Awareness And Perception Experiences On Adverse Drug Reaction Among Doctors, Nurses & Pharmacists Of A Tertiary Care Rural Teaching Hospital.

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1. Introduction

Every drug has its own beneficial and detrimental effects. While the efficacy of the drug can be quantified with ease, the safety of the drug cannot be quantified[2]. The dose of the drug determines whether it is a medicine or a poison. Unnecessary and undesirable effects of a drug cause a wide range of morbidity and mortality. Adverse drug reaction has a major impact on public health by imposing a considerable economic burden on the society and the already-stretched health-care systems[13]. These effects can be traced back to the Thalidomide disaster[14]. These effects range from the spontaneous reaction or effects due drug overdose, intolerance, effects due to sudden drug withdrawal, teratological effects, drug abuse etc. It is estimated that ADRs account for 0.2 – 24% of hospital admissions and 3.7% of patients have fatal ADRs[15] (Extreme age patients have a higher incidence of ADRs when compared to normal population

Recent estimates suggest ADRs to be the fourth major cause of death in the United States of America (USA). While no official scale exists yet to communicate overall drug risk, the iGuard Drug Risk Rating System (Ref) classifies the drugs into five classes as: Red (high risk), Orange (elevated risk), Yellow (guarded risk) and, Blue (general risk), Green (low risk). The reporting of ADRs could reduce the incidence of ADRs [3].

Pharmacovigilance relates to detection, assessment, understanding and prevention of adverse effects or any other drug related problems. The main source of ADR data are spontaneous reporting by doctors, nurses, and Pharmacists from their experiences on ADRs reporting centers prevailing in hospitals, clinical trials including post marketing surveillance and some special studies like case control studies and cohort studies. Spontaneous reporting accounts for successful Pharmacovigilance.

The Uppasala Monitoring Centre, established by the WHO maintains an International Database adverse drug reports (currently about 4.7 million case reports) received from several national centers (96 member countries). However, still, it is estimated that only 6-10% of all ADRs are reported[4]. This high rate of under-reporting can delay signal detection and consequently has negative impact on to public health. Many factors are associated for under-reporting ADRs among health professionals. These factors have been broadly classified as personal and professional characteristics of health care professionals and their knowledge and attitudes to reporting[1].

The monitoring of ADR is still evolving in India. After decades of hibernation, the National Pharmacovigilance program started in 2004 is still in its infancy. India became a collaborating member of the WHO-ADR monitoring program 30 years after its establishment. The pattern of drug use and ADRs in India is quite different due to socio-economic, ethnic, nutritional and other factors[8]. The Drug Controller General of India (DCGI) and Indian Council of Medical Research (ICMR) have established ADR monitoring centers in many hospitals in the major cities of India. The CDSCO, New Delhi (Ref) is the central coordinating body under which two zonal; five regional and 24 peripheral centers have been established[3]. The WHO worldwide and the CDSCO, India has banned many drugs. Some of the recently banned drugs in India are gatifloxacin and sibutramine due to their wide range of detrimental effects. Though many studies have established the lack of awareness of health care professionals on drug reporting to the Pharmacovigilance Centre, prevent study was undertaken to know the status among health care physicians of our Centre.

2. Review of literature

Earlier studies were conducted on the awareness of adverse drug reactions and their reporting among health care professionals. Adverse reactions account for 5% of hospital admissions and causes death in 0.1% of hospital inpatients(Ref). This is mainly because the number of drug prescribed is high and a number of new drugs are introduced in the market It increases the costs of patient care, causes the patient to lose confidence in their doctors. Spontaneous drug reporting schemes form the cornerstone of clinical post marketing surveillance. Since 1964, in the UK reporting has been restricted to the doctors and dentists but recently reporting scheme for pharmacists has been introduced while in the US even patients are allowed to report of the ADRs [7]About 90% of doctors are aware of the National Pharmacovigilance center in India but only 40% of them have reported any suspected adverse drug reactions to the ADR to the monitoring centre[1,2].But in other studies the awareness is only 43% and only 2% of doctors have reported to the ADR

monitoring centre[3] .More than 90% of doctors feel that this system is beneficial and in improving the patient care[1].Doctors suggest that the assistance of pharmacist would help in detection, management and reporting of ADR(95%)[2].Lack of confidence of giving a negative feedback prevents the doctors from reporting of ADRs. Mild adverse reactions , the knowledge to manage and immediate management also prevent the reporting of ADRs. Educating the nursing staff will also improve the reporting of ADRs. Nearly 85% of ADRs were reported among inpatients[4]. There is a higher incidence of ADRs among the pediatric and the geriatric age groups[7] .Doctors feel that the reporting of ADRs is a professional obligation(80%)[3].About 85% of the doctors feel that the reporting of ADR should be voluntary. Some also feel that the reporting should be enumerated. When asked about the classification of ADRs only 80% of the prescribers were able to classify them[6]. About 60% of the doctors feel that ADRs should be reported to the HOD, 43% to the department of pharmacology and only 6% National ADR monitoring center and 56% to the WHO ADR monitoring centre[6]. Naranjo algorithm is used for estimating the probability of a drug causing adverse reaction. Many of the practitioners feel that only allopathic drugs and vaccines cause ADRs[3].

3. Aim and Objectives

1. To find out personal experience on the ADRs among health care professionals.
2. To elicit the knowledge, attitude and practice among health care professional in terms of ADR among them

4. Material and Method

The present work on awareness and personal experiences on adverse drug reaction among doctors, nurses and pharmacist was carried out in our 600 bedded teaching hospitals where 150 Doctor (Faculty and senior residents), 260 Nurses and 25 Pharmacists have been employed. The Institutional Ethical Committee approved the work. The questionnaires were also given to other 35 pharmacists employed in a near by Health Centre and in pharmacy shops. They were explained about the objectives of the study and asked to answer the question and returned to us. The colors of the questionnaires used for Doctors were pink, Nurses were green and pharmacists were white. Then they were segregated and the data were entered in Microsoft Excel spread sheet and analysed using SPSS software version 17.

- **Design of study: -** Questionnaire Survey method involving Doctors, Nurses and Pharmacists.
- **Place of study:** Tertiary care rural teaching hospital with 560 beds with bed occupancy of 82%, and 900 out patients per day.
- **Materials:** Doctors (200),\Nurses (260) Pharmacists(20)employed in the hospital were be the subjects of study
- **Inclusion criteria:** Only Doctors, Nurses and Pharmacist willing to participate in the study were included
- **Method:** A Common questionnaire was issued to every doctor, nurse and pharmacist after a brief description, and they were requested to answer each question/ statement.
- **Period of study: JUNE TO SEPTEMBER 2011**
- **Data analyzing:** Data were be entered in MS excel sheet and analyzed using SPSS Package V.17
- logical drugs cause high incidence of ADR followed by antibiotics. Among the antibiotics Amoxicillin, Cephalosporin's and Clindamycin are the most important in causing ADRs. NSAIDs also cause some adverse drug reactions. Some established ADRs are chloramphenicol induced aplastic anemia(Ref), NSAID induced hepatitis or nephritis, antithyroid drugs causing granulocytopenia and phenylpropalamine induced cerebral hemorrhage. ADRs to new drugs are NSAID induced upper g.i hemorrhage, reduced libido by new SSRIs like sertraline, fluoxamine, hypersensitivity reactions to montelukast, Zafirlukast.Skin manifestations were the important manifestation affecting for 2-3% of hospitalized patients followed by edema, cough, vomiting, diarrhea, hypoglycemia, liver failure and renal failure[4] The management an ADR includes drug withdrawal, introducing a new drug or reducing the dose[4, 7].

5. Results and observation

Of the 141 questionnaires were distributed, 72 for doctors, 46 for pharmacists, 23 for nurses returned the questionnaire.

The age of the respondents varied from 30 years to 60 years with experience from 1 year to 30 years in tertiary care teaching hospital in Trichy.

The questions are classified into three categories to know about 1. Awareness & .personal experiences on ADRs, 2 ADRs in medical practice and 3.Phamacovigilance.

6. Discussion

This study establishes about the knowledge and experiences about the ADRs among the health care professionals. Books remained the main source knowledge of ADRs among health care professionals. This was followed by seminar among doctors and pharmacists. Nurses came to know about ADRs from somebody. This shows the lack of awareness of the nursing staff about ADRs.

When asked to rate about their knowledge on ADR, majority of the respondents feel that they have a moderate knowledge on ADRs. Nearly 50% of pharmacists feel their knowledge was good on ADR. This shows the need for conducting seminars and symposium on ADRs and their management.

Table.1. Awareness and personal experience

	Doctors (n=72)	Nurses (n= 23)	Pharmacist (n=34)
Books	56 (77.8%)	19 (82.6%	22 (64.7%)
From somebody	6 (8.3%)	2 (8.7%)	3 (8.8%)
Seminar	7 (9.7%)	1 (4.3%)	9 (26.5%)
Symposium	3 (4.2%)	1 (4.3%)	0

Books remained the main source knowledge of ADRs among health care professionals. This was followed by seminar among doctors and pharmacists. Nurses came to know about ADR from somebody.

Table 2: Cause of ADRs

	Doctors(n=72)	Nurses (n= 23)	Pharmacists(n=34)
Disagree	24 (1.4%)	4(17.4%)	2(8.7%)
Uncertain	38 (12.5%)	1(4.3%)	12 (26.1%)
Agree	9 (52.8%)	10 (43.5%)	5 (21.7%)
Strongly agree	1 (33.3%)	8(34.8%)	15 (43.5%)

The respondents agree that drugs remain the main cause of ADRs. Only a few disagree that drugs were not a cause of ADRs

Table.3.When asked to rate about their knowledge on ADR, majority of the respondents feel that they have a moderate knowledge on ADRs. Nearly 50% of pharmacists feel their knowledge was good on ADR

	Doctors(n=72)	Nurses(n= 23)	Pharmacists (n=34)
Poor	3 (1.2%)	1 (1.3%)	2 (6.5%)
Moderate	48 (66.7%)	14(60.9%)	13 (47.8%)
Good	15 (20.8%)	6 (26.1%)	18 (43.5%)
Very good	6 (8.3%)	6 (8.7%)	1 (2.2%)

Table .4. More than 60% of respondents felt that they had sufficient knowledge to manage ADR

	Doctors(n=72)	Nurses(n= 23)	Pharmacists(n=34)
Yes	45 (62.5%)	14 (60.9%)	13 (32.6%)
No	14 (19.4%)	5(21.7%)	5 (7.4%)
Uncertain	13 (18.1%)	4(17.4%)	16(50.0%)

Nearly 40% of the respondents disagree that alternative medicines do not cause ADRs. But according to many studies, allopathic drugs and vaccines cause ADR.Majority of the respondents say that only less than 2 patients report to them with ADRs but according to a recent study 2.9-5% of all hospital admissions are caused by ADRs and nearly 35% of patients experience ADR during hospital stay[8].

Table. 5. Nearly 50% of doctors and nurses have not reported of about ADR to the Pharmacovigilance center. About 40% of pharmacists have reported to the pharmacovigilance center.

	Doctors(n–72)	Nurses (n– 23)	Pharmacists (n–34)
Yes	18 (25%)	8 (34.8%)	15 (37.0%)
No	41 (56.9%)	11 (47.8%)	5 (19.6%)
Uncertain	13 (18.1%)	4 (17.4%)	14 (43.5%)

Table.6. More than 50% of respondents feel that uneducated patients reported of the ADRs. About 55% of doctors feel that even educated patients reported with ADRs. About 50% of doctors feel that ADRs were common among outpatients. But nearly half of the nurses responded feel that inpatients reported with ADRs. Pharmacists feel that ADRs were common among both inpatients and outpatients.

	Doctors (n=72)	Nurses (n= 23)	Pharmacists (n=34)
Educated	16 (22.2%)	4 (17.4%)	12 (34.8%)
Uneducated	24 (33.3%)	8 (34.8%)	8 (28.3%)
Inpatient	19 (26.4%)	8 (34.8%)	9 (23.9)
Outpatient	13 (16.7%)	3 (13.0%)	5 (13.0%)

Table.7.Management of ADRs

	Doctors	Nurses	Pharmacists
Giving another drug	61(84.7%)	19 (82.6%0	31(91.2 %)
Drug withdrawal	69 (95.8%)	18 (78.3%)	20 (58.8%)
Refer to other doctor	18 (25%)	28 (47.8%)	16 (47.6%)
Explain to patient	60 (83.3%)	17 (73.9%)	18 (52.9%)

When the respondents were asked about the drugs causing ADRs, antibiotics and analgesics was the major group of drugs. Of these sulpha group of drugs, metronidazole, 3rd generation cephalosporins, NSAIDS like diclofenac, tramadol cause important ADRs. Metformin, metoclopramide, cisapride, antiulcer drugs were the other group of drugs causing ADR

When the respondents were asked about the drugs causing ADRs, antibiotics and analgesics was the major group of drugs. Of these sulpha group of drugs, metronidazole, 3rd generation cephalosporins, NSAIDS like diclofenac, tramadol cause important ADRs. This is mainly because these are the most common therapeutic agents used in medical practice and the over usage and the unwanted usage of these drugs by the patients.

The main manifestations produced by these drugs were skin rashes, epigastric pain, nausea, vomiting, diarrhea, followed by hypoglycemia, dizziness, drowsiness, seizure, tachycardia, tremors etc. These ADRs can be prevented by the restricted use and reduced dosage of the prescribed drugs.

Majority of respondents feel that the ADRs would be managed by giving another drug and withdrawal of the drug causing ADR. These were mainly managed by stopping the drug, treating with drugs like steroids, H_2 blockers, proton pump inhibitors, adrenaline etc. Thus adequate knowledge of the management of ADRs and immediate management of the same are the important drawbacks which prevent the reporting of ADRs among health care professionals.

Only 25% of doctors would refer the case of ADR to another doctor. But nearly 50% of nurses and pharmacist feel that the cases of ADR could be referred to another doctor. This shows that the doctors are able to manage and treat the ADRs reported by the

patients. More than 50% of the responders would explain about the ADR caused by the drug to the patient. They would also ask the patient to report immediately in case of ADR encountered and to carry the previous history of drugs causing ADRs. In this way the patient would be benefited by preventing over dosage, continued use of the drug and immediate treatment. This would also help in reducing the fear of the patients.

Name Of The Drug						
Drug Name	Doctor(n=72)		Nurse(n=23)		Pharmacist(n=34)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
ATT	7	9.7	1	3.8	1	2.2
ART	2	2.8	1	3.8	5	10.9
CHEMOTHERAPUTIC DRUG	38	52.8	14	53.8	17	37.0
NSAIDs	13	18.1	3	11.5	5	10.9
OPIOID ANALGISIC	1	1.4	0	0.0	1	2.2
IT DRUG	1	1.4	0	0.0	1	2.2
IRON & VIT	4	5.6	3	11.5	5	10.9
ANESTHETIC	1	1.4	1	3.8	0	0.0
ANTIHYPERTENSIVE	3	4.2	1	3.8	1	2.2
ORAL HYPOGLYCIMIC	1	1.4	0	0.0	2	4.3
STERIOD	0	0.0	1	3.8	5	10.9
ANTIPSYCHOTIC		0.0	1	3.8	1	2.2
OTHER	1	1.4	0	0.0	2	4.3
TOTAL	72	100	26	100	46	100
The main manifestations produced by these drugs were skin rashes, epigastric pain, nausea, vomiting, diarhoea, followed by hypoglycemia, dizziness, drowsiness, seizure, tachycardia, tremors etc.						

Management Of Adrs/Treatment						
	Doctor(n=72)		Nurse(n=23)		Pharmacist (n=34)	
	Freq	Percent	Freq	Percent	Freq	Percent
NO TREATMENT	17	23.6	5	19.2	11	23.9
STOP THE DRUG	14	19.4	3	11.5	7	15.2
ADRENALINE	3	4.2	3	11.5	6	13.0
AVIL	5	6.9	3	11.5	4	8.7
STREROIDS	17	23.6	4	15.4	5	10.9
PPI	8	11.1	4	15.4	7	15.2
RANITIDINE	8	11.1	4	15.4	6	13.0
	72	100	26	100	46	100
Majority of respondents feel that the ADRs would be managed by giving another drug and withdrawal of the drug causing ADR. Only 25% of doctors would refer the case of ADR to another doctor. But nearly 50% of nurses and pharmacist feel that the cases of ADR could be referred to another doctor. More than 50% of the esponders would explain about the ADR to the patient. They would also ask the patient to report immediately in case of ADR encountered and to carry the previous history of drugs causing ADRs						

When the respondents were asked about their awareness of the types of ADRs, nearly 70% of the respondents were aware of the types of ADRs. This establishes adequate knowledge of health care professionals of the types of ADRs. But in other studies conducted among prescribers, only 30% of them were able to describe the types of ADRs[6].

About 50% of doctors and nurses discuss with head of the department of the ADRs experienced by them. But 55% of pharmacists get help from the Pharmacovigilance Center. This agrees with the results that about 60% 0f prescribers feel that ADR should be reported to head of the department and only 5% to the National ADR monitoring centre[6]. In other study conducted by (Amrita P et al) [8], only 8.84% of physicians feel that the reporting of ADR can be done at National Monitoring Center and the Regional Monitoring

Centers[8].

Nature Of Adrs						
	Doctor (n=72)		Nurse(n=23)		Pharmacist(n=34)	
	Freq	Percent	Freq	Percent	Freq	Percent
STOMACH PAIN	8	11.1	5	19.2	9	19.6
RASH	5	6.9	1	3.8	5	10.9
ST SYNDROM	4	5.6		0.0	1	2.2
EDEMA	7	9.7	2	7.7	4	8.7
ITCHING	6	8.3	2	7.7	1	2.2
SWELLING LIP	2	2.8	1	3.8	1	2.2
TACHYCARDIA	6	8.3	1	3.8	5	10.9
VOMITING	8	11.1	3	11.5	6	13.0
DIRRHOEA	5	6.9	3	11.5	5	10.9
HYPOGLYCEMIA	7	9.7	2	7.7	2	4.3
COUGH					1	2.2
SKIN ERUPTION	2	2.8	2	7.7	1	2.2
DIZZINESS	0	0.0	1	3.8		0.0
ULCER	0	0.0	2	7.7		0.0
CONVULSION	3	4.2	1	3.8	1	2.2
ALLERGY	8	11.1		0.0	4	8.7
ANAPHYLAXIS	1	1.4				
TOTAL	72	100	26	100	46	100
These were mainly managed by stopping the drug, treating with drugs like steroids, H_2 blockers, proton pump inhibitors, adrenaline etc.						

Table.8.Referring to another doctor (Only 30% of doctors and nurses were aware of the National Pharmacovigilance Program started by the CDSCO. On the contrary, 54.3% of pharmacists were aware the program)			
	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Yes	19 (26.4%)	7 (30.4%)	22 (54.3%)
No	28 (66.7%)	16(69.6%)	10 (30.4%)
Uncertain	5 (6.9%)	0	1 (15.2%)

Table .9. About 60% of doctors and pharmacists feel the program was good. But nearly 50% of nurses and 40% of doctors feel that it is complicated.			
	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Good	42(58.3%)	15(65.2%)	24 (70.6%)
Complicated	27 (37.5%)	4(17.4%)	6 (17.6%)
Unnecessary	2(2.8%)	4 (17.4%)	4 (11.8%)
Missing	1 (1.4%)		

Table.10. About 60% of pharmacists have undergone training reporting of ADR but only 13% of nurses and 5% of doctors have been trained on the same			
	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Yes	3 (4.2%)	3 (13%)	20(58.8%)
No	68 (94.4%)	20 (87%)	14 (41.2%)
missing	1 (1.6%)		

Table.11. About 90% of doctors and nurses have not seen the ADR reporting form by CDSCO in contrast 65% of pharmacists have seen the same

	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Yes	6(8.3%)	4 (17.4%)	22 (64.7%)
No	66(91.7%)	19(82.6%)	12(36.3%)

Table .12. Nearly 65% of the responders would gladly accept when asked to report about ADRs experienced by them on a regular basis

	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Gladly accept	49 (68.1%0	13 (56.5%)	27 (79.4%)
Do it just like that	14(19.4%)	4 (17.4%)	6(17.6%)
Just ignore it	9(12.5%)	5 (21.7%)	1 (2.9%)
missing		1(4.3%)	

Table.13. Nearly 70% of the respondents say that only less than 2 patients report to them of the ADRs experienced by them.

	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
0-1	54 (75%)	14 (23.7%)	29(85.3%)
1-2	10(13.9%)	4 (6.8%)	2(5.9%)
3-4	6 (8.3%)	3 (5.1%)	3 (8.8%)
5-6	1 (1.4%)		
>6	1 (1.4%)	2 (3.4%)	

Table.14. Response towards ADRs reporting

	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Filling ADR reporting form	11 (15.3%)	2 (8.7%)	2 (8.8%)
Inform by telephone	9 (12.5%0	3(13%)	7 (30.4%)
Discuss with HOD	33 (46.8%)	16(69.6%)	6 (13.0%)
Contact dept of Pharmacology	8 (11.3%)	2(8.7%)	0
Help from Pharmacovigilance center	10(13.9%)		19 (47.8%)
Missing	1 (1.4%)		

About 50% of doctors and nurses discuss with head of the department of the ADRs experienced by them. But 55% of pharmacists get help from the Pharmacovigilance Center
When the respondents were asked about their awareness of the types of ADRs, nearly 70% of the respondents were aware of the types of ADRs.

Only 30% of doctors and nurses were aware of the National Pharmacovigilance Program started by the CDSCO. On the contrary, 64.7% of pharmacists were aware the program. About 60% of doctors and pharmacists feel the program was good. But nearly 50% of nurses and 40% of doctors feel that it is complicated. In other studies adopting the ADR system, which is simple to operate, monitoring the new drugs, creating awareness among medical staff would enhance ADR reporting rates[1]. This coincides with other studies, which establishes that only 43% 0f doctors were aware of the National Pharmacovigilance Centre in India[3]. But according to

other studies nearly 90% of doctors were aware of the program[2].

Table.15.Type A (pharmacological adverse effects)			
	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Yes	58 (80.6%)	12 (52.2%)	14 (41.2%)
No	13 (18.1%)	8 (34.8%)	5(14.7%)
Uncertain	1 (1.4%)	3 (13%)	15(44.1%)
Type B (immunoallergic reactions)			
	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Yes	58(80.6%)	13(56.5%)	28 (82.4%)
No	13(18.1%)	8(34.8%)	4(11.8%)
Uncertain	1(1.4%)	2(8.7%)	2(5.9%)
Type C (spontaneous diseases):			
	Doctors (n=72)	Nurses(n=23)	Pharmacists(n=34)
Yes	50(69.4%)	16(69.6%)	29 (85.3%)
No	18(25.4%)	7(30.4%)	2(5.9%)
Uncertain	4(5.6%)	0	3(8.8%)

Table.16. Alternative medicine and ADRs			
	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Strongly disagree	11(15.3%)	5(8.5%)	6(17.6%)
Disagree	9(12.5%)	10(16.9%)	12(35.3%)
Uncertain	33(45.8%)	8(13.6%)	12(35.3%)
Agree	8(11.1%)	1(4.3%)	4(11.8%)
Strongly agree	10(13.9%)		
Missing	1(1.4%)		
Nearly 40% of the respondents disagree that alternative medicines do not cause ADRs. More than 70% of the respondents feel that allopathy is the safest medicine. Nearly 15% of the doctors and 8% of doctors and nurses and pharmacist feel that homeopathy is also safe. But according to 16% of doctors and 20% of pharmacists, ayurveda also remains to the safest mode of medicine.			

Table.17. Safest medicine			
	Doctors(n=72)	Nurses(n=23)	Pharmacists(n=34)
Allopathy	43(59.7%)	15(65.2%)	31(91.2%)
Homeopathy	11(15.3%)	2(8.7%)	3(8.8%)
Ayurveda	12(16.7%)	5(21.7%)	
Unani			
Chinese			
None	6(8.3%)		

About 60% of pharmacists have undergone training reporting of ADR but only 13% of nurses and 5% of doctors have been trained on the same. This could be mainly due to inadequate training of the prescribers in their undergraduate about Pharmacovigilance and the risks of drugs. Under the guidelines of the MCI in 1997, Drug Safety was included in the curriculum of Undergraduates but only a little is done in this regard[11]. This shows that assistance of pharmacists would help in detection, reporting and the management of ADRs[1]. Training programs conducted among the doctors and nurses would help them to know about the National Pharmacovigilance program.

Nearly 50% of doctors and nurses have not reported of about ADR to the Pharmacovigilance center. About 40% of pharmacists have reported to the Pharmacovigilance center. It is said that ADR monitoring is done in hospitals without any further documentation

and reporting[7]. Active involvement of the paramedical staff in spontaneous reporting would improve the ADR rates as they are in closer contact with the patients for a long time than doctors[3].

About 50% of doctors feel that ADRs were common among outpatients. But nearly half of the nurses responded feel that inpatients reported with ADRs. Pharmacists feel that ADRs were common among both inpatients and outpatients. When the nature of ADR was studied among the patients in a hospital nearly 80% of ADRs were reported among inpatients[6]

Nearly 60% of the responders would gladly accept when asked to report about ADRs experienced by them on a regular basis. It is evident from various studies that the reporting of ADRs is a professional obligation and it should be voluntary. But some also feel that the reporting of ADR should be renumerated[3, 7]

7. Conclusion

This study has a major drawback it could be applied to a wide medical community. This study gaps between the knowledge of National Pharmacovigilance Centre and the reporting of Adverse Drug Reaction to the monitoring Centre. Continuous medical education, training of adverse drug reaction reporting would help in improving the knowledge of both medical and paramedicl staff about the reporting of ADRs.

8. Summary

The study was done to know about the knowledge and Personal experiences of adverse drug reactions and their reporting among doctors, nurses and pharmacists. This is a questionnaire type of study and the questionnaires were distributed to the doctors, nurses and pharmacists. Books were the main source of knowledge about Adverse Drug Reactions according to the respondents, antibiotics and NSAIDS were the most common drugs causing ADRs manifesting as skin rashes. Epigastric pain, nausea, vomiting, diarrhoea etc. Though a majority of the respondents were aware of the National Pharmacovigilance started by CDSCO, any a few have reported the ADRS experienced by them to the reporting Centre. About 80% of the respondents agree that alternative medicines do not cause ADRs and allopathic is the safety medication. This study suggests that the awareness of Adverse Drug Reaction reporting and monitoring should be increased and training programs on the same to be conducted.

9. References

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QUESTIONNAIRE FORMAT

Sir/Madam/friends

Please read the questionnaire/ statement and answer to each for our proposed research work "*AWARENESS AND PERSONAL EXPERIENCES OF ADVERSE DRUG REACTIONS (ADRs) AMONG DOCTORS, NURSES & PHARMACIST OF A TERTIARY CARE RURAL TEACHING HOSPITAL"*. Please tick for any option chosen or write in the space provided for additional answers. Your participation to be greatly appreciated and we need your views and ideas to initiate teaching and training program on ADRs.

Thank you very much for your co-operation

STUDY TEAM:
GUIDE: Dr. ARBIND KUMAR CHOUDHARY - 9442511688
STUDENT: S.NIVEDHITHA
DEPARTMENT OF PHARMACOLOGY, CMCH&RC, IRUNGALUR,TRICHY

DEMOGRAPHIC PROFILE:

1. Year of birth	2.Gender	3.Highest educational qualification	4. Designation	5.Yrs of med practice

AWARENESS & PERSONAL EXPERIENCES ON ADRs

6. How did you know about ADRs? (a)Books (b)Somebody told me about ADRs (c)Seminar (d)Symposium (e)Others specify

7. Have you ever personally experienced ADRs ?a)Yes(b)No If yes,

Name of drug causing ADR	Nature of ADR experienced	Treatment (yes/ no)	No. of days of treatment	Drug used for treatment

(i). My knowledge of ADR is sufficient to treat: (a) Yes (b) No
(c) Uncertain

(ii). I fell that I have adequate skills/knowledge to manage reaction : (a) Yes (b) No (c) Uncertain
(iii)I report to ADRs monitoring center or pharmacovigilance center:
(a) Yes (b) No (c) Uncertain
(iv). Others, specify...
13. What kinds of patients come to you with ADR?
(a)(1)Educated (2) Uneducated
(b) (1) Inpatient (2) Outpatient
14. What do you do with the patient with ADRs?
(i) By giving another drug: (a) Yes (b) No (c) Uncertain
(ii) Drug withdrawal: (a) Yes (b) No (c) Uncertain
(iii) Refer the case to another doctor: (a) Yes (b) No (c) Uncertain
(iv) Do you explain the ADR to the patient ? (a) Yes (b) No (c) Uncertain
(v) If yes, what will you tell the patient: please mention below:
PHARMACO VIGILANCE
15. Do you know Pharmacovigilance program started by Govt of India &CDSCO?
(a) Yes (b) No (c) Uncertain
If yes, how do feel about Pharmacovigilance program?
(a). Good (b) Complicated (c) Unnecessary (d) Others, Specify
16. Have you undergone any training to report on ADR? (a)Yes (b)No

17. Have you seen the ADR reporting form by CDSCO? (a)Yes (b) No

18. Will you report ADRs to the pharmacovigilance center, if you have to do it on a regular basis?
(a)Gladly accept (b)Do it just like that (c)Just ignore it (d)Others specify:

19. About how many ADRs patient do see weekly in your practice?
(a). 0-1 (b). 1 - 2 (c). 3 - 4 (d). 5 - 6 (e). >6
20. How do you communicate with your pharmacovigilance center, if patients come with unusual ADRs signs?
(a)Filling ADR reporting form, (b) Inform by telephone
(c)Discuss with head of department, (d) Contact Department of Pharmacology
(e)Get help of pharmacovigilance center
21. Are you familiar with types of ADRs? (a)Yes (b)no (c)uncertain
22. Have you heard of the following?
I. Type A adverse effects (pharmacological adverse effects): (a) Yes
(b) No (c) Uncertain
II. Type B adverse effects (Immunoallergic reactions): (a) Yes (b) No (c) Uncertain
III. Type C adverse effects (spontaneous' disease): (a) Yes (b) No SSS (c) Uncertain
IV. Occurring in special situations- specify……..
23. Alternative medicine do not cause adverse drug reaction? (a) strongly disagree (b) disagree (c) Uncertain (d) agree (e)strongly agree

24. Which is the safest medication?
a). Allopathic b). Homeopathic c). Ayurvedic d). Unani e) Chinese f) others specify…….
25. .I do not discuss adverse effects of medicine which I prescribe to patients Yes/ No / Uncertain
If yes, please mention why
26. Your suggestions with reference to ADRs and pharmacovigilance program: 1.
2.

3.
Thank you for participation. Please check you have answered all the questions