

**STUDY OF KNOWLEDGE, ATTITUDE, AND PRACTICE OF PHARMACIST TOWARDS ADVERSE DRUG REACTION REPORTING IN DAVANGERE CITY**RAVINANDAN AP<sup>1\*</sup>, ACHUTHA V<sup>2</sup>, VIKRAM K RAMANI<sup>2</sup>, SANTOSH UTTANGI<sup>2</sup>, SUSHIL KUMAR L<sup>3</sup>

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*Received: 09 March 2015, Revised and Accepted: 30 March 2015***ABSTRACT**

**Objective:** To study the knowledge, attitude, and practice of pharmacists towards adverse drug reaction (ADR) reporting in Davangere city.

**Method:** A prospective and questionnaire-based study, conducted for a period of 6 months in different pharmacies of Davangere city. The sample includes 145 pharmacists.

**Result:** Among 145 pharmacists approached, 102 (response rate is 70.34%) pharmacists agreed to give the consent for study. Majority of them were male (90.2%). Out of these respondents, only 15 (14.7%) pharmacists knew the correct definition of ADR. Only 32 (31%) were aware of Pharmacovigilance Programme of India. 77 (75.4%) agreed that pharmacists could be the right person to assist physician in ADR reporting. Seventy-five (73.53%) respondents felt that ADR reporting has good outcome and 82 (80.4%) thought that they are not adequately trained in ADR reporting.

**Conclusion:** Majority of pharmacists have poor knowledge, but positive attitude towards ADR reporting. Incorporation of ADR reporting concepts in education curriculum, training of pharmacists and voluntary participation of pharmacists in ADR reporting is very vital in safe guarding the public health.

**Keywords:** Adverse drug reactions, Pharmacists, Knowledge, Attitude, Questionnaires.

**INTRODUCTION**

Knowledge, attitude and practice (KAP) study used to assess the extent of KAP of a community. The main aim of KAP study is to discuss in details about the changes in KAP of any community. Before creating awareness in any given community, it is first necessary to evaluate the atmosphere in which awareness will be taken place. The knowledge acquired by community refers to their comprehension of any given subject matter. Attitude depicts their feelings toward clinical circumstances, and also any useful ideas that they may have toward it. The ways in which they clearly show the existence of their knowledge and attitude through their actions denotes practice [1].

Medicines are generally used in treating illnesses as they have the ability to modify the altered physiological processes in the body. Some times these medicines carry certain amount of risks in the form of unwanted or unintended effects, called adverse drug reactions (ADR). Uses of medications depend mainly on the extent of the expected benefit of the therapy and the seriousness of possible unwanted effects [2]. ADRs are one of the major drug related problems also considerable economic burden on the society and the healthcare system [3]. World Health Organisation defines ADR as "any noxious and unintended response to a drug, which occurs at doses normally used in human for prophylaxis, diagnosis and treatment of the disease or for the modification of physiological functions."

Among healthcare team pharmacists play an significant role in the detection and reporting of suspected ADRs. The participation of pharmacists in ADR reporting will be an important role to counter the underreporting of the ADRs. Underreporting sustains early detection of ADRs and can increase morbidity and mortality in patients [3,4]. The role of pharmacists, traditionally, was limited to the preparation and dispensing of drugs prescribed by the physicians. Now, the role has been expanded to various aspects of patient care which includes reporting of ADRs, improving patient health and economic outcome. Pharmacists as drug experts, are expected to have more knowledge

regarding safety aspects of medicines [5]. There are several factors which are responsible for the low reporting of ADRs namely, irrational prescribing of drugs, dispensed drugs without prescriptions, poly-pharmacy and unavailability of well-trained pharmacists [6].

**METHODS**

**Study site:** This study was conducted at 102 community and hospital pharmacies located in Davangere city, Karnataka.

**Study design:** This was a prospective and questionnaire based survey method.

**Study duration:** The study was conducted for a period of 6 months from December 2013 to May 2014.

**Study criteria:** The pharmacists were selected based on their interest to participate in the study.

**Inclusion criteria:** Pharmacists who were co-operative and interested to give the consent for the study

**Exclusion criteria:** Pharmacists who were busy and not interested to participate in the study

**Source of data collection:** Consulting the community and hospital pharmacists, informed consent form (ICF), KAP questionnaire on ADR.

**Ethical approval:** This study was approved by Institutional Ethical Committee of Bapuji Pharmacy College, Davangere.

**Data collection form and study procedure**

The questionnaire was prepared by referring suitable literatures and it consists of 15 multiple choice questions, where five questions belong to knowledge, five belongs to attitude and five related to practice.

Before collecting the data, sought permission from the president of Davangere Chemist and Druggist Association and the consent letter for the participation in the study was obtained. The community and hospital pharmacies in the city were randomly selected for the study.

First, the purpose of the study was explained to pharmacists and ICF with questionnaire was given to them, who met the inclusion criteria. They have been instructed how to fill the given forms and filled questionnaires were collected back for further analysis.

#### Documentation

The data collected from the pharmacists was documented and for further analysis it was entered into Microsoft excel sheet.

#### RESULTS

Out of 145 pharmacists approached 102 pharmacists had given consent to participate in our study and response rate has been found to be 70.34%. Among these 102 pharmacists, 92 (90.2%) were male and 10 (9.8%) were female. Majority of the pharmacists were in the age group of 31-40 years (38) (37.25%) and 41-50 years (41) (40.2%). Only 9 (8.8%) pharmacists are above 50 years of age. Educationally, most of the pharmacists are diploma in pharmacy holders 100 (98.04%) and only 2 (1.96%) pharmacists had graduated in pharmacy (B. Pharm). Most 55 (53.92%) pharmacists have experience between 11 and 20 years.

All demographic details are shown in Table 1.

#### Knowledge

Among the respondents, only 15 (14.7%) were given the answer correctly for the definition of ADR. When we asked about the safety of drugs, available in market, 13 (12.75%) responded that all available drugs are safe and 85 (83.33%) responded that all drugs are not safe. Only 32 (31%) were aware of the "Pharmacovigilance Programme of India" by CDSCO. On asking of types of ADR, 22 (21.5%) were gave correct answers. Reasonably, 41 (40.1%) were sure about the correct answer when it had been asked about the predisposing factors (Table 2).

#### Attitude

Out of 102 respondents, 95 (93.1%) were positive about beneficial outcomes of ADR reporting and monitoring system. 77 (75.4%) felt

that pharmacists can assist physician in ADR reporting. 61 (59.80) respondents responded that they don't worry about the legal issues while reporting ADR. 75 (73.53%) respondents felt that ADR reporting has some good outcomes and 17 (16.6%) felt that its time-consuming activity with no outcome (Table 3).

#### Practice

Most 97 (94%) persons did not know about any nearby ADR reporting centre. When they asked about "direct ADR reporting" by the patients, 78 (76.4%) respondents hailed the concept. 89 (87.2%) told that there is a role of information technology in ADR reporting. 82 (80.4%) think that they are not adequately trained in ADR reporting (Table 4).

#### 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 survey questionnaire was designed and prepared by looking back at previous studies carried out in India as well as in other countries [8-10]. There were 145 pharmacists who been approached to participate in this study, out of them 102 pharmacists completely filled the questionnaires and only those were enrolled to our study. The response rate was good, 70.34%, and analysis of respondents' demographic details revealed that they were representative of the total population of Davangere pharmacists. The majority of the community pharmacists were male (90.2%), middle-aged, with a diploma in pharmacy (98.04%). The response rate was lot similar to other studies conducted in The Netherlands by Grootheste *et al.* in 2002 [4] and Saudi Arabia by Bawazir in 2006 [10].

It was found in this current study that only 15 (14.7%) pharmacists were able to select the correct option for the meaning of ADR. Only 22 (21.5%) and 41 (40.1%) pharmacists were known the types of ADRs and predisposing factors, respectively. This contributes to their poor knowledge toward ADR aspects.

Most of the community pharmacists surveyed (69%) were not aware of National Pharmacovigilance Program of India. In UK, only 7% community pharmacists were not alert about the existence of National Pharmacovigilance Program, which is reported by Qassim *et al.* in 2014 [8]. Our findings are similar to the results reported for Hong Kong pharmacists [10]. These findings may indicate poor program announcement to community pharmacists which emphasizes on the urgency of developing strategies to increase the knowledge and awareness about pharmacovigilance center availability in India.

The findings of this study reported a positive attitude of community pharmacists towards ADRs reporting. These attitudinal matters are very similar with other previous studies like in UAE [8], but different

Table 1: Demographic details of the respondents

Item	Sub-group	Number	Percentage
Gender	Male	92	90.2
	Female	10	9.8
Age group (years)	21-30	14	13.7
	31-40	38	37.25
	41-50	41	40.02
	>50	09	8.8
Qualification	D. Pharm	100	98.04
	B. Pharm	02	1.96
	M. Pharm	0	0
Experience (years)	<5	9	8.82
	5-10	25	24.51
	11-20	55	53.92
	>20	13	12.75

Table 2: Responses to the knowledge related questions

Question no.	Question asked	Number of correct answers with percentage	Number of wrong answers with percentage
1	ADR means	15 (14.7)	87 (85.2)
2	Do you believe all the drugs, which are available in the market, are safe?	85 (83.33)	13 (12.75)
3	Are you aware of "Pharmacovigilance Programme of India?"	32 (31)	70 (69)
4	How many types of ADRs do you know?	22 (21.5)	80 (78.4)
5	Which are the predisposing factors?	41 (40.1)	61 (59.8)

ADR: Adverse drug reaction

Table 3: Responses to the attitude related questions

Question no.	Attitude questions	Yes (%)	No (%)	Don't know (%)
6	Do you think that ADR reporting and monitoring system would benefit the patient?	95 (93.1)	7 (6.86)	-
7	Do you think that pharmacists could be the right person to assist physician in ADR reporting?	77 (75.4)	23 (22.55)	2 (1.96)
8	Do you worry about legal problems while you think of ADR reporting?	27 (26.4)	61 (59.80)	14 (13.7)
9	Do you feel that ADR reporting is time consuming activity with no outcome?	17 (16.6)	75 (73.53)	10 (9.80)
10	Has this system created awareness of ADR reporting in you?	64 (62.7)	38 (37.25)	-

ADR: Adverse drug reaction

Table 4: Responses to the practice related questions

Question no.	Practice questions	Yes (%)	No (%)	Don't know (%)
11	Is there any nearby ADR reporting and monitoring centre in your knowledge?	7 (6.86)	52 (50.98)	43 (42.16)
12	Do you support "direct ADR reporting" by the patients instead of health care professionals?	78 (76.4)	24 (23.5)	-
13	Do you think the role of information technology is required in facilitating ADR reporting in the country? (Such as use of internet, mobile service, etc.)	89 (87.2)	4 (3.92)	9 (8.82)
14	Have you ever experienced any ADR in patient during your practice?	49 (48.03)	53 (51.96)	-
15	Do you feel that you are adequately trained in ADR reporting?	20 (19.6)	82 (80.4)	-

ADR: Adverse drug reaction

from the study conducted at New Zealand, where negative attitude was observed among pharmacists by Zolezzi and Parsotam in 2005 [7].

Most of the participated pharmacists (93.1%) felt that the ADR reporting and monitoring system would be beneficial for the patient. When it came to specific professional role, 77 (75.4%) respondents felt that pharmacists could be the right person to assist physician in ADR reporting. A study conducted in UAE reported majority of pharmacists believed that ADR reporting is a part of the professional role of the pharmacists [8]. Community pharmacists' prime responsibility is ensuring patient safety, which can be achieved by active and voluntary participation in pharmacovigilance program. However, it is responsibility of the pharmacovigilance center to maintain this positive attitude of pharmacists, by informing them on reporting system and by bringing up to date relevant pharmacovigilance news and training.

It has been observed in this study that 26.4% of the pharmacists fears of legal consequences while reporting an ADR. Similar finding were been reported (3%) by previous survey in Netherlands [4].

This study revealed major barriers preventing community pharmacists in Davangere from reporting ADRs, such as unknown address of the ADR reporting center, lack of time and lack of training in ADR reporting process.

Another way to increase the reporting of ADRs is through the promotion of patient-self reporting. The benefits of this idea have been confirmed in different studies at UK by Blenkinsopp *et al.* in 2006, [11] and at Netherlands by van Hunsel *et al.* in 2009 [12]. In our survey, majority of the pharmacists (76.4%) supported the direct ADR reporting by the patient instead of health care professionals. This factor ultimately indicates the need of "spontaneous reporting system."

This survey reported another important issue and that is lack of training in ADR reporting. 82 (80.4%) 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.

89 (87.2%) pharmacists supported the role of information technology in ADR reporting. This finding is similar to finding of survey conducted in India by Ahmad *et al.* in 2013 [9] where they found that 80%

pharmacists supported online programs or websites for ADR reporting via internet, mobile service etc.

This present study finally reveals that there is an immediate need of training on ADR reporting and Pharmacovigilance in Davangere, Karnataka State, India.

#### CONCLUSION

Our study shows that, commonly lack of knowledge towards pharmacovigilance aspects among pharmacists from Davangere city in Karnataka. The basic things like not knowing the location of the nearest ADR reporting centre and unawareness about National Pharmacovigilance Program of India, creates great space for drug safety authorities and regulatory agencies to step forward in direction to pharmacists.

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, since majority of community pharmacy practice is running by diploma holders. Periodic trainings should be conducted by drug safety authorities to update them on ADR and its reporting.

#### ACKNOWLEDGMENT

Our special thanks to Dr. A.P Basavarajappa, Principal, Bapuji Pharmacy College. Thanks to all staff and students of Bapuji Pharmacy College, Davangere who helped us in conductance of the study.

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