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Evaluation of Knowledge Attitude and Practice of Pharmacovigilance Among Undergraduates: A Cross-Sectional Study

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ABSTRACT

The success of any pharmacovigilance system relies on the active participation of all healthcare professionals, including dentists. As there is very less information regarding the KAP on pharmacovigilance in medical and dental undergraduates. This study was conducted with an aim to evaluate the information regarding knowledge attitude and practice on pharmacovigilance in medical and dental students. A pretested questionnaire regarding the knowledge, attitude and practice was sent as Goggle form link to 3rd year, 4th year students and interns of Medical and Dental college. A period of two weeks was given to all the students to answer the questionnaire. A total of 370 Google forms were received. Majority of the study participants were females (66.2%) and most of the participants were in the age group of 20-22 years (70.5%). There was no statistically significant difference in KAP scores of medical and dental students. knowledge and practice were not adequate. Thus, this study indicates the need for incorporating education related to pharmacovigilance in undergraduate medical and dental curriculum. Adverse Drug Reactions are "any noxious, unintended and undesired effect of a drug occurring at doses used for prophylaxis, diagnosis, therapy, or modification of physiologic function.". These reactions are a significant cause of morbidity and mortality and account for a notable percentage of hospital admissions. So, this study throws light on the need for incorporating education related to pharmacovigilance in undergraduate medical and dental curriculum.

INTRODUCTION

The term "pharmacovigilance" originates from the Greek word "pharmakon" (meaning 'drug') and the Latin word "vigilare" (meaning 'to keep watch')[1]. Pharmacovigilance is defined as "science and activities relating to detection, assessment, understanding and prevention of adverse effects or any other drug related problems." Medical professionals should have a level of understanding about pharmacovigilance of drugs to prescribe, rationalize, prevent and detect Adverse Drug Reaction (ADR)[2]. Adverse Drug Reactions are "any noxious, unintended and undesired effect of a drug occurring at doses used for prophylaxis, diagnosis, therapy, or modification of physiologic function[3]. These reactions are a significant cause of morbidity and mortality and account for a notable percentage of hospital admissions ranging from 0.3-11%[4]. Monitoring and reporting of ADRs are crucial in identifying trends and minimizing harm to patients caused by drugs. The accomplishment of any pharmacovigilance system relies on the dynamic participation of all medical professionals, including dentists. It is important to improve the Knowledge, Attitude and Practice (KAP) of the healthcare professionals regarding ADR reporting and pharmacovigilance. Proper training of medical and dental students can bring about major change in reporting of ADRs and thus successful functioning of pharmacovigilance program. A number of studies have documented the lack of KAP, regarding ADRs in doctors, nurses, pharmacists[5,6]. Few studies have been conducted on undergraduate medical and dental students about KAP regarding Pharmacovigilance[7]. As there is very less information regarding the KAP on pharmacovigilance in medical and dental undergraduates. This study was conducted with an aim to evaluate the information regarding knowledge attitude and practice on pharmacovigilance in medical and dental students.

MATERIALS AND METHODS

Study Design: Cross Sectional Study.

Study Period: From

Study Setting: konaseema institute of medical sciences and research center.

Study Subjects: 3rd year, 4th year students and interns of Medical and Dental college.

Inclusion Criteria:

- All the undergraduate Medical and Dental students qualified in the university exam of Pharmacology.
- All the students who gave consent for participation in the study.
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Exclusion Criteria:

- Students not willing to give consent for participation in the study.
- Students not qualified in the university exam of Pharmacology.

Study Procedure: All the 3rd year, 4th year students and interns of Medical and Dental college were included in the study as per the inclusion criteria. All the students were given consent form. After receiving consent they were included in the study and a pretested questionnaire regarding the knowledge, attitude and practice was sent as Google form link to all the students. A period of two weeks was given to all the students to answer the questionnaire. Reminders were sent to the students included in the study to fill the questionnaire. A total of 370 Google forms were received. The data was analysed using SPSS 20 version for windows. Percentages and mean were given to variables. Mann-Whitney test was used for comparison between groups. P-value of less than 0.05 was considered statistically significant.

RESULTS AND DISCUSSIONS

Majority of the study participants were females (66.2%) and most of the participants were in the age group of 20-22 years (70.5%) (Table 1). All the correct/yes answers were scored as "1" and all the incorrect/no answers were scored as "0". The maximum possible score for knowledge was 9, for attitude was 8 and for practice was 7. Table 7 shows that the median of knowledge attitude and practice scores for medical students were 5, 6 and 3. The median of knowledge attitude and practice scores for dental students were 4, 5 and 2. There was no statistically significant difference in KAP scores of medical and dental students. Medical and Dental students could play a major role on successful implementation of pharmacovigilance program if adequate knowledge and skill are imparted to them during undergraduate training career. Our survey had a total of 370 responses which consisted of 3rd, 4th year students and interns of medical and dental college (Table 3). The respondents were predominantly women (66.2%) stating the substantial presence of women in medical and dental field (Table 2).

Table 1: Age Distribution

Age group	Frequency n(%)
20-22 years	261(70.5%)
23-25 years	102(27.5%)
>26 years	7(1.9%)

Table 2: Gender Distribution

Gender	Frequency n(%)
Male	245(66.2%)
Female	125(33.8%)

Table 3: Distribution of Medical and Dental Students Based on Year

Year	Medical students	Dental students
3rd year	80(21.6%)	85(22.9%)
4th year	70(19%)	50(13.5%)
Interns	50(13.5%)	35(9.4%)

among the study participants. This survey covered all about the pharmacovigilance More than two thirds of the study participants were aware of the term

Table 4: Correct Response of Knowledge Questions

Questions	Medical	Dental
1. Are you aware of the term pharmacovigilance?	141(70.5%)	129(75.8%)
2. Pharmacovigilance is the science of detection, assessment, understanding and prevention of adverse effects. Do you agree?	160(80%)	147(86.4%)
3. Adverse drug reaction (ADR) is any response to a drug which is noxious and unintended and which occurs at doses normally used in man. Do you agree?	140(70%)	130(76.4%)
4. The international centre for drug safety monitoring is located in	40(20%)	38(22.3%)
5. Where is the National pharmacovigilance center in Nepal located?	45(22.5%)	47(27.6%)
6. Is ADR reporting included in your curriculum?	60(30%)	54(31.7%)
7. Have you heard about the term Naranjo Probability Scale?	7(3.5%)	6(3.5%)
8. Do you know about any drug withdrawal from the Nepalese market because of drug toxicity?	73(36.5%)	60(35.2%)
9. Is there any Pharmacovigilance Committee in your college?	12(6%)	10(5.8%)

Table 5: Correct Response of Attitude Questions

Questions	Medical	Dental
1. Do you think ADR reporting is necessary?	150(75%)	135(79.4%)
2. Do you think medical students could play a role in ADR reporting?	147(73.5%)	90(52%)
3. Should ADR reporting be included in Pharmacology practical for first and second years?	158(79%)	120(70.5%)
4. Should pharmacovigilance be taught in detail to healthcare professionals?	190(95%)	150(88.2%)
5. The healthcare professional responsible for reporting adverse drug reaction in a hospital are:	140(70%)	120(70.5%)
6. Do you think ADR monitoring and reporting center should be there in all teaching hospitals?	160(80%)	102(60%)
7. Do you think ADR reporting benefits both patients and doctors?	191(95.5%)	140(82.3%)
8. Will Pharmacovigilance activities help to reduce the morbidity and mortality?	163(81.5%)	127(74.7%)

Table 6 Correct Response of Practice Questions

Questions	Medical	Dental
1. Have you ever come across with any patient experiencing Adverse Drug Reaction?	120(60%)	49(28.8%)
2. Have you ever seen an ADR reporting form?	19(9.5%)	2(1.1%)
3. Have you read any article regarding adverse drug reactions?	110(55%)	84(49.4%)
4. Do you know where to report ADR?	22(11%)	5(2.9%)
5. Have you ever visited any ADR monitoring center?	7(3.5%)	0
6. Have you ever been trained on how to report ADR?	10(5%)	0
7. Do you feel you are adequately prepared to report ADR in your future practice?	4(2%)	0

Table 7: Median of KAP Scores in Medical and Dental Students

Variables	Medical		Dental			
	Median	IOR	Median	IOR	P-value	Z-value
Knowledge	5	3	4	1	0.5	0.7
Attitude	6	2	5	2		
Practice	3	1	2	1		

Manwhitney u test P<0.05* statistically significant

pharmacovigilance. More than three fourths of the study participants knew the objective of pharmacovigilance. The results of our study were in line with the study done by Nisa[8] stating that health care professionals (83.1%) had strong understanding of the objective of pharmacovigilance. In the perspective of causality assessment, the Naranjo scale has emerged as the favored tool, but only 3.5% medical and dental students were aware of the Naranjo scale, which highlights the lack of practicality and relevance of this assessment scale and was in contrast with the study done by Vyshnavi[9] where almost one quarter (24.3%) of the study participants were aware of the Naranjo scale (Table 4). Majority of respondents 79% medical students and 70.9% dental students in this study thought that ADR reporting should be included in Pharmacology practical for first and second years which was similar to the response of the study done by Meher[10] (85%) and Manandhar[11] (80.9%). Furthermore, 95% of medical respondents and 88.2% of the dental respondants in the current study thought that pharmacovigilance should be taught in detail to healthcare professionals. Similar findings are seen in other studies done by Rani[12] and Nair[13] (Table 5). Few respondents from medical (9.5%) and dental (1.1%) had seen an ADR reporting form and only 5% of medical respondents were trained to report the ADR. The results of our study were in agreement with researches done by Deo[7] and Era[14] (Table 6). This lack of practice in medical and dental students can be attributed to the fact that the students from the first two years in the MBBS and BDS course were not subjected to adequate postings in hospital and lack of training and educational interventions related to practice of pharmacovigilance. Establishing ADR monitoring centers, regular workshops, periodic awareness programs and incorporating pharmacovigilance activities in undergraduate teaching curriculum will emerge as promising strategies for the future, ensuring enhanced patient safety and elevated health care standards.

CONCLUSION

Optimistic attitude was noted among medical and dental students towards pharmacovigilance, but knowledge and practice were not adequate. Thus, this study indicates the need for incorporating education related to pharmacovigilance in undergraduate medical and dental curricula to prepare them for future practice.

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