 questioners distributed over 110 community pharmacies, 119(79.3%) of the participants agreed to participate, with 71(59.6%) were females. The highest percent (*n*=72; 67.9%) of pharmacy professionals were between ages of 25-35-year-old. More than half (*n*=61; 57.5%) of the participants had a bachelor's degree (Table 1).

Pharmacy professionals' knowledge of generic medicines substitution was investigated in the current study as exhibited in Table 2. About 93(78.2%) respondents correctly replied to the statement 'generic and brand medicines contain the same amount of active ingredients. Moreover, 58(48.7%) of participant pharmacy professionals correctly identified that generic medicine has the same bioequivalence as a brand medicine. About 102(85.7%) reported that brand-name medications may be replaced by generic versions. Moreover, 93(78.2%) of the respondents correctly identified that both generic and brand medicines should be in the same dosage form.

Table 1: Participant's demographics.

Items	*n* (%)
Age	
20-<30	51(42.9%)
30-<40	54(45.3%)
40-<50	12(10.1%)
50 and above	2(1.6%)
Gender	
Male	48(40.3%)
Female	71(59.7%)
Educational level	
Undergraduate)Bachelor's)	94(79%)
Diploma	25(21%)
Year of experience	
1 -<5	50(42.01%)
5 -<10	40(33.6%)
10 and above	29(24.4%)
Employment position	
Employee	102(85.71%)
Owner	17(14.29%)

Table 2: Pharmacy professionals' knowledge of generic medicines substitution.

Items	*n* (%)
The active ingredients in both generic and brand medications are the same.	93(78.2%)
A generic medicine has the same bioequivalence as a brand medicine.	58(48.7%)
Brand-name medications may be replaced by generic versions.	102(85.7%)
The dosage form of both generic and brand medications must be the same.	93(78.2%)
The same disease(s) are treated with generic medications in the same dose(s) as those treated with brand medications.	110(92.4%)
It is legal for pharmacists to dispense generic medications in place of brand-name medications that have been prescribed.	79(66.4%)
In Libya, community pharmacists have the authority to perform generic substitution.	114(95.8%)
Medicines with a narrow therapeutic index should not be substituted.	84(70.6%)

Table 3: Pharmacy professionals' attitude of generic medicines substitution.

Items	*n* (%)
Patients should be adequately informed about the reasons for selecting generic medications for them.	114(95.8%)
All products approved by health authorities as generic drugs are therapeutically equivalent to their branded counterparts.	69(57.98%)
The price difference between generic and branded medications would be a compelling reason to prescribe generics.	107(89.9%)
Standard guidelines on the generic medicine substitution process are required for prescribers and pharmacy personnel.	100(84.03%)
Generic substitution should be permitted by community pharmacies without a prescription from a doctor.	92(77.3%)
Therapeutic failure is a significant issue with the majority of generic medications.	88(73.9%)

The majority of respondents 110(92.4%) declared that the same diseases could be treated with the generic medicine at the same dose as the brand name medicine. Moreover, about 79(66.4%) of them agreed that it is legal for pharmacists to dispense generic medications in place of brand-name medications that have been prescribed.

Table 4: Pharmacy professionals' practice of generic medicines substitution.

Items	*n* (%)
For self-treatment, I prefer generic medications.	80(67.2%)
When a brand-name drug is prescribed, I dispense the generic version.	81(68.06%)
I advise my clients to use generic medications.	99(83.19%)
I encourage prescribers to use generic medications.	114(95.8%)

Similarly, 114 (95.8%) of participants reveled that in Libya, community pharmacists have the authority to perform generic substitution and 84 (70.6%) of them agreed that medicines with a narrow therapeutic index should not be substituted.

Table 3 provided pharmacy professionals' attitude of generic medicines substitution and found that 114 (95.8%) of participants agreed that patients should be adequately informed about the reasons for selecting generic medications for them. However, only 69 (57.98%) of them declared that all products approved by health authorities as generic drugs are therapeutically equivalent to their branded counterparts. Moreover, about 107 (89.9%) of the involved pharmacists reported that the price difference between generic and branded medications would be a compelling reason to prescribe generics.

Similarly, 100 (84.03%) of them agreed that standard guidelines on the generic medicine substitution process are required for prescribers and pharmacy personnel. Furthermore 92 (77.3%) and 88 (73.9%) of participants agreed that generic substitution should be permitted by community pharmacies without a prescription from a doctor and therapeutic failure is a significant issue with the majority of generic medications, respectively.

The practice of generic medicines substitution by the surveyed pharmacist was exhibited in Table 4. About 80 (67.2%) of the participants reported that for self-treatment, they would prefer generic medications and 81 (68.06%) of them declared that when a brand-name drug is prescribed, they would dispense the generic version. They advise to use generic medication to their patients as exhibited by 99 (83.19%) of them and 114 (95.8%) of them had encouraged other prescribers to use generic medications as substitution to brand one.

DISCUSSION

This study aimed to evaluate community pharmacists' knowledge, attitudes and practices regarding generic medicines. The finding of this study shows that there were gaps in the knowledge, attitude and practice of community pharmacy professionals towards generic medicines, which is corroborated by the previous studies. Concerning respondents' knowledge of generic medicine substitution, the majority of the study participants (78.2%) cited

generic and brand medicines containing the same amount of active ingredients. This finding is in parallel with the result of studies done previously.[10,11] The current study also indicated that (48.7%) of the participants correctly identified generic medicine as bioequivalent to brand medicine. This finding was similar to a study conducted in Ethiopia that revelled a rate of 52.9%.[11] About (85.7%) of pharmacists knew that brand-name medications may be replaced by generic versions, which was comparable to a previous study done by Allenetet et al., who indicated that 90% of the pharmacists agreed that brand-name medications may be replaced by generic versions.[12]

According to our study, the majority (66.4%) of participants agreed that it is legal for pharmacists to dispense generic medications in place of brand-name medications that have been prescribed and this study was in line with the report done previously with knowledge level of 53.2%.[13] Also similar to the finding of other studies 69.6%[14] and 50.5%.[15]

Furthermore, 95.8% of the community pharmacists in this study declared that, in Libya, pharmacists have the authority to perform generic substitution. In comparison to this result, an earlier study done in Palestine exhibited lower rate of 72.2%.[16] In addition, about 70.6% of the respondents reported that replacing medicines with a narrow therapeutic index should not be substituted. This disagreed with what was reported in previous studies done in the USA[17] and Saudi Arabia.[18]

Regarding attitude quires, about 95.8% of the surveyed pharmacists agreed that patients should be adequately informed about the reasons for selecting generic medications for them and this study was identical to the Palestinian study (81.4%).[16] The present study also showed that 89.9% of the pharmacists agreed that the price difference between generic and branded medications would be a compelling reason to prescribe generics. Almost 84.03% of participants agreed that standard guidelines on the generic medicine substitution process are required for prescribers and pharmacy personnel in Libya and this result was higher than the findings reported in Saudi study.[18]

The current results also showed that overall pharmacy professionals' standard guidelines on the generic medicine substitution process are required for prescribers and pharmacy personnel with 84.03% and this was higher than results from Palestine[16] and Qatar[19] studies. Moreover, 77.3% of the participants declared that community pharmacists should be allowed to perform generic substitution without consulting prescribing physicians. According to our study, (67.2%) of pharmacy professionals who participated in this study had practiced for self-treatment. Almost (68.06%) of the community pharmacists in the present study agreed to, when a brand-name drug is prescribed, they dispense the generic version, which was lower than results reported from Palestine (86%) and Qatar (80.5%).[16-19]

CONCLUSION

Our study found that pharmacy professionals working in community pharmacies in Tripoli had satisfied knowledge with positive attitude toward generic substitution. Most of them had practiced and encourages the generic substitution. Pharmacists and pertinent government agencies should participate in an educational program. Furthermore, national guidelines and policies for generic medications are necessary in Libya.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study protocol was reviewed and approved by Institutional Review Board of university of Tripoli Alahlia, Janzur. Verbal consent were obtained from the participant to voluntarily participate in this study.

SUMMARY

Generic medicines substitution among pharmacists is widespread and prevalent. An improved understanding of substitution, as well as knowledge of medications included in the hospital formulary, will be useful in implementing substitution practice that responds to patients' needs and improves their outcomes.

REFERENCES

1. Alemu S, Tadesse N, Mulugeta T, Assefa D. Generic substitution for prescribed brand medicines in Ethiopia: knowledge, attitude and practice among pharmacy professionals in community drug retail outlets. BMC Health Serv Res. 2022;22(1):926. doi: 10.1186/s12913-022-08330-6.
2. Dunne S, Shannon B, Dunne C, Cullen W. A review of the differences and similarities between generic drugs and their originator counterparts, including economic benefits associated with usage of generic medicines, using Ireland as a case study. BMC Pharmacol Toxicol. 2013;14:1. doi: 10.1186/2050-6511-14-1.
3. Al-Jazairi AS, Bhareth S, Eqtefan IS, Al-Suwayeh SA. Brand and generic medications: are they interchangeable? Ann Saudi Med. 2008;28(1):33-41. doi: 10.5144/0256-4947.2008.33.
4. Alderfer J, Hansen RA, Mattingly TJ 2nd. Understanding authorized generics-A review of the published clinical data. J Clin Pharm Ther. 2021;46(6):1489-97. doi: 1 0.1111/jcpt.13426.
5. Shrank WH, Cox ER, Fischer MA, Mehta J, Choudhry NK. Patients' perceptions of generic medications. Health Aff (Millwood). 2009;28(2):546-56. doi: 10.1377/hlthaff .28.2.546.
6. Yamada M, Welty TE. Generic substitution of antiepileptic drugs: a systematic review of prospective and retrospective studies. Ann Pharmacother. 2011;45(11):1406-15. doi: 10.1345/aph.1Q349. Epub 2011 Oct 25. PMID: 22028417.
7. Heinze G, Hronsky M, Reichardt B, Baumgärtel C, Müllner M, Bucsics A, *et al.* Potential savings in prescription drug costs for hypertension, hyperlipidemia and diabetes mellitus by equivalent drug substitution in Austria: a nationwide cohort study. Appl Health Econ Health Policy. 2015;13(2):193-205. doi: 10.1007/s40258-014-0143-4.
8. Gallelli L, Palleria C, De Vuono A, Mumoli L, Vasapollo P, Piro B, *et al.* Safety and efficacy of generic drugs with respect to brand formulation. J Pharmacol Pharmacother. 2013;4(Suppl 1):S110-4. doi: 10.4103/0976-500X.120972.
9. Abozaid D, Saleh W. Evaluation of some metformin hydrochloride brands available in the Libyan market. Mediterr J Pharm Pharm Sci. 2022;2(4):6-12.
10. Basak SC, Sathyanarayana D. Exploring knowledge and perceptions of generic medicines among drug retailers and community pharmacists. Indian J Pharm Sci. 2012;74(6):571-5. doi: 10.4103/0250-474X.110611.
11. Mohammed AS, Woldekidan NA, Mohammed FA. Knowledge, attitude and practice of pharmacy professionals on generic medicines in eastern Ethiopia: a cross-sectional study. PLoS One. 2020;15(7):e0235205. doi: 10.1371/journal.pone.0235205.

12. Allenet B, Barry H. Opinion and behaviour of pharmacists towards the substitution of branded drugs by generic drugs: survey of 1,000 French community pharmacists. Pharm World Sci 2003;25:197-202. pmid:14584225
13. Mekonnen T, Adugna B, Yilma Z. Knowledge, Attitude and Practice of Community Pharmacists' Towards Generic Medicines in Bahir Dar City, North West of Ethiopia. J Community Med Health Educ. 2020;10(700):2.
14. Nasir BB, Muhammed OS, Buseir MS. Assessment of knowledge, attitude and practice among pharmacy professionals towards generic medicines in Addis Ababa, Ethiopia. J Generic Med. 2019;15(4):185-92. doi: 10.1177/1741134319875764
15. Yard B. Assessment of Knowledge, Attitude and Practice of Pharmacy Professionals Toward Generic Medicines, Northern Ethiopia, Mekelle: A Cross-Sectional Study. J Basic Clin Pharma 2017;8:193-9.
16. Shraim NY, Al Taha TA, Qawasmeh RF, Jarrar HN, Shtaya MAN, Shayeb LA, Sweileh WM. Knowledge, attitudes and practices of community pharmacists on generic medicines in Palestine: a cross-sectional study. BMC Health Serv Res. 2017;17(1):847. doi: 10.1186/s12913-017-2813-z.
17. Sarpatwari A, Lee MP, Gagne JJ, Lu Z, Dutcher SK, Jiang W, Campbell EG, Kesselheim AS. Generic Versions of Narrow Therapeutic Index Drugs: A National Survey of Pharmacists' Substitution Beliefs and Practices. Clin Pharmacol Ther. 2018;103(6):1093-9. doi: 10.1002/cpt.884.
18. Al-Arifi W, Al Nomay M, Al Mousa H, Babelghaith S. Knowledge and perception of community pharmacists towards generic medicines in Saudi Arabia. Biomed Res. 2015;26(4):800-6
19. Awaisu A, Kheir N, Ibrahim MIM, El-Hajj M, Hazi H, Khudair N, *et al.* Knowledge, attitudes and practices of community pharmacists on generic medicines in Qatar. Int J Clin Pharm. 2014;36(2):394-404. doi: 10.1007/s11096-013-9909-2.

Cite this article: Atia A, Rhouma A, Garsa LB. Libyan Pharmacy Professionals' Knowledge, Attitudes and Practices Regarding Generic Substitution for Prescribed Brand Medications. Indian J Pharmacy Practice. 2024;17(3):280-4.