

## RESEARCH ARTICLE

# Impact of Educational Training and Workshop on knowledge, attitude, and practice of pharmacovigilance in nursing staff of tertiary care hospital, Rajasthan

Jitendra Zaveri, Archanababen Chaudhari

Department of Pharmacology, Ananta Institute of Medical Sciences and Research Center, Kaliwas, Rajasthan, India

Correspondence to: Archanababen Chaudhari, E-mail: dr.archna294@gmail.com

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## ABSTRACT

**Background:** Pharmacovigilance program of India plays an important role for monitoring of adverse drug reaction (ADR) in patients. However, due to lack of knowledge about pharmacovigilance among health-care professionals, underreporting of ADR observed. **Aims and Objectives:** This study aims to involve, inspire, and encourage the nursing staff to report error – free adverse drug event that meets both the needs and legitimate expectations. **Materials and Methods:** A predesigned questionnaires based cross-sectional study conducted by the Department of Pharmacology among nursing staff working at tertiary care hospital. Participants were given pre-test and post-test with ADR form filling before and after educational Interventional lecture, respectively. For data analysis, Chi-square with yet correction was applied. **Results:** A total of 30 nursing staff participants involved in questionnaires based study. An overall knowledge about pharmacovigilance ranging from 10% to 53% which was lower range except knowledge about what is ADR was 83% in pre-test. Positive attitude toward pharmacovigilance also low ranges from 23% to 53%. Only 12% of participants were report the ADR. Majority of participant had obtained average score in ADR form filling. After educational intervention, improvement seen in knowledge, positive attitude and majority of participants fall under good score for ADR form filling. **Conclusion:** Improvement in knowledge and attitude was seen after educational intervention for pharmacovigilance among nurses.

**KEY WORDS:** Pharmacovigilance; Knowledge; Attitude; Practice; Nurses

## INTRODUCTION

Pharmacovigilance, according to the World Health Organization, is defined as “the science and activities relating to the detection, assessment, understanding, and prevention of adverse effects or any other drug-related problems.”<sup>[1]</sup> Pharmacovigilance Programme of India (PvPI) initiated nationwide in July 2010 by Central Drugs Standard Control

Organization. IPC Ghaziabad is the national coordinating center for monitoring adverse drug reaction (ADR) in the country to safeguard public health. Majority of the health-care professional are not aware about this development. Hence many times, they are not reporting or late reporting of ADR.<sup>[2]</sup>

Early reporting and rapid dissemination of information regarding ADRs are two important tasks in pharmacovigilance. Voluntary reporting of ADRs by health-care professional can make the above task easy. Reason for underreporting is lack of training and awareness of this issue like where to report and whom to report as is shown by the poor knowledge of the health-care professionals, especially the nursing staff. Motivation and training of health-care professional toward pharmacovigilance will improve ADR reporting.<sup>[3,4]</sup>

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## MATERIALS AND METHODS

A questionnaire-based cross-sectional study conducted by the Department of Pharmacology in nursing staff working at Ananta Institute of Medical Sciences and Research Center, Rajsamand, Rajasthan. A total of 30 nursing staffs were involved. Questionnaires were pre-designed. Initially, pre-knowledge, attitude, and practice (KAP) questionnaires were given to all nursing staff after that a one hour interventional lecture was given which includes detail about ADRs and PvPI. After completion of interventional lecture, a workshop for how to fill-up ADR form conducted. Initially, in workshop, one ADR patient case was given and then nursing staff fills the ADR form. After that, they taught about how to fill-up the ADR form. After completion of interventional lecture and workshop, post-KAP questionnaire and ADR form were given to participants. Pre-test and post-test data were analyzed using Chi-square test with yet correction from website *quantpsy.org*. ADR filling form analysis was done using Microsoft Excel 2013.

## RESULTS

The KAP study on pharmacovigilance before and after interventional lecture and workshop was done on the nursing staff of this institute. In this present study, a total 30 nurses were participated and fill-up pre- and post-test questionnaires and ADR reporting form.

### Assessment of Knowledge toward Pharmacovigilance Pre- and Post-test – Educational Intervention

Knowledge about the pharmacovigilance assessed using questionnaires listed in Table 1. Out of 30 participants, only 16 (53%) heard about the pharmacovigilance. Only 8 (27%) participants know what is pharmacovigilance? (Correct definition of pharmacovigilance). Majority of participants 25 (83%) know about the ADR. Only 15 (50%) know who can report the ADRs. Among all participants, only 3 (10%) know about the location of national coordinator center of PvPI and only 8 (30%) know about the regulatory body of PvPI in India. About 12 (40%) participants know about the pharmacovigilance committee in this institute. After educational interventional lecture the knowledge of participants significantly increased and that was statistically significant ( $P < 0.5$ ) [Table 1].

### Assessment of Attitude toward Pharmacovigilance

Attitude toward pharmacovigilance is assessed by questionnaires listed in Table 2. Out of 30 participants, 13 (43%) believe that ADR reporting is professional obligation. Only 8 (27%) participants believe in necessity of ADR reporting, but after educational interventional lecture, majority of participants 29 (97%) believe in necessity of ADR reporting. About half of the participants 16 (53%) think that ADR reporting increase patient safety. Only 7 (23%) participants say that ADR monitoring center

**Table 1: Knowledge about pharmacovigilance pre- and post-test analysis**

| Knowledge questions                                                          | Correct response     |                       | P-value |
|------------------------------------------------------------------------------|----------------------|-----------------------|---------|
|                                                                              | Pre-test n=30, n (%) | Post-test n=30, n (%) |         |
| Have you ever heard about the name pharmacovigilance program of India?       | 16 (53)              | 30 (100)              | <0.5    |
| What is pharmacovigilance?                                                   | 8 (27)               | 27 (90)               | <0.5    |
| In general, what is ADR?                                                     | 25 (83)              | 26 (87)               | <0.5    |
| Health-care professional responsible for reporting ADR in a hospital is/are? | 15 (50)              | 29 (97)               | <0.5    |
| PvPI monitoring center (National Coordination Center) located at             | 3 (10)               | 26 (87)               | <0.5    |
| Name the regulatory body of PvPI in India                                    | 9 (30)               | 25 (83)               | <0.5    |
| Is any pharmacovigilance committee in your hospital/college?                 | 12 (40)              | 29 (97)               | <0.5    |

ADR: Adverse drug reaction, PvPI: Pharmacovigilance Programme of India

**Table 2: Attitude toward pharmacovigilance questionnaires based pre- and post-test analysis**

| Attitude questions                                                                      | Positive response (yes) |                       | P-value |
|-----------------------------------------------------------------------------------------|-------------------------|-----------------------|---------|
|                                                                                         | Pre-test n=30, n (%)    | Post-test n=30, n (%) |         |
| Do you think ADR reporting is a professional obligation?                                | 13 (43)                 | 22 (73)               | <0.5    |
| Do you think ADR reporting is necessary?                                                | 8 (27)                  | 29 (97)               | <0.5    |
| Do you think ADR reporting will increase patient safety?                                | 16 (53)                 | 27 (90)               | <0.5    |
| What is your opinion about establishing ADR monitoring center in every hospital?        | 7 (23)                  | 24 (80)               | <0.5    |
| Should in every hospital                                                                |                         |                       |         |
| Not required in hospital                                                                |                         |                       |         |
| Do you think pharmacovigilance should be taught in detail to health-care professionals? | 12 (40)                 | 25 (83)               | < 0.5   |

ADR: Adverse drug reaction

**Table 3: Analysis of practice for pharmacovigilance**

| Practice questions                                        | Pre-test (%) |
|-----------------------------------------------------------|--------------|
| Have you ever seen ADR during clinical posting?           | 26 (86)      |
| Have you ever-reported ADR?                               | 4 (12)       |
| What is reason for not reporting?                         | 12 (40)      |
| (a) Not aware about the presence of ADR monitoring center | 18 (60)      |
| (b) Did not know how to report ADR                        |              |
| ADR: Adverse drug reaction                                |              |

**Table 4: ADR form filling analysis**

| ADR reporting form score   | Pre-test (%) | Post-test (%) |
|----------------------------|--------------|---------------|
| Poor score                 | 5 (25)       | 1 (5)         |
| Average score              | 16 (80)      | 5 (25)        |
| Good score                 | 7 (35)       | 14 (70)       |
| Excellent score            | 2 (10)       | 10 (50)       |
| ADR: Adverse drug reaction |              |               |

requires in every hospital. About 12 (40%) participants think that pharmacovigilance should be taught in detail to health-care professionals. Change in positive attitude toward pharmacovigilance seen after educational interventional lecture which was statistically significant ( $P < 0.5$ ).

### Assessment of Practice of Pharmacovigilance

Practice of pharmacovigilance assessed by questionnaires listed in Table 3. Out of 30 participants majority of participants 25 (83%) had seen ADRs, but only 5 (17%) participants report ADRs. Among all participants, majority of participants 18 (60%) give a reason for not reporting ADR was they were not knowing how to report an ADR.

### ADR Reporting Form Filling

ADR reporting form filling was done by participant before and after workshop. Analysis of ADR form filling was done by total scoring from 20 marks. If obtained marks were between 1 and 5, then it categorized poor scoring, 5–10 marks then average score, and 10–15 score then good score, and between 15 and 20 marks then excellent score. Detail of analysis is given in Table 4. During pre-test, majoring of participants fall under average score 16 (80%) after workshop for ADR form filling majority of participants fall under good score 14 (70%) [Table 4].

## DISCUSSION

Lack of knowledge about the pharmacovigilance is one of the factors responsible for the underreporting of ADR.<sup>[5,6]</sup> Voluntary ADR reporting by health-care professional play a key role for success of pharmacovigilance.<sup>[7]</sup> Nursing practices mainly come under administration of the drug. The administration of medications to the patients is one of the

most common routine procedures in the practice of nursing professionals. In this, the nurse assumes the important responsibility that aims to ensure patient safety through the safe and accurate administration of prescribed medication.<sup>[8]</sup>

Nurses having an important role in pharmacovigilance activities, particularly identifying ADR in patients and they are available round the clock with indoor patients. However, lack of knowledge about the pharmacovigilance and lack of external motivation by the institute to report ADR influence the underreporting by nursing professionals.<sup>[8,9]</sup> This study was planned for improvement in knowledge and attitude and practice for pharmacovigilance by nursing staff that will improve patient safety.

The present study shows that half of the participants have knowledge about who can report ADR, only 27% of participants know about what is pharmacovigilance and only 30% know about the regulatory body of PvPI in India, after educational interventional lecture, improvement in knowledge is seen 90% and 85%, respectively. A study conducted by Goel shows that only 30.6% of participants know about pharmacovigilance, 25% of participants know about regulatory body of pharmacovigilance program and after educational intervention improvement in 99% and 86%, respectively, seen which is comparable to our study.<sup>[10]</sup>

The present study shows that of 30 participants, 43% believe that ADR reporting is professional obligation. However, positive response improves to 73% after educational intervention. Only 27% of participants give positive attitude toward the necessity of ADR reporting, but after educational intervention, majority of participants (97%) give positive attitude for the same. A study by Goel shows comparable results for the same about 29.6% before and after educational intervention 97.9%, respectively.<sup>[10]</sup> About half of the participants (53%) think that ADR reporting increases patient safety which was change to positive attitude for 90% of participants for the same.

The present study seen that majority of participants (83%) seen ADR in clinical posting, but only few participant reports the ADR (12%), the result of the study conducted by Vural *et al.* shows that only 8% of nurses report the ADR which is comparable to our study.<sup>[11]</sup> Majority of participants give a reason for not reporting ADR was do not know how to report ADR.

The present study shows significant improvement in knowledge and attitude in post-test after educational intervention and also shows improvement in ADR form filling. KAP studies for pharmacovigilance concluded that nurses having lack of knowledge and poor practice regarding the pharmacovigilance so need of regular interventions like workshop about pharmacovigilance needed.<sup>[12,13]</sup>

## CONCLUSION

Improvement in knowledge and attitude after educational intervention of pharmacovigilance was seen among nurses. This indicated ADR training workshop, detail of pharmacovigilance during undergraduate course will be useful to improve KAP among nursing professionals which is helpful for patient safety through pharmacovigilance program.

## REFERENCES

1. Pharmacovigilance. World Health Organization. Available from: [https://www.who.int/medicines/areas/quality\\_safety/safety\\_efficacy/pharmvigi/en](https://www.who.int/medicines/areas/quality_safety/safety_efficacy/pharmvigi/en). [Last accessed on 2019 Feb 8].
2. Chowta MN. Manual of Practical Pharmacology for MBBS. 1<sup>st</sup> ed. New Delhi, India: Avichal Publications; 2007. p. 58-67.
3. Upadhyaya HB, Vora MB. Knowledge, attitude and practice towards pharmacovigilance and adverse drug reactions in post graduate students of tertiary care hospital in Gujrat. *J Adv Pharm Technol Res* 2015;6:29-34.
4. Tadvi NA, Alromaih AA, Aldahash AA, Almuheeseny AA, Alotaibi SH, Alduhayshi IS, *et al.* Knowledge, attitude and practice of pharmacovigilance in healthcare professionals and medical students in majmaah, Saudi Arabia care centre. *Int J Med Res Helath Sci* 2018;7:101-07.
5. Gupta R, Malhotra A, Malhotra P. A study on determinants of underreporting of adverse drug reactions among resident doctors. *Int J Res Med Sci* 2018;6:623-7.
6. Bhagavathula AS, Elnour AA, Jamshed SQ, Shehab A. Health professionals' knowledge, attitudes and practices about pharmacovigilance in India: A systematic review and meta-analysis. *PLoS One* 2016;11:e0152221.
7. Mohamed MM, Abdel-Latif AB, Basel AA. Knowledge and awareness of adverse drug reactions and pharmacovigilance practices among healthcare professionals in Al-Madinah Al-Munawwarah, Kingdom of Saudi Arabia. *Saudi Pharm J* 2015;23:154-61.
8. Haider N, Mazhar F. Factors associated with underreporting of adverse drug reaction by nurses: A narrative literature review. *Saudi J Health Sci* 2017;6:71-6.
9. Bigi C, Bocci G. The key role of clinical and community health nurses in pharmacovigilance. *Eur J Clin Pharmacol* 2017;73:1379-87.
10. Goel D. Impact of education intervention on Knowledge, attitude, and practice of pharmacovigilance among nurses. *Arch Med Health Sci* 2018;6:32-5.
11. Vural F, Ciftci F, Vural B. The knowledge, attitude and behaviours of nurses about pharmacovigilance, adverse drug reaction and adverse event reporting in a state hospital. *North Clin Istanbul* 2014;1:147-52.
12. Hanafi S, Torkamandi H, Hayatshahi A, Gholami K, Javadi K. Knowledge, attitudes and practice of nurse regarding adverse drug reaction reporting. *Iran J Nurs Midwifery Res* 2012;17:21-5.
13. Vohra A, Vohra R, Verma M. Poor knowledge, attitude and practices of pharmacovigilance among health care professionals: A cross sectional study. *J Mahatma Gandhi Univ Med Sci Technol* 2016;1:42-6.

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