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ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE OF HEALTHCARE PROFESSIONAL (PHARMACIST) REGARDING ADVERSE DRUG REACTION REPORTING AND PHARMACOVIGILANCE IN PUBLIC HOSPITALS IN QUETTA, PAKISTAN

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ABSTRACT

Objective: Assessment of knowledge, attitude and practice (KAP) of Pharmacist regarding adverse drug reaction (ADRs) and pharmacovigilance in public hospitals Quetta.

Methods: A cross sectional and questionnaire- based study design was used among the professional pharmacists in seven public hospitals of Quetta city, who were performing their duties in hospital as pharmacist and chief pharmacist. A total of 26 questionnaires were present in survey comprised of (knowledge 7, Attitude 10, practice 9) for the assessment of pharmacists (KAP). A total of 140 questionnaires were distributed to the pharmacists. The completion of the questionnaire by pharmacist was taken as their consent to participate in the study.127 pharmacists filled and returned the questionnaires at given time.

Results: The results of knowledge, attitude and practice about pharmacovigilance and ADR reporting system were very promising. Based on majority of respondents were male dominated (n= 89(70.1%). Majority of participants (n= 68 (53.5%) having age ranges between 24 – 34 years and experience group (n= 62(50%) between 4-7 years having current position (n= 123(96.9%)

were hospital pharmacist. Overall knowledge score of all the responding professional pharmacists (127), about two thirds 85 (69.9%) of the respondents had poor knowledge on the pharmacovigilance and ADR reporting system, while 41 (31.1%) had adequate knowledge about it. Among the 127 professionals, 103 (81.1%) had positive attitude, while 24 (18.9%) had negative attitude regarding pharmacovigilance and ADR reporting system. Moreover, majority of the respondents 102 (80.3%) had poor practice and 25(19.7%) of respondents had good knowledge about it.

Conclusion: The study indicates that the respondents have an inadequate knowledge and positive attitude toward ADR reporting and pharmacovigilanceand poor ADR reporting practices. Efforts are required to enhance knowledge and attitude toward pharmacovigilance and ADR reporting.

Keywords: Knowledge, attitude and practice, healthcare professionals, adverse drug reaction reporting, pharmacovigilance, Quetta, Pakistan

INTRODUCTION

Adverse drug reaction (ADR) can be defined as "an significantly harmful or unpleasant reaction, resulting from an intervention associated to the use of a pharmaceutical product, which predicts risk from future administration and warrants prevention or specific treatment, or alteration of the dosage regimen, or withdrawal of the product" [1]. Adverse drug reactions (ADRs) are a chief reason of patient associated disease and death [2] and they are related with a elevated prevalence of hospital admission reaching about 6.5% as well as a significant financial load; in which approximately £46.6 billion was reported as an yearly whole cost for drug related admissions in the UK [3].

The majority of countries developed their national pharmacovigilance systems after the thalidomide disaster in 1960s [4]. World Health Organization (WHO) has established the definition of pharmacovigilance as ''the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other possible drug-related problems'' [5]. Pharmacovigilance plays a vital role in the decrease of ADRs, thus the development and expansion of this science are critical for effective and safe clinical practice. ADRs spontaneous reporting systems are the basic components for the comprehensive post-marketing surveillance of drug-induced risks

[6]. These systems are inexpensive and simple to operate and they enable the generation of signals indicating potential problems, allowing the identification of new and rare ADRs, but also enable continuous monitoring of all drugs used in real life situations from the time they are first marketed. However, their strength is tightly connected to the actual reporting rate by health care professionals [7]. Therefore, the present study was designed to explore their knowledge and attitudes and practice of pharmacists towards ADR reporting and pharmacovigilance in public hospitals of Quetta city.

MATERIALS AND METHODS

Study design and study period

The present study was cross-sectional study and was conducted from September, 2015 till February, 2016.

Sample size calculation

As the number of pharmacists practicing at the institutes was relatively less in number, universal sampling method was used and all pharmacists (N=143) were targeted for data collection.

Study population

The study population comprised of pharmacists working in seven different public hospitals of Quetta city. Pharmacists were surveyed with a 26 items questionnaire to assess knowledge, attitudes and practice of pharmacist regarding ADR reporting and pharmacovigilance.

Data collection procedure

During survey, purpose of the study was explained to participants both verbally and by covering letter which was attached with consent form and ethical clearance. Pharmacists who agreed to participate in the study were requested to complete questionnaire and hand it back immediately. Those who were very busy at the moment, questionnaires were left to them and collected after a maximum of two working days. The returned questionnaires were checked for completeness, consistency and clarity before collected.

Ethical approval

This present study is approved from the institutional ethical committee of Faculty of Pharmacy as per the National Bio-ethical Committee guideline. In addition, written permission from the respective medical superintendents was also be taken to conduct the study. Written consent from the participants was also being taken before data collection and information of the participants will be kept secret.

Data analysis

The Statistical Package for Social Science (SPSS) version 20.0 was chosen for data entry and analysis. The data was entered in the SPSS by using a coding system. Upon finishing the coding, scoring was then given to each question sorted according to the following classification: knowledge, attitude or practice. For the knowledge section, the right answer was coded as '1' and the wrong answer as '0'. For the attitude, positive attitude was coded as '1' and the negative attitude as '0'. And for practice adequate practice was coded '1' and poor practice was coded '0' after each question was coded, the scores for the knowledge, attitude, practice and total scores of KAP were calculated. Descriptive analysis such as frequencies, percentage, and standard deviation, correlation was calculated.

RESULTS

Demographics characteristics

The majority of respondents (n= 68 (53.5%) fell in age group 24 – 34 years. Gender based result showed that major of respondents were male dominated (n= 89(70.1%). Furthermore, majority and also professionally experience group (n= 62(50%) between 4-7 years. Current position of respondents (n= 123(96.9%) were hospital pharmacist. Basic qualification (n= 63(49.6%) had degree of Pharm D (Table 1).

Description of knowledge regarding ADRs and PV of pharmacist

As shown in Table 2,102 (80.2%) of the respondents have heard of the term Pharmacovigilance and n=119(93.7%) of the respondents knew about term ADRs. Although (n=90, 70.9%) of respondents agreed that ADR reporting is professional obligation of healthcare professionals but majority(n=88, 69.3%) of respondents did not know where national ADR reporting system is situated. Ninety nine (78%) of respondents did not know the existence of pharmacovigilance center in QTA/ Pakistan. Ninety one (71.7%) of respondents had not seen the yellow card form and also 97(76.4%) of respondents did not know availability of ADR reporting form in their respective institute.

Description of Attitude regarding ADRs and PV of Pharmacist

As shown in Table 3, majority (n= 117, 92.1%) of respondents agreed that ADR reporting is necessary for all health care professionals and (n=114, 89.8%) respondents agreed that reporting ADR is part of health care team. One hundred and thirteen (89%) of respondents stated that

ADR reporting improves patient care. However, (n=63, 49.6%) agreed that ADR reporting makes no difference on patients. Furthermore, 82 (62.6%) thought that their workload will be enhanced but they agreed that reporting ADRs improves the patient's safety. All ADRs even being mild should be reported was agreed up on by the majority (n= 84, 66.1%) of the respondents. One hundred and three (81.1%) of respondents agreed that Pharmacovigilance should be thought in their academic studies in detailed (Table 3).

Description of Practice regarding ADRs and PV of Pharmacist

As analyzed in table 4, majority (77, 60.6%) of the respondents did not encountered patients with ADR while 103(81.1%) of respondents did not reported ADRs. Majority n=113(89%) agreed that they didn't get any training regarding ADR. 107(84.3%) of respondents agreed ADR reporting is their duty but 71 (55.9%) and 66(52%) of participates denied to consult senior pharmacist for the detection and prevention of ADRs for occurrences.

Knowledge scoring regarding ADRs and PV of Pharmacist

Mean knowledge score were calculated as 3.03±1.112. There were 7 questions regarding knowledge was asked and 4 correct answers was the cutoff. On the basis of individual score respondents knowledge was categorized as adequate and poor knowledge. Table 5 result describes that majority of respondents showed (n=42, 33.1%) adequate knowledge whereas (n=85, 69.2%) had poor knowledge towards ADR.

Attitude scoring regarding ADRs and PV of Pharmacist

Mean attitude score were calculated as 6.80±2.97. There were 10 questions regarding attitude and 5 was the cutoff. On the basis of individual score respondents attitude was categorized as positive and negative attitude. Table 6 result describes that majority of respondents showed 103 (81.9%) had positive attitude whereas 24 (18.9%) had negative attitude.

Practice scoring regarding ADRs and PV of Pharmacist

Mean practice score were calculated as 3.03±1.68. Nine questions were asked with a cutoff level of 5. On the basis of individual score respondents practice was categorized as good and poor practice. Table 7 describes that only (19.7%) respondents had good practice towards ADR reporting.

Correlation between Knowledge-Attitude and Practice of pharmacist towards ADR

Correlation were interpreted using the following criteria 0 – 0.3 = weak correlation, 0.3 – 0.7 = moderate correlation and > 0.70 as strong correlation. Significant positive linear correlation between knowledge and attitude ($r=0.371$, $p<0.01$) knowledge and practice ($r=0.424$,$p<0.001$) and Attitude and practice($r=0.248$,$p<0.005$) were reported the reaffirmed the relation between knowledge attitude and practice (Table 8).

Table 1: Demographic characteristics of pharmacists

Category	Frequency	Percentage
Age		
24 – 34	68	53.5%
35-44	52	40.9%
>45	7	5.5%
Gender	127	
Male	89	70.1%
Female	38	29.9%
Experience group		
1-3 years	44	34.6%
4-7 years	62	48.8%
8-12 years	19	15%
>13 years	2	1.6%
*Curren*t Position		
Chief pharmacist	4	3.15%
Hospital pharmacist	123	96.9%
Qualification		
B Pharmacy	51	40.2%
Pharm D	63	49.6%
M-Phil/ MS	13	10.2%

Table 2: Description of knowledge regarding ADRs and PV of pharmacist

Questions	Yes	No	Don't Know
Have you heard about the term Pharmacovigilance	102 (80.3%)	18(14.2%)	7(5.5%)
Have you heard about term ADRs	119(93.7%)	7(5.5%)	1(.8%)
Do you know where national ADR reporting system is situated	21(16.5%)	88(69.3%)	18(14.2%)
ADR reporting is professional obligation for healthcare professionals	90(70.9%)	27(21.3%)	10(7.9%)
Do you know the existence of pharmacovigilance center in QTA Pakistan?	9(7.1%)	99(78%)	19(15%)
Have you seen the yellow card form associated with ADR reporting?	32(25.2%)	91(71.7%)	4(3.1%)
Do you know the availability of ADR reporting form in your facility institute?	21(16.5%)	97(76.4%)	9(7.1%)

Table 3: Attitude regarding ADRs and PV of Pharmacist

Questions	Yes	No	Don't Know
ADR reporting is necessary for all health care professionals	117(92.1%)	9(7.1%)	1(.8%)
Reporting ADR is part of health care team	114(89.8%)	4(3.1%)	9(7.1%)
Reporting ADR improves quality of patient care	113(89%)	11(8.7%)	3(2.4%)
ADR reporting makes no difference on patient	63(49.6%)	57(44.9%)	7(5.5%)
ADR reporting is not useful to the patient	57(44.9%)	67(52.8%)	3(2.4%)
Reporting ADRs enhance the workload	82(62.6%)	37(29.1%)	8(6.3%)
Reporting ADRs improves the patients safety	85(66.9%)	28(22%)	14(11%)
All ADRs even being mild should be reported	84(66.1%)	36(28.3%)	7(5.5%)
Establishing ADR monitoring and reporting Centre in hospital is very necessary	86(67.7%)	21(16.5%)	20(15.7%)
Pharmacovigilance should be thought in details to health care professionals in their academic studies	103(81.1%)	19(15%)	5(3.9%)

Table 4: Practice Questions regarding ADRs and PV of pharmacist

Questions	Yes	No	Don't Know
Have you ever encountered patient with ADR in your practice?	46(36.2%)	77(60.6%)	4(3.1%)
Have you ever reported ADR?	24(18.9%)	103(81.1%)	0 (0)
Have you reported any suspected adverse drug reaction to any of the ADR reporting and monitoring center?	4(3.1%)	117(92.1%)	6(4.7%)
Have you receive any training regarding ADRs and its reporting?	14(11%)	113(89%)	0 (0)
Have you read an article reporting ADR?	62(48.8%)	65(51.2%)	0 (0)
Have ever intervene patient with ADRs for occurrence?	25(19.7%)	98(77.2%)	4(3.1%)
Do you consult pharmacist(senior) for detection of ADRs?	55(43.3%)	71(55.9%)	1(.8%)
ADR reporting is duty of (pharmacist)	107(84.3%)	14(11%)	6(4.7%)
Do you consult pharmacist (senior) to prevent ADRs for occurrence?	58(45.7%)	66(52%)	3(2.4%)

Table 5: Knowledge score regarding ADRs and PV of Pharmacist

Category	Frequency	Percentage
Adequate Knowledge	42	33.1%
Poor Knowledge	85	69.9%

Table 6: Attitude score regarding ADRs and PV of Pharmacist

Category	Frequency	Percentage
Positive Attitude	103	81.1%
Negative Attitude	24	18.9%

Table 7: Practice score regarding ADRs and PV of Pharmacist

Category	Frequency	Percentage
Good Practice	25	19.7%
Poor Practice	102	80.3%

Table 8: Correlation between Knowledge-Attitude and Practice of pharmacist

Category	Pearson Correlation	P value
Knowledge-Attitude	0.371	0.001
Knowledge-Practice	0.424	0.001
Attitude-Practice	0.248	0.005

DISCUSSION

Talking about developed countries, where pharmacists are playing a vital role as health-care consultants and are easily accessed. Patients often prefer to approach pharmacists in case of any suspected drug issues like ADR. Therefore, time demands pharmacists to be actively involved in pharmacovigilance related activities within the context of their practices. The pharmacist's role in pharmacovigilance may vary from one country to another, but the core of the professional responsibility more or less remains same throughout. Main limitations of the study were lack of time and co-operation from pharmacists.

The present study was a questionnaire based study which included pharmacist from seven tertiary care public hospitals of Quetta city. This is the first study in Balochistan province of Pakistan that evaluated the KAP of pharmacists regarding ADR reporting and Pharmacovigilance. The findings of this study reported a positive attitude of

pharmacists towards ADRs reporting and pharmacovigilance. These attitudinal matters are very similar with other previous studies like in UAE [8].,but different from the study conducted at New Zealand, where negative attitude was observed among pharmacists by Zolezzi and Parsotam in 2005 [9]. Most of the participated pharmacists 114(89.8%) felt that Reporting ADR is part of health care team A study conducted in UAE reported majority of pharmacists believed that ADR reporting is a part of the professional role of the pharmacists [8].

This survey reported another important issue and that is lack of training in ADR reporting. 113(89%) respondents felt that they were not adequately trained in ADR reporting. These findings advocate the need of an hour to create awareness programs for the pharmacists about ADR reporting. These awareness programs should focus on introduction of ADRs, filling methods of the ADRs form and the details of the reporting procedure.

CONCLUSION

Our study shows that, commonly lack of knowledge towards pharmacovigilance aspects among pharmacists from Quetta city. The basic things like not knowing the location of the nearest ADR reporting center and unawareness about National Pharmacovigilance Program of Pakistan, and didn't know about the yellow card. Attitude has been reported good compared to knowledge and practice, and importantly it should not be washed-off due to barriers while reporting ADRs. Implementing the pharmacovigilance education and training, effectively, into the diploma pharmacy course can provide boost to them and participated in the study also suggested for the need for training through frequent CME lectures and integration of ADR reporting and pharmacovigilance center.

Disclosure

The author declares no conflict of interest. No funding received for thisstudy.

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