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ARTICLE

Knowledge, Attitude, Practices, and Barriers of Pharmacovigilance among Healthcare Workers

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Abstract

Background: Pharmacovigilance plays a critical role in drug safety, yet underreporting of adverse drug reactions (ADRs) remains a global challenge, particularly in low- and middle-income countries. This study assessed the knowledge, attitudes, and practices (KAP) of healthcare professionals (HCPs) in Libya regarding pharmacovigilance and ADR reporting.

Methods: A cross-sectional survey was conducted among 120 doctors, pharmacists, and nurses in Libya using a structured questionnaire. Convenience sampling was employed due to accessibility constraints. The questionnaire covered demographic data, knowledge of pharmacovigilance, attitudes toward ADR reporting, and self-reported practices. Descriptive statistics were used to analyze responses.

Results: The majority of participants were young (75% under 30 years), female (90%), and pharmacists (60%), with limited work experience (65% ≤3 years). Only 55% correctly defined pharmacovigilance, and 70% were unaware of the WHO Collaborating Centre's location (Sweden). While 60% were willing to report ADRs, key barriers included limited awareness (65%) and time constraints (50%). Despite 70% having identified an ADR, only 40% had reported one, highlighting a significant gap between detection and reporting.

Conclusion: Significant knowledge gaps and systemic barriers hinder effective ADR reporting among Libyan HCPs. Targeted educational interventions, simplified reporting mechanisms, and institutional support are needed to strengthen pharmacovigilance practices in Libya.

Keywords: Pharmacovigilance, Adverse Drug Reactions, Healthcare Professionals, Libya.

1. Introduction

Pharmacovigilance, as described by the World Health Organization (WHO), is a science and activities relating to the detection, monitoring, and prevention of adverse drug reactions (ADRs) or any other hazards related to pharmaceutical products [1]. WHO defined ADR as a response to a drug that is a noxious and undesirable response associated with significant morbidity and mortality [2]. It has been reported that 6.5% of serious hospital admissions are caused by adverse drug reactions and that one in seven hospital inpatients experience an ADR [3,4].

A few adverse drug reactions encouraged the beginning of the discipline of "pharmacovigilance," which plays an essential role in patient outcomes [5]. Following the disaster of thalidomide, the safety of medicines has become as crucial as their efficiency. The nationwide studies of pharmacovigilance were started by the WHO through the launch of the WHO Programme for International Drug Monitoring in 1968. This program offers not only an environment for WHO member states to cooperate in the auditing of pharmaceuticals but also an assessment of facts assembled from different reports [6].

Data from several studies revealed that ADRs were linked with 15% of extended hospitalizations, and they are considered a major cause of mortality in the USA [7]. The influence of health care specialists, in this regard, is extremely substantial and has encouraged ongoing assessment of the benefit-to-risk ratio of some drugs [8]. Several methods have been implemented for detecting ADRs, with spontaneous reporting considered as one of the significant methods contributing to the greater levels of pharmacovigilance in many nations [9].

In Libya, several efforts have been made to establish an effective pharmacovigilance system. Since it was launched in 2015, the pharmacovigilance in Libya is still in very early stages [10,11]. The goal of pharmacovigilance is to detect any possible adverse drug reactions, which are then assessed and examined to decrease the potential hazard. This information is further interconnected with the healthcare authorities and the general public to improve patient care and health safety.

One of the most difficult parts for ADR reporting is to construct a culture of reporting among the healthcare personnel, particularly among the healthcare staff, as they are more closely related to patient care. Currently, ADR reporting in Libya is at a very low stage, mainly due to a lack of awareness, training, and time limitations [11,12]. A very limited studies have been carried out in Libya that have reported poor ADR reporting among the prescribers and healthcare professionals [10,13]. This study assessed the knowledge, attitudes, and practices (KAP) of healthcare professionals (HCPs) in Libya regarding pharmacovigilance and ADR reporting.

2. Materials

2.1 Study Design / Approach

This study employed a cross-sectional survey design to assess healthcare professionals' knowledge, attitudes, and practices regarding pharmacovigilance and ADR reporting in Libya. The survey was conducted using a structured questionnaire distributed to doctors, pharmacists, and nurses.

2.2 Study population and sampling

The target population consisted of healthcare professionals (doctors, pharmacists, nurses) in Libya. A convenience sampling was used due to accessibility constraints, and the sample size was considered as 120 respondents who participated in the survey.

2.3 Data collection

A self-administered questionnaire was used, and it consists of 4 sections. The first section included demographic data (age, gender, profession, work experience). Section 2 involved knowledge-based questions (e.g., definition of pharmacovigilance, purpose of ADR reporting). Section 3 comprised attitude-based questions (e.g., willingness to report ADRs, perceived barriers). Section 4 included practice-based questions (e.g., previous ADR identification and reporting).

Responses were recorded using multiple-choice, Likert-scale (Strongly Agree to Strongly Disagree), and binary (Yes/No) formats.

2.4 Data Analysis

Descriptive statistics (frequencies, percentages) were used to summarize demographic variables and responses, and Microsoft Excel was used for data tabulation and visualization.

2.5 Ethical considerations

Informed consent was implied upon questionnaire completion. No personally identifiable information was collected. The study aimed to improve pharmacovigilance practices without compromising participant confidentiality.

3. Results

Table 1 presents the results of participants' demographics. Most respondents (75%) were under 30 years old, with the largest group being under 75 (45%). The sample was heavily skewed toward females (90%), with pharmacists dominating the sample (60%), followed by doctors (25%) and nurses (15%). Most respondents (65%) had ≤3 years of experience.

Table 1. Demographics of the participants

Demographics	Frequency	Percentage (%)
Age Group		
<25 years	54	45.0

25-30 years	36	30.0
31-35 years	15	12.5
>35 years	15	12.5
Gender		
Female	108	90.0
Male	12	10.0
Profession		
Pharmacist	72	60.0
Doctor	30	25.0
Nurse	18	15.0
Experience		
<1 year	30	25.0
1-3 years	48	40.0
4-6 years	24	20.0
>6 years	18	15.0

Table 2 reports the respondents' knowledge about pharmacovigilance. Only 55% correctly defined pharmacovigilance, suggesting gaps in foundational knowledge. About 60% are aware of formal reporting systems, but 40% lack awareness, and 70% did not know the location (Sweden), indicating poor awareness of global pharmacovigilance infrastructure.

Table 2. The respondents' knowledge about pharmacovigilance

Correct Definition	Frequency	Percentage (%)
Definition of Pharmacovigilance		
Yes	66	55.0
No	54	45.0
Knowledge of ADR Reporting Systems		
Yes	48	60.0
No	16	40.0
Knowledge of the WHO Collaborating Center		
Yes	36	30.0
No	84	70.0

Attitudes toward ADR reporting were exhibited in Figure 1. While 60% are willing to implement reporting, 40% resist, possibly due to perceived barriers (e.g., time, complexity).

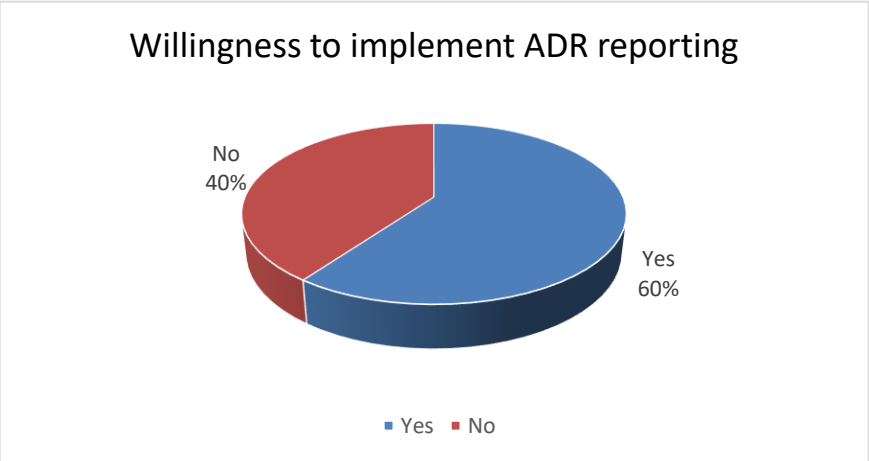

Figure 1. Willingness to implement ADR reporting

Limited awareness" (65%) and "shortage of time" (50%) were major barriers. Addressing these could improve reporting rates (Table 3).

Table 3. Perceived Barriers to Reporting

Barrier	Agreement (%)	Barrier

Financial issues	35.0	Financial issues
Limited awareness	65.0	Limited awareness
Belief that drugs are safe	30.0	Belief that drugs are safe

Despite 70% identifying ADRs, only 40% reported them, underscoring a gap between detection and reporting, as reported in Table 4.

Table 4. Experience with ADR Reporting

Experience	Frequency	Percentage (%)
Identified an ADR	28	70.0
Reported an ADR	16	40.0

4. Discussion

The results of this study provide valuable insights into the demographic characteristics, knowledge, attitudes, and barriers related to pharmacovigilance and ADR reporting among healthcare professionals in Libya.

The study sample was predominantly young (75% under 30 years) and female (90%), which may reflect the gender distribution in Libyan healthcare professions, particularly in pharmacy and nursing. The high representation of pharmacists (60%) suggests that pharmacovigilance awareness may be influenced by their specialized training in drug safety [14]. In a previous local study, pharmacy students had more PV knowledge than other healthcare students, with a higher proportion of pharmacy students than other healthcare students correctly defining PV knowledge and their function (P = 0.001) [15]. However, most participants in the current study had limited work experience (65% with ≤3 years), which could affect their familiarity with ADR reporting systems.

Despite being healthcare professionals, only 55% correctly defined pharmacovigilance, indicating significant gaps in foundational knowledge. While 60% were aware of formal ADR reporting systems, a substantial proportion (40%) lacked awareness, suggesting a need for targeted educational interventions. Furthermore, 70% were unaware of the location of the WHO collaborating center for international drug monitoring (Sweden), highlighting poor awareness of global pharmacovigilance infrastructure. Our findings were similar to a previous study conducted among pharmacists in Tripoli reported that only 28.9% correctly defined pharmacovigilance and 14.7% knew about the existence of a centre for pharmacovigilance in Libya [16]. This lack of knowledge may hinder effective ADR reporting and signal detection in clinical practice [17].

Although 60% of respondents expressed willingness to implement ADR reporting, 40% were resistant, possibly due to perceived barriers. The most commonly reported obstacles were **limited awareness (65%)** and **shortage of time (50%)**, aligning with findings from other low- and middle-income countries (LMICs) where underreporting is prevalent [18]. Financial constraints (35%) and the belief that approved drugs are inherently safe (30%) were less prominent but still notable barriers.

A critical finding was the discrepancy between ADR identification and reporting: while 70% of participants had identified an ADR, only 40% had reported it. This gap suggests systemic issues, such as cumbersome reporting procedures, lack of feedback, or insufficient institutional support. Similar trends have been observed in other studies, where underreporting persists despite healthcare professionals recognizing ADRs [19,20].

5. Limitations

This study has some limitations, including a small sample size, potential selection bias due to the predominance of pharmacists and young professionals, and reliance on self-reported data, which may be subject to social desirability bias. Future research should include a more diverse sample and explore qualitative perspectives on barriers to ADR reporting.

6. Discussion

This study has some limitations, including a small sample size, potential selection bias due to the predominance of pharmacists and young professionals, and reliance on self-reported data, which may be subject to social desirability bias. Future research should include a more diverse sample and explore qualitative perspectives on barriers to ADR reporting.

7. Conclusion

The findings highlight significant gaps in pharmacovigilance knowledge and ADR reporting practices among Libyan healthcare professionals. Addressing these gaps through education, policy improvements, and institutional

support could enhance drug safety monitoring and patient care in Libya. To improve pharmacovigilance practices in Libya, regular training sessions and workshops should be implemented to enhance knowledge of pharmacovigilance principles and reporting mechanisms. Streamlining ADR reporting through digital platforms or mobile applications could reduce time constraints and improve compliance. Furthermore, the national pharmacovigilance centers should promote awareness of their role and the importance of ADR reporting through media and professional networks.

Conflicts of Interest

The authors declared no conflict of interest.

References

1. World Health Organization (WHO). Pharmacovigilance [Internet]. Geneva: World Health Organization; 2004 [cited 2020 Mar 25]. Available from: https://www.who.int/medicines/areas/quality_safety/safety_efficacy/pharmvigi/en/
2. Tadvi N, Shareef S, Naidu C, Sree K, Rao V. Profile of adverse drug reactions in a rural tertiary care hospital. J Basic Clin Res. 2015;2(1):15–20.
3. Pirmohamed M, James S, Meakin S, Green C, Scott AK, Walley T, et al. Adverse drug reactions as cause of admission to hospital: prospective analysis of 18820 patients. BMJ. 2004;329(7456):15–19.
4. Davies E, Green C, Taylor S, Williamson P, Mottram D, Pirmohamed M. Adverse drug reactions in hospital in-patients: a prospective analysis of 3695 patient-episodes. PLoS One. 2009;4(2):e4439. doi:10.1371/journal.pone.0004439
5. Prakasam A, Nidamanuri A, Kumar S. Knowledge, perception and practice of pharmacovigilance among community pharmacists in South India. Pharm Pract (Internet). 2012 Oct–Dec;10(4):222–226.
6. Güner MD, Ekmekci PE. Healthcare professionals' pharmacovigilance knowledge and adverse drug reaction reporting behavior and factors determining the reporting rates. J Drug Assess. 2019;8(1):13–20. doi:10.1080/21556660.2019.1566137
7. Bouvy JC, De Bruin ML, Koopmanschap MA. Epidemiology of adverse drug reactions in Europe: a review of recent observational studies. Drug Saf. 2015;38(5):437–453. doi:10.1007/s40264-015-0281-0
8. Lexchin J. Is there still a role for spontaneous reporting of adverse drug reactions? CMAJ. 2006;174(2):191–192.
9. Adisa R, Omitogun TI. Awareness, knowledge, attitude and practice of adverse drug reaction reporting among health workers and patients in selected primary healthcare centres in Ibadan, southwestern Nigeria. BMC Health Serv Res. 2019;19(1):926. doi:10.1186/s12913-019-4775-9
10. Atia A. Pharmacovigilance in Libya: current status and future trends. Indian J Pharm Pract. 2019;12(4):267–269.
11. Alshammari TM, Mendi N, Alenzi KA, Alsowaida Y. Pharmacovigilance systems in Arab countries: overview of 22 Arab countries. Drug Saf. 2019;42(7):849–868. doi:10.1007/s40264-019-00807-4
12. Atia A. Prescribing errors and the need for prescription separation in Libya. Libyan J Med Sci. 2018;2:1–2.
13. Taher Y, Faraj S, Samud A, El-Taher F, Sherif F. Pharmacovigilance for pediatric outpatient prescriptions in Tripoli Children Hospital. Libyan J Med Sci. 2018;2:62–67.
14. Shrestha S, Sharma S, Bhasima R, Kunwor P, Adhikari B, Sapkota B. Impact of an educational intervention on pharmacovigilance knowledge and attitudes among health professionals in a Nepal cancer hospital. BMC Med Educ. 2020 Jun 3;20(1):179. doi:10.1186/s12909-020-02084-7
15. Atia A, Abdulwahed E. Perspective of undergraduate health-care students on adverse drug reaction and pharmacovigilance. Biomed Biotechnol Res J. 2023;7(4):577–581.
16. Atia A, Botto A, Alarbi S. Knowledge, attitudes and practices of pharmacists about pharmacovigilance, Libya. East Mediterr Health J. 2021;27(7):693–697.
17. Al-Abdulkarim DA, Aljadhey HS, Mahmoud MA, Poff GA, Hassali MA, Ali S. Knowledge and barriers among physicians toward adverse drug reaction reporting at a tertiary care hospital in Saudi Arabia. Hosp Pharm. 2021;56(4):368–373. doi:10.1177/0018578720910385
18. Hazell L, Shakir SA. Under-reporting of adverse drug reactions: a systematic review. Drug Saf. 2006;29(5):385–396.
19. Lopez-Gonzalez E, Herdeiro MT, Figueiras A. Determinants of under-reporting of adverse drug reactions: a systematic review. Drug Saf. 2009;32(1):19–31.
20. Al Meslamani AZ. Underreporting of adverse drug events: a look into the extent, causes, and potential solutions. Expert Opin Drug Saf. 2023;22(5):351–354.

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