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ASSESSMENT, EVALUATION, AND ANALYSIS OF KNOWLEDGE ON DRUG INFORMATION CENTRE AND ADVERSE DRUG REACTION MONITORING CENTRE AMONG COMMUNITY PHARMACISTS IN TUMAKURU CITY A CROSS SECTIONAL QUESTIONNAIRE BASED STUDY

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ABSTRACT

Background: Drug information is a specialized service to enhance drug knowledge, empower rational prescribing and reduce medication errors. Adverse Drug Reaction Monitoring Centre is working for the safety and welfare of patients by early detection, reporting and monitoring of Adverse Drug Reaction. **Objective:** To assess the knowledge and educate the community pharmacists about Drug Information Centre and Adverse Drug Reaction Monitoring Centre. **Methodology:** A Cross Sectional Questionnaire based study was conducted among the Community Pharmacists in Tumakuru City for 3 months of period. Totally 128 pharmacists are actively participated in the study. The demographic details such as name, age, and sex along with information about knowledge on Adverse Drug Reaction, Adverse Drug Reaction Monitoring Centre and Drug Information Centre were collected by using a suitably designed profile form. The pills, drug information query form, ADR reporting forms are used to create awareness among community pharmacists. Statistical analysis includes mean, percentage, pie charts and bar graphs were done by using Microsoft excel. **Results:** A total of 128 pharmacists responded to the questionnaire in Tumkur city. A very small proportion of the pharmacists had ever reported ADR. (4.6%) of the pharmacists reported ADR, (7%) of the pharmacists were aware of the drug information centre and (26.5%) of the pharmacist know the role of providing drug information to the patient. **Conclusion:** Our study concludes that community pharmacists having lack of knowledge about the Drug Information Centre and Adverse Drug Reaction Monitoring Centre. So, proper awareness and education were essential to optimize the drug therapy and quality of life of patients.

KEYWORDS: Adverse Drug Reaction, Community Pharmacists, Drug Information, Pharmacovigilance.

INTRODUCTION

Adverse drug reactions represent a serious health problem. ADRs account for 3.2-7% of acute hospital admissions. They cause morbidity, mortality, and increased duration of hospital stay and also increases hospital costs. The World Health Organization (WHO) defines an ADR as 'any response to a drug that is noxious and unintended, and that occurs at doses used in humans for prophylaxis, diagnosis, or therapy, excluding failure to accomplish the intended purpose.[1]

The Central Drug Standard Control Organization (CDSCO), Directorate General of Health Services under the aegis of Ministry of Health and Family Welfare, Government of India in collaboration with the Indian Pharmacopeia Commission (IPC), Ghaziabad is conducting a nation- wide Pharmacovigilance Program of India (PvPI) for protecting the health of the patient by assuring drugs safety. The program is coordinated by the IPC as a National Coordinating Centre (NCC). The mission of PvPI is to safeguard the health of the Indian population by securing that the benefits of use of medicine outweigh the risks associated with its use. The vision of PVPI is to improve patient safety and thereby reducing the risk associated with use of medicines.

AMC (Adverse Drug Reaction Monitoring Centre) is designated under PvPI and is working for the safety and welfare of patients by early detection, reporting and monitoring of ADR in hospital setup and by providing its prompt and appropriate management.[2]

Spontaneous reporting of ADRs remains the most widely used and cost effective surveillance system and is the cornerstone of safety monitoring of drugs in clinical practices. It detects previously unrecognized adverse

reactions and identifies risk factors that pre-dispose to drug toxicity and investigates causality.[3]

Under reporting of ADRs is a major obstacle for the progress of PV programs.[4] Drug information is defined by its role in providing information about drug therapy and drugs in response to a request from various health-care providers, patients, organizations, committees and public community either by verbally or in written form. To meet the needs of practicing health care practitioners, pharmacists and physicians drug information center (DIC) provides an unbiased, in depth source of important drug information. The main purpose of running DIC is to promote rational drug therapy by providing unbiased, current, and accurate information.[5]

The primary function of the center is in accessing to the drug information source and dissemination of the same to the requestor. The World Health Organization (WHO) stated that Drug Information Center is a core component of national programs to promote the rational use of drugs. Drug information is key to preventing medication errors.[6]

OBJECTIVES

- To assess the knowledge on DIC and AMC among community pharmacists.
- To educate the community pharmacists on DIC and AMC
- To assess the impact of education by questionnaires

METHODOLOGY

Study design: A Cross Sectional Questionnaire Based Study
Study site: The study was conducted among Community Pharmacists in Tumakuru city
Duration of the study: 3 months
Sample size: 128 pharmacists
Study Materials: Informed consent form, Drug information query form, Pills, ADR reporting forms.

Study Criteria

Inclusion Criteria

- All Community Pharmacist working in the medical stores.
- Both male and female pharmacists were included.

Exclusion Criteria

- Pharmacists who are not available at the time of study.
- Pharmacists who are not willing to give informed consent form.

Study Procedure

The education materials were prepared before starting the study. After that the data were collected such as

- Name, Age and Qualification.
- Years of experience as a Community Pharmacists.
- Knowledge assessment on Adverse Drug Reaction Monitoring Centre and Drug Information Centre by using pre questionnaires.
- After assessing knowledge were provided.
- Post questionnaires are used to check the quality of the intervention.

Analysis of Results

The data was collected, complied in MS Excel, and analyzed for average and percentages. Graphical representation such as graphs, pie charts and tables has been used for visual interpretation of the analyzed data.

RESULTS

A Cross Sectional Questionnaire based study was conducted in Tumakuru City. A total of 128 pharmacists are actively participated in the study. The demographic details such as name, age, and sex along with information about knowledge on Adverse Drug Reaction, Pharmacovigilance, Drug Information, Adverse Drug Reaction Monitoring Centre and Drug Information Centre were collected by using a suitably designed profile form.

Gender Wise Distribution

The total number of respondents in this study was 128 members. The highest percentages were found to be males 76 (59.4%) compare to female participants 52(40.6%).

Table 1: Gender Wise Distribution.

Gender	No of Pharmacists	Percentage (%)
Male	76	59.4
Female	52	40.6

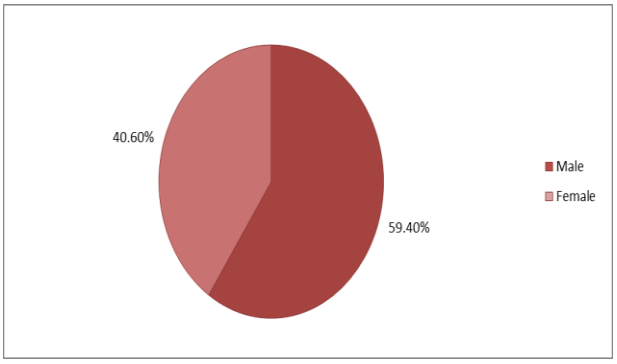

Figure 1: Gender Wise Distribution.

Category Based On Qualification

Among 128 participants majority of the study participants qualification were found to be D Pharm 64 (50%), Others 38 (29.6%) and B Pharm 38 (29.6%).

Table 2: Category Based on Qualification.

Qualification	No of Pharmacists	Percentage (%)
D Pharm	64	50
B Pharm	26	20.4
Others	38	29.6

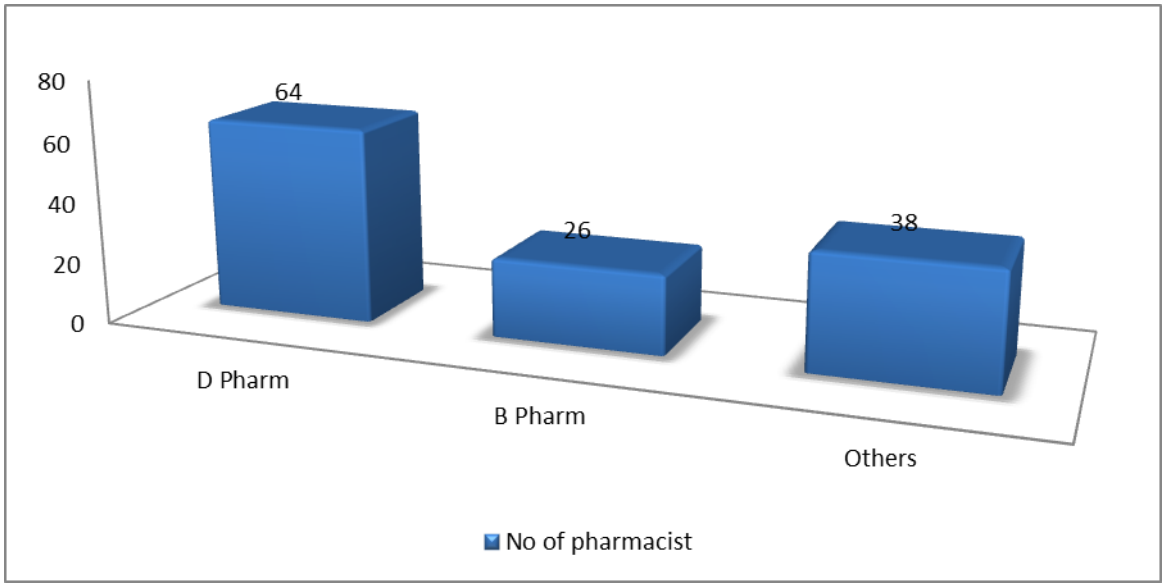

Figure 2: Category Based On Qualification.

Experience Wise Categorization

According to experience of the pharmacists maximum having 1-5years (38.2%) of experience followed by 6-10 years (21%), above 20 years (20.3%), 10-15 years (14%) and 16-20 years (6.2%).

Table 3: Experience Wise Categorization.

Experience	No of Pharmacists	Percentage (%)
1-5years	49	38.2
6-10years	27	21
10-15years	18	14
16-20years	8	6.2
Above 20 years	26	20.3

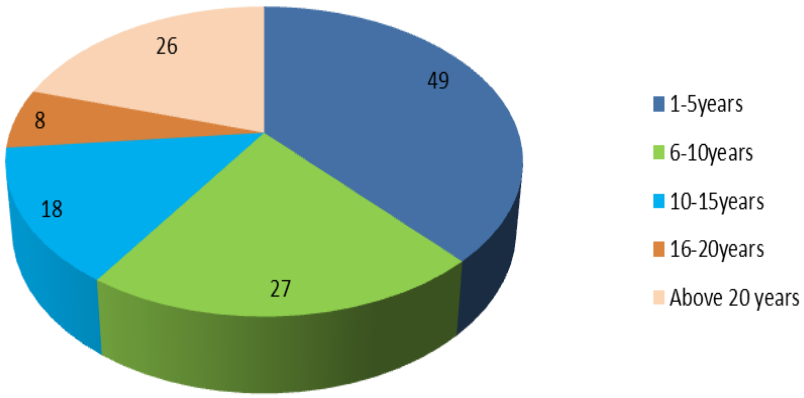

Figure 3: Experience Wise Categorization.

General Knowledge on Adverse Drug Reaction

As shown in the table only 76.5% of the pharmacist knows about ADR followed by (62.5%) aware that drugs will cause ADR, (3.9%)encountered ADR complaints, (2.3%) knows the predisposing factors of ADR and (7.8%) of pharmacists know they have role in identification of ADR.

Table 4: General Knowledge on Adverse Drug Reaction.

SI No	Questions	Yes		No	
		Pharmacists	In Percentage (%)	Pharmacists	In Percentage (%)
1	Do you know about ADR	98	76.5	30	23.4
2	Are you aware that drugs will cause ADR	80	62.5	48	37.5
3	Have you ever encountered ADR complaints	5	3.9	123	96
4	Do you know the predisposing factors of ADR	3	2.3	125	97.6
5	Role of pharmacist in identification of ADR	10	7.8	118	92.1

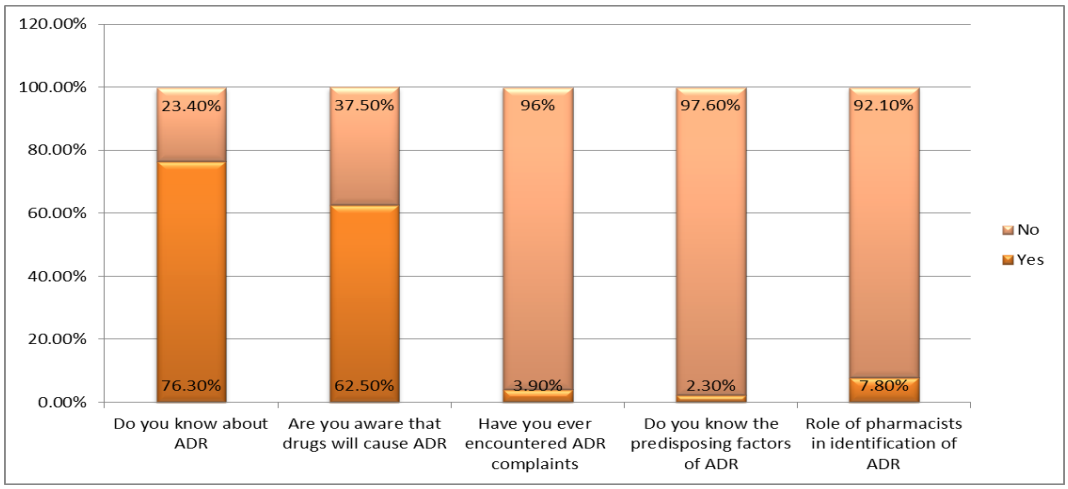

Figure 4: General Knowledge on Adverse drug reaction.

Knowledge on Reporting Of Adverse Drug Reaction

Table 5 shows that (7%) of pharmacists knows about pharmacovigilance program followed by (4%) of pharmacists reported ADR and (3%) of the pharmacists are aware of ADR reporting form and ADR monitoring centre.

Table 5: Knowledge on Reporting of Adverse Drug Reaction.

SI No	Questions	Yes		No	
		Pharmacists	In Percentage (%)	Pharmacists	In Percentage (%)
1	Do you Know about PvPI (Pharmacovigilance program of India)	9	7	119	92.9
2	Have you reported any ADR	6	4.6	122	95.3
3	Are you aware of ADR reporting form	5	3	123	96
4	Do you know the ADR monitoring centre	3	2.3	125	97
5	Whether the Pharmacists can report ADR	40	31.2	88	68.7

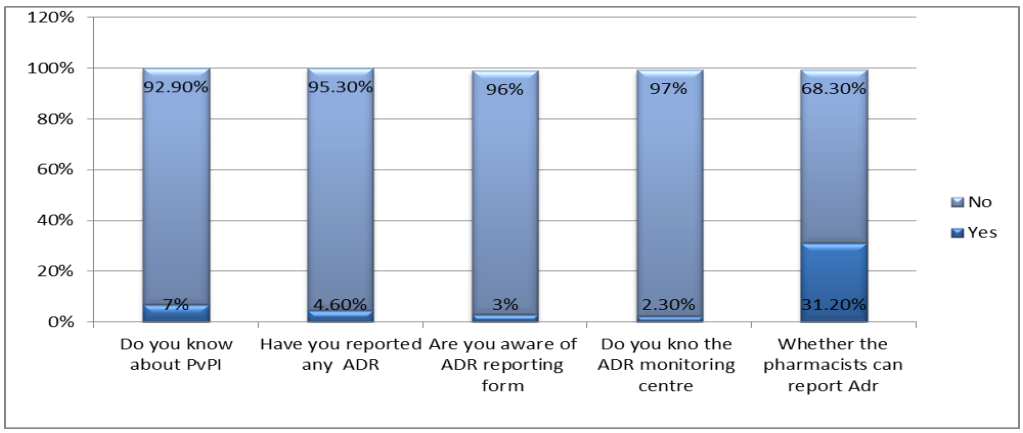

Figure 5: Knowledge on Reporting of Adverse Drug Reaction.

Knowledge Assessment of Drug Information Centre

Table 6 shows that (7.8%) of the pharmacists are aware of the Drug information centre followed by (23.4%) of pharmacists know the resources used in Drug Information Centre, (67.1%) of pharmacists provided drug information to the patients and (26.5%) of pharmacists know they have role in providing Drug information.

Table 6: Knowledge Assessment of Drug Information Centre.

SI No	Questions	Yes		No	
		Pharmacists	In Percentage (%)	Pharmacists	In Percentage (%)
1	Are you aware of DI (Drug information) centre	10	7.8	118	92.1
2	Do you know the resources used in DI centre	30	23.4	98	76.5
3	Have you provided any drug information to the patients	86	67.1	42	32.8
4	Do you have any role in providing DI	34	26.5	94	73.4

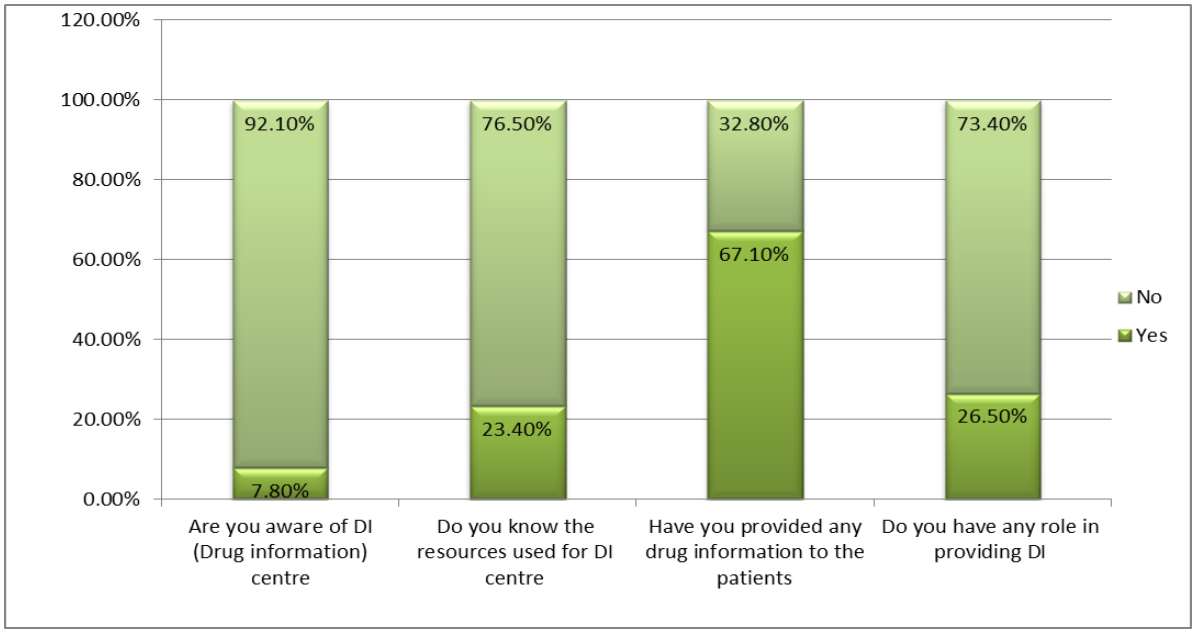

Figure 6: Knowledge Assessment of Drug Information Centre.

Outcome of Intervention

After providing the information about Adverse Drug Reaction, Adverse Drug Reaction Monitoring Centre and Drug Information Centre, role of pharmacists in the ADR reporting and providing drug information to the patients (89%) of the pharmacists said that AMC centre helps in patient safety, (93.7%) of the pharmacists obeyed to report ADR, (92.9%) of pharmacists replied yes that DI will improve quality of life of patients and (77.3%) replied yes that DI centre helps to optimize the drug therapy.

Table 7: Outcome of Intervention.

SI No	Questions	Yes		No	
		Pharmacists	In Percentage (%)	Pharmacists	In Percentage (%)
1	AMC (Adverse drug reaction monitoring centre) helps in patient safety	114	89	14	10.9
2	Whether you will report ADR to AMC or PvPI	120	93.7	8	6.2
3	Whether DI will improve the quality of life of patients	119	92.9	9	7
4	Whether DI centre helps to optimize the drug therapy	99	77.3	29	22.6

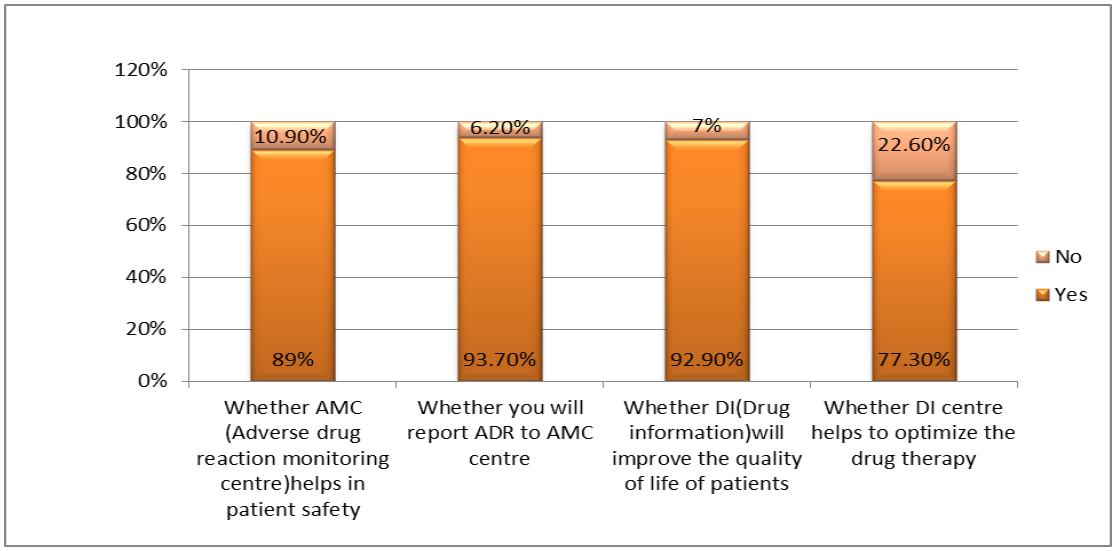

Figure 7: Outcome of Intervention.

SUMMARY

A Cross Sectional Questionnaire based study was conducted in Tumakuru City. The main objective is to assess the knowledge and create awareness about Drug Information Centre and Adverse Drug Reaction Monitoring Centre. A total of 128 pharmacists are actively participated in the study. Pharmacist were subjected to knowledge assessment before interventions results shows 76.5% of the pharmacist knows about ADR followed by (62.5%) aware that drugs will cause ADR, (3.9%)encountered ADR complaints, (2.3%) knows the predisposing factors of ADR and (7.8%) of pharmacists know they have role in identification of ADR. (7%) of pharmacists knows about pharmacovigilance program followed by (4%) of pharmacists reported ADR and (3%) of the pharmacists are aware of ADR reporting form and ADR monitoring centre. (7.8%) of the pharmacists are aware of the Drug information centre followed by (23.4%) of pharmacists know the resources used in Drug Information Centre, (67.1%) of pharmacists provided drug information to the patients and (26.5%) of pharmacists know they have role in providing Drug information. After providing the information about Adverse Drug Reaction, Adverse Drug Reaction Monitoring Centre and Drug Information Centre, role of pharmacists in the ADR reporting and providing drug information to the patients (89%) of the pharmacists said that AMC centre helps in patient safety, (93.7%) of the pharmacists obeyed to report ADR, (92.9%) of pharmacists replied yes that DI will improve quality of life of patients and (77.3%) replied yes that DI centre helps to optimize the drug therapy.

CONCLUSION

Our study concludes that male pharmacists are commonly working in the community pharmacy and majority were completed the D Pharm qualification. Maximum number of pharmacists having lack in the knowledge of Adverse Drug Reaction, Adverse Drug Reaction Monitoring Centre, Drug Information Centre and Pharmaco vigilance Program of India. So, proper education and awareness program were essential for pharmacists to improve the patient safety, providing drug information, preventing and minimization of Adverse Drug Reaction. Awareness raising programs about ADR reporting system need to be designed to community pharmacists along with increasing the options of reporting would improve the reporting.

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CONFLICT OF INTEREST

The authors declared no conflict of interest.

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