KNOWLEDGE, ATTITUDE AND PRACTICE OF HEALTH PROFESSIONALS TOWARDS ADVERSE DRUG REACTION (ADR) REPORTING IN JIMMA ZONE HOSPITALS, SOUTH WEST ETHIOPIA

Chalachew Teshale[1*], Rahel Melaku[1]

[1]Jimma University, School of pharmacy, Pharmacology and therapeutics course team
P.O.Box 378, Jimma University, Jimma, Ethiopia:

email:chaleph@gmail.com or chale.teshi2007@yahoo.com

Summary

Spontaneous adverse drug reaction (ADR) reporting is the corner stone of pharmacovigilance. ADR reporting with yellow post has tremendously improved safety of drugs. The aim of this study was to assess the knowledge, attitude and practice (KAP) of health professionals towards ADR reporting in Jimma zone hospitals, South Western Ethiopia and to suggest possible ways of improving reporting. A cross sectional study was conducted using a structured self-administered questionnaire and the data was compiled and analyzed using SPSS version 16.0 stastical soft ware. All health professionals found in the data collection period were included in the study.
A total of 203 health professionals (143 males and 60 females) were interviewed. Among this only,76(37.4%) were awared about the presence of national ADR reporting centre in Ethiopia and only 42 (20.6 %) were aware of the yellow prepaid post in Ethiopia. 82 (40.4%) of the respondents were encouraged to report ADR if the reaction is to a new product. Education and training on how to report ADR to health professionals was the most emphasised means of improving ADR reporting. Only 8.8% of the respondents had ever reported using the yellow
Most of the respondents believe on the importance of ADR reporting but there is a knowledge gap on how to report. Most of the respondent's did not report ADR in their life time. The majority of the respondents emphasized on education and training to fill this gap.

Key words: - spontaneous adverse drug reaction (ADR) report, health professionals

Introduction

An adverse drug reaction (ADR) is known to cause considerable morbidity and mortality. About 6% of all hospital admissions have been shown to be due to ADRs and fatal ADRs rank among the most common causes of death in the United States. The economic burden of ADRs is also considerable, for example in United States, annual total cost of 47.4 billion dollar for 8.7 million drugs related admissions were reported (1).

Post marketing surveillance of drugs is very important in analyzing and managing the risks associated with drugs once they are available for the use of the general population. Spontaneous reporting, a primary method of drug pharmacovigilance system, contributed a significant role in maintaining safety of the patients. The contribution of health professionals, in this regard, to ADRs databases is enormously significant and has encouraged ongoing ascertainment of the benefit risk ratio of some drugs as well as contributed to signal detection of unsuspected drug (2).

Ethiopia like many other countries in the world collects ADR reports on voluntary basis from all health professionals .The national center, Drug Administration and Control Authority (DACA), ADR monitoring and control division was established in 2001.Despite all these only small number of ADR reports are received. Only 250 ADR reports were received until 2007.This is relatively small when compare to other countries worldwide (3).

Though spontaneous reporting system provides a lot in tackling of ADR early before devastating effect, under reporting remains a major drawback of spontaneous reporting .It is estimated that only 6-10% of all ADRs are reported. This high rate of under reporting can delay signal detection and consequently impart negatively on the public health (4).

In the review of determinants of ADRs under-reporting from the global perspective, factors associated with professional activity (financial incentives, fear and ambition to publish) seem to contribute less significantly to under-reporting. Insecurity (the belief that it is nearly impossible to determine whether or not a medicine is responsible for a particular ADR) is another factor associated with under-reporting but was not proposed by Inman. It therefore appears that factors that promote under-reporting may vary from one country to another (5-7).

Although spontaneous ADR reporting system has existed in Ethiopia, the knowledge, practice and attitude of health professionals are not thoroughly investigated yet. Therefore, the purpose of this study is to assess the Knowledge, Attitude and Practice of health professionals working in Jimma Zone Hospitals (Jimma university specialized Hospital and Limmu Hospital) and to obtain ways to improve the pharmacovigilance system of these country.

Materials and methods

A cross sectional study was conducted on health professionals in Jimma zone hospitals (Jimma university specialized hospital, Limmu hospital), Oromia region, southwest Ethiopia from February 30-March 6/2010.

Jimma university specialized hospital is a specialized hospital where multi disciplinary team of professionals provide ranges of health services. The hospital has 68 physicians, 184 nurses, 8 pharmacists, 5 druggists, and others. The hospital consists of medical wards, surgical wards, gynecology & obstetrics division, pediatrics division, psychiatric department, pharmacy department, laboratory department, dentistry department, ophthalmology department, anesthesia department, radiology department nursing department and others. A Limmu hospital is a district hospital in Jimma zone and gives service to around 515 thousands of people regularly. The hospital has 5 physicians, 43 nurses, 2 pharmacists, 3 druggists and others.

All physicians, pharmacists and nurses who are working in the hospitals at time of data collection were included in the study. Data was collected by the principal investigator using a structured self-administered questionnaire. The questionnaire was adapted from the previous studies in the area (6, 8, and 9). Ten days before the actual data collection period, testing of the questionnaire was conducted on 5% of the study population and necessary modification was done. The data was entered & analyzed using SPSS version 16.0 statistical soft ware

Results

Structured questionnaires were distributed to a total of health 250 health professionals working in two hospitals at the time of the study. But, only 203(143 male and 60 female) were responded and included in the study. 62.8% of the respondents were nurses, 18.6% pharmacy personnel and physicians each. Most of the respondents were in the age of 20-30years and serve 1-5 years in the respective hospitals as shown in table 1.

Table 1. Demographic characteristics of the respondents

Age of the respondent (year)		
	Frequency	**%**
20 - 30	89	87.3
31 - 40	9	8.8
>40	4	3.9
Sex of the respondent		
Male	70	68.6
Female	32	31.4
Profession		
Doctor	19	18.6
Pharmacy personnel	19	18.6
Nurse	64	62.8
Service year		
< 1	10	9.80
1 - 5	64	62.75
6 - 10	22	21.57
> 10	6	5.88

From the total respondents, 70.6% were defined ADR correctly. Of these 94.7% were pharmacy personnel, 78.9% were doctors and 60.9% were nurses. Less than half of the respondents (46 %) were heard about ADR reporting and (99.5%) agreed that ADR reporting is important.

Less than half of the respondents 76 (37.4%) were awared about the presence of national ADR reporting centre in Ethiopia. Among whom, 54 (26.6 %) were correctly identified the name and location of ADR reporting centre. Less than quarter of the respondents (20.6 %) were aware of the yellow prepaid post in Ethiopia.

Most of the respondents 126 (61.8%) believed that reporting even only one ADR had a significant contribution to the reporting system. The majority of the respondents (48%) were opined that ADR reporting should be compulsory (obligatory) and 25% stated that ADR reporting should be voluntary as indicated in Figure 2.

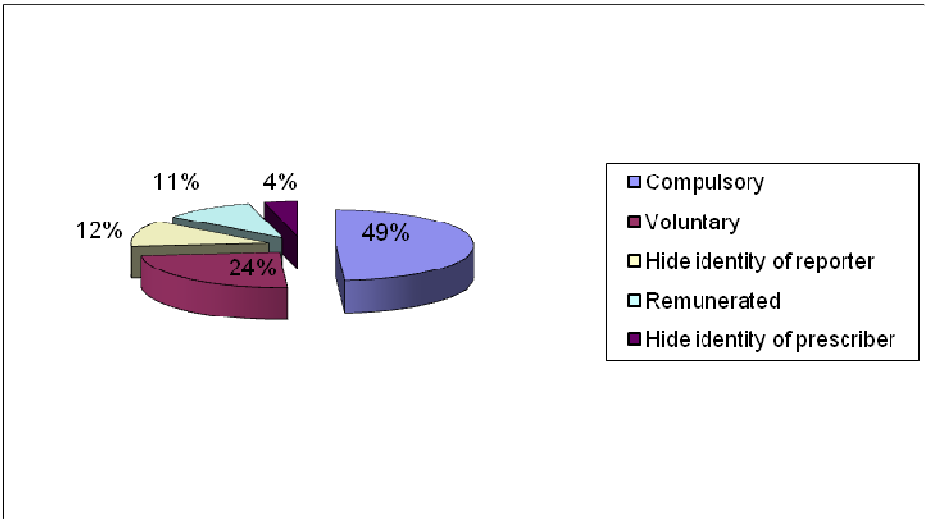

Figure1: Attitude of respondents about the way of reporting ADR.
Most of respondents were encouraged to report ADR if the reaction is to a new product (92, 45.1%) and if the reaction is serious & unusual (58, 28.6%) as shown in table 2.

Table 2. Factors that encourage the respondents to report ADR

Encouraging factor to report ADR.	Frequency	%
If the reaction is to a new product	92	40.2
If the reaction is serious & unusual	58	23.5
Reaction is certainly ADR	40	14.7
Reaction is well recognised to a particular drug	14	3.9
Total	204	100

Majority of the respondents did not report ADR in their life time due to lack of time to look for ADR & to fill a report (33.3%), lack of adequate level of clinical knowledge to decide the reaction is ADR (26.5%) and lack of knowledge on how to report (18.6%).

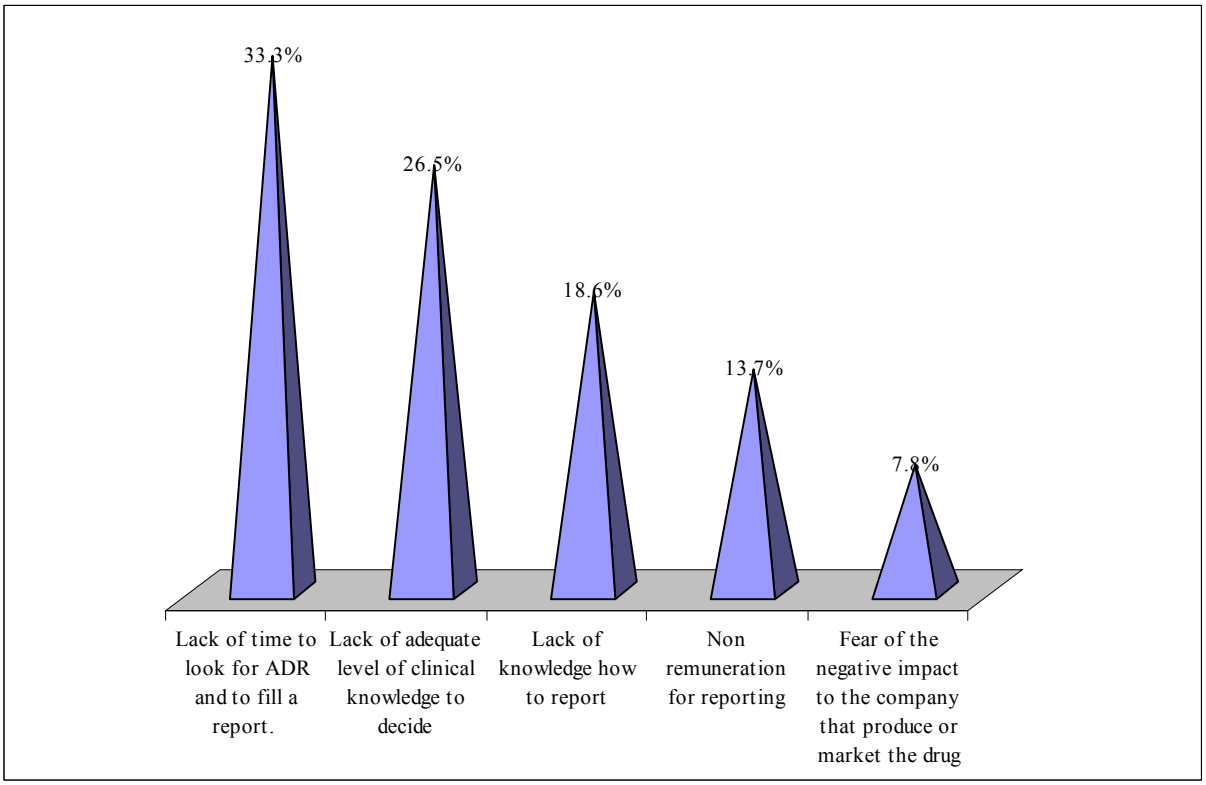

Figure 2: Factors that discourage health professionals from ADR reporting

From the total respondents, only eighteen had ever reported, from these nine of them Have got training on ADR reporting. Training has significantly strong positive correlation with reporting at $p < 0.01$ level.

The emphasised mechanism suggested by the respondents to improve ADR reporting was creating awareness about the impact of ADR and importance of ADR reporting and giving training on how to report ADR to health professionals with the value of 33.3% (table 3).

Table 3: Recommendations given by respondents to improve ADR reporting

Recommendations to improve ADR reporting.	Frequency	Percent
Create awareness about the impact of ADR & importance of ADR reporting and training on how to report ADR to health professionals	68	33.5
Specific offices in each health institution for reporting and availing the yellow post in each ward.	40	19.7
Create awareness to the public using mass media about ADR to report to the health institution.	32	15.8
Incentives or rewards to the reporter and to the institution	30	14.8
Feed back to reported cases and notifications of the cases.	20	9.8
Discuss with health professionals and do researches in all health institutions in the country.	13	6.4
Total	203	100.0

Discussion

The response rate to questionnaire was 81.2% which is equivalent to the study done in Nigeria which was 82.5(9) but extremely higher to similar studies in Ethiopia (10)

This study has shown inadequate knowledge of health professionals about ADRs and reporting in the two hospitals similar to resident doctors in Nigeria (9) and doctors in many countries across Europe (8,11), America (12) and Asia (13).

A significant number of the respondents were not aware of the existence of a national ADR reporting center in Ethiopia and amongst those who were awared; only 26.5% were able to correctly identify DACA as the office. Lack of knowledge of where ADRs should be reported had automatically affected reporting. The general lack of awareness of ADR reporting system in the two hospitals was reflected by the79.4% of respondents who did not know about the existence of a yellow prepaid post reporting scheme.

Ignorance (not feeling the need to report well recognised ADRs); lack of time to fill in a report, level of clinical knowledge and lack of knowledge on how to report ADR were the reason for not reporting ADR.The results were similar to most countries around the world (5).

However, financial incentives and fear have a little influence on the respondents not to report ADR.Therefore, under reporting in these hospitals appears to be associated more with knowledge & awareness gaps and attitudes of health professionals rather than with personal and professional characteristics reported in other studies (8,14).

Previous studies have shown that distribution and availability of yellow cards (yellow post) to doctors increase ADRs reporting (14, 15). In this study also availing the yellow post in each ward was given the second priority by the respondents to improve the reporting system but in Nigeria, a very high proportion of the respondents did not consider this as an important means to improve the reporting system (7).

Most of the respondents were encouraged to report reactions to a newly marketed drug and serious & unusual reactions established products because they perceived post marketing surveillance as an important part of pharmacovigilance.

Only 8.8 respondents had ever reported ADRs with a yellow post. This proportion is comparable to the study done in Ethiopia (10) but very low when compared to a similar reporting scheme among doctors in the United Kingdom (8), America (11), Netherland (16), Spain (17) and India (18) but a little beat higher than Nigeria (19). The differences in the reporting rates may be attributed to the priority, attention and commitment given to pharmacovigilance by the government of these countries. Such attitudes need to be improved by the Ethiopian government.

The emphasised suggested way by the respondents to improve ADR reporting was Continuous education and training. Educational intervention has been shown to improve ADR reporting in Portugal (19) and Rhode Island in the USA (18).

Conclusion

The findings of this study revealed that there are gaps between knowledge and ADRs reporting system among health professionals in the two hospitals even if the health professionals have a strong belief on the importance of ADR reporting. Most of the health professionals are not in the practice of ADR reporting.

The study further showed that training has a strong correlation with the reporting but only few of them have taken the training and reported also.

Recommendation

Based on the findings, the authors recommends the respective hospital and all concerned bodies to create an awareness and training on how to report ADR so as to improve the reporting system. Continuous education and awareness on the yellow post reporting scheme are not in place in the hospitals. Further large scale study should be done on this area to get a fruitful generalization and adopt standardised ways of improving the reporting system at national level.

References

1. Middleton R. Adverse drug reactions and clinical toxicology. In: Remington. The science and practice of pharmacy. 21 ed., 2006; 1:1221-1227.
2. Edwards I and Olsson S. WHO programming: global monitoring. In: Ronald D.Pharmacovigilance 1st Ed, England, Johns wiley and sons Ltd, 2002, 169-182.
3. Drug administration and control authority of Ethiopia.Guidline for adverse drug reaction (ADR) monitoring.2nd ed, DACA, Ethiopia, sept 2008; 5-27
4. Lexchin J. Is there a role for spontaneous reporting of adverse drug reactions**?** CMAJ 2006; 174:191-192.
5. L-Gonzalez E, Herdeiro MT and Figueiras A. Determinants of under-reporting of adverse drug reactions, a systematic review. Drug Saf.2009 32:19-31.
6. Robins AH, Weir M, and Biersteker EM. Attitudes to adverse drug reactions and their reporting among medical practitioners. S Afr Med J.1987; 72:131-134.
7. Inman WH. Attitudes to adverse drug-reaction reporting. Br J Clin Pharmacol. 1996; 41:433 435.
8. Belton KJ, Lewis SC, Payne S, Rawlins MD and Wood S. Attitudinal survey of adverse drug reaction reporting by medical practitioners in the United Kingdom**.** Br J Clin Pharmacol. 1995; 39(3): 223–226
9. Oshikoya KA and Awobusuyi OA**.** Perceptions of doctors to adverse drug reaction reporting in a teaching hospital in Lagos, Nigeria.BMC clinical pharmacology. 2009; 9:14
10. Mequanente S. and dires T. Spontaneous adverse drug reaction reporting and the obstacle in Amhara region referral hospitals. Pharmacology online.2008, 3:26-33
11. Pouget-Zago P, Lapeyre-Mestre M, Bagheri H and Montastruc JL. Pharmacovigilance seen by a selected group of general practitioners and of residents in the Midi-Pyrénées**.** Therapie.1995; 50:459-462.

12. Milstein JB, Faich GA, Hsu JP. Factors affecting physician reporting of adverse drug reactions**.** Drug Inf J. 1986; 20:157-164.
13. Rogers AS, Isreal E, Smith CR, Levine D, McBean AM, Valente C and Faich G.Physician knowledge, attitudes, and behavior related to reporting adverse drug events**.** Arch Intern Med. 1988; 148:1596-1600.
14**.** Bateman DN, Sanders GL and Rawlins MD.Attitudes to adverse drug reaction reporting in the Northern Region**.** Br J Clin Pharmacol. 1992; 34:421-426.
15. Castel JM, Figueiras A, Pedrós C, Laporte JR and Capellà D. Stimulating adverse drug reaction reporting: effect of a drug safety bulletin and of including yellow cards in prescription pads**.** Drug Saf. 2003; 26:1049-1055
16. Li Q, Zhang SM, Chen HT, Fang SP, Yu X, Liu D, Shi LY and Zeng FD. Awareness and attitudes of healthcare professionals in Wuhan, China to the reporting of adverse drug reactions**.** Chin Med J. 2004; 117:856-861
17. Eland A, Belton KJ, van Grootheest AC, Meiners AP, Rawlins MD and Stricker BH. Attitudinal survey of voluntary reporting of adverse drug reactions**.** Br J Clin Pharmcol. 1999; 48:623-627.
18.Serrano Cozar G, Esteban Calvo C, Gijon Porta JA, Vaquero Turiño I, Vázquez , Burgos MI, etal. Adverse drug reactions and a program of voluntary notification, an opinion survey of primary care physicians. Aten Primaria, 1997; 19**:**307-312.
19. Figueiras A, Herdeiro MT, Polónia J, and Gestal-Otero JJ. An educational intervention to improve physician reporting of adverse drug reactions, a cluster-randomized controlled trial**.** JAMA. 2006; 296:1086-1093.