

## Evaluation of awareness about pharmacoeconomics in postgraduate students of a tertiary care teaching hospital: a questionnaire based observational study

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### ABSTRACT

**Background:** Pharmacoeconomics identifies, measures and compares the costs and consequences of drug therapy to health care systems and society. The per capita income of all middle class people is limited and the drug prices are growing extensively. Therefore, it is the responsibility of the health-care professionals to balance both cost and quality of treatment. Hence, this study was planned among the postgraduate students who form the major part of health care delivery system to assess their awareness about pharmacoeconomics.

**Methods:** This was a questionnaire based cross-sectional study. Self-administered questionnaire was distributed among 72 residents, out of which 61 completely filled questionnaires were finally used for statistical analysis. The questionnaire contained questions relating to awareness, knowledge, method of application and students' attitude about pharmacoeconomics.

**Results:** The willingness to participate in the study among postgraduates was extremely poor. Those who have participated, almost 39% of participants were having awareness about the topic. Nearly 31 % of the participants were having knowledge regarding pharmacoeconomics and around 21 % of participants have learnt the method of application in various aspects.

**Conclusions:** Study has revealed that that the knowledge and perception level of postgraduates in day to day use of pharmacoeconomic concepts are poor and limited. Therefore, it is very necessary to make them aware about the concept of pharmacoeconomics by incorporating it in their medical curriculum and by conducting CMEs and Workshops on pharmacoeconomics.

**Keywords:** Awareness, Knowledge, Pharmacoeconomics, Postgraduate students

### INTRODUCTION

Pharmacoeconomics which is a sub-discipline of health-economics has been defined as “the description and analysis of the costs of drug therapy to healthcare systems and society”. It identifies measures and compare costs (resources consumed) and consequences (clinical, economic, humanistic) of pharmaceutical products and services.<sup>1</sup>

In order to survive and thrive in this recessionary world, pharma and healthcare businesses will have to rigorously perform pharmacoeconomic evaluations. Citizens and Physicians worldwide are increasingly facing problems in deciding which treatment is most effective medically and economically. Pharmacoeconomics evaluates the behaviour of individuals, firms and markets relevant to the use of pharmaceutical products, services and programmes.<sup>2-6</sup> Economics is all about limited “resources” and unlimited “wants”.

The pharmaceutical industry traditionally viewed communications to the clinicians as one of its most powerful marketing tools and tended to concentrate on the safety and efficacy of medicines. However, the paradigm is now changing, as some pharmaceutical manufacturers are including economic (“pharmacoeconomic”) data in their communications.<sup>7</sup>

The objective of pharmacoeconomics is to define the needs of the patient so that available resources can be distributed as per needs of the patient. While prescribing a drug, a large number of drugs are available on brand names but are very costly, while at the same time good quality drugs by generic names are available at half the costs, thus one should preferably prescribe a drug by generic name, of course not compromising on quality. The health care resources are very limited, and the healthcare purchasers are now engaged in finding the ways to contain drug costs without compromising on the quality of medical care. However this can only be achieved if we can get reliable data on costs and benefits.<sup>8</sup>

## METHODS

A cross-sectional questionnaire-based observational study was conducted in Acharaya Shri Chander College of Medical Sciences and Hospital, Sidhra, Jammu, J&K. The study was done after approval from the Institutional Ethical Committee. Postgraduate medical students of various departments of our college were included in the study to assess the extent of knowledge and awareness of pharmacoeconomics and its methods of application among the students. The postgraduate students who were not willing to participate in the study were excluded. Self-administered pre-validated questionnaire was used to collect the data from respondents.<sup>9,10</sup> The purpose of the study was explained and written informed consent was obtained from all the participants before being given the questionnaires.

The questionnaire consists of two parts. The first part pertained to a collection of demographic information of the postgraduates (age, gender, deptt. and year of experience as postgraduate). The second part of the questionnaire contained multiple choice formats with focus from awareness, knowledge, methods of application and attitude related to pharmacoeconomics. The respondents were asked to select one option which is most appropriate to relevant question according to them.

A questionnaire is said to be standardized when each respondent is to be exposed to the same questions and the same system of coding responses. The aim here is to try to ensure that differences in response to questions can be interpreted as reflecting differences among respondents, rather than differences in the processes that produced the answers.<sup>11-13</sup> In this study, we followed standard pattern to measure the level of awareness, knowledge and methods of application of postgraduate students on the general topic of pharmacoeconomics. All the survey questions related to

basic definitions on concepts of pharmacoeconomics were assigned equal value, i.e. 1 for correct response and 0 otherwise. The responses were reviewed and analysis was done for calculating the overall rating scale by dividing the total number of correct response by the total number of questions and multiplying by 100. The results were expressed as percentage response in each of three categories from the total as 100%. The final analysis was performed using Statistical Package for the Social Sciences (SPSS, version 17).

## RESULTS

Out of 72 residents, 29 members from Final year students, 17 members from second year students and 15 members from first year students participated in the study. 11 members rejected to take the questionnaire.

**Table 1: Percentage response of participants to awareness-based questions.**

Questions	Response (%), n=61 (100%)	
	Right answer	Wrong answer
<b>Awareness</b>		
Are you aware of the term “Pharmacoeconomics”?	39	61
Is every teaching hospital in India are following pharmacoeconomic guidelines?	62	38
Is Health economics and pharmacoeconomics are same?	43	57
What is Pharmacoeconomics?	32	68
ECH outcomes in pharmacoeconomics evaluate	4	96

**Table 2: Percentage response of students to knowledge-based questions.**

Questions	Response (%), n=61 (100%)	
	Right answer	Wrong answer
All are different types of pharmacoeconomic analysis except	29	71
Following are different types of cost involved in pharmacoeconomic analysis except	33	67
Pain and suffering of patients are included in----cost	31	69
Robustness of results are best tested by-----analysis	16	84
Pharmacoeconomic governing body in India is	9	91

All the participants were given the necessary instructions and sufficient time to fill the questionnaire. It was observed that 39% of the respondents were aware about the concept of pharmacoeconomics (Table 1).

However, the majority of the respondents had little knowledge about the principles of pharmacoeconomics and only 31% of them responded positively (Table 2). Considering the methods of application of Pharmacoeconomics nearly 20% of postgraduates were having knowledge about pharmacoeconomics (Table 3). As far as attitude of students about pharmacoeconomics is concerned total 52% of postgraduates felt pharmacoeconomics should be included in Postgraduate curriculum. 81% of postgraduates wanted to conduct continuous medical education on pharmacoeconomics. Only 17% showed self-interest in learning pharmacoeconomics. 23% of postgraduates agreed that there is a need of a specialization degree of pharmacoeconomics.

**Table 3: Percentage response of students relating to methods of application of pharmacoeconomics.**

Questions	Response (%), n=61 (100%)	
	Right answer	Wrong answer
Most commonly used Pharmacoeconomic analysis is	21	79
To compare the costs of different brands as well as brand and generic products which Pharmacoeconomic analysis is preferred	22	78
Pharmacoeconomic analysis which measures outcome in monetary units is-----	18	82
Quality Adjusted Life Years (QALY) measured in----- analysis	25	75
To compare the costs of National Highway project and vaccination programme which Pharmacoeconomic analysis is preferred?	11	89

## DISCUSSION

It is well documented that the emerging discipline of pharmacoeconomics has become adopted worldwide as a health science discipline by the pharmaceutical industry, academic pharmaceutical scientists, pharmacy practitioners and health care professionals.<sup>14</sup>

Active participation among postgraduates in this study was very poor. Among these postgraduates only 39% of residents were having awareness about pharmacoeconomics. Nearly 25% of the postgraduates

were having knowledge relating to pharmacoeconomics and around 20% of postgraduates have applicable knowledge about pharmacoeconomics.

In our study we noticed that many postgraduates showed little interest and were reluctant to participate eventhough it was told that their identity would be kept confidential. Various reasons for the above could be (a) lack of interest in pharmacoeconomics (b) unawareness about significance of pharmacoeconomics (c) lack of exposure to pharmacoeconomics concept in MBBS curriculum. Therefore, to increase the awareness it is desirable to conduct CME, workshop and symposium in medical colleges which will also help the postgraduates to refresh and update their knowledge. Total 52% of postgraduates felt pharmacoeconomics should include in postgraduate curriculum. Only 17% showed self-interest in learning pharmacoeconomics. Our study results were correlate with the Jarinabanu Tahashildar et al, Jeannette EF et al and Dr Madhav K. Savkarei studies.<sup>9,15,16</sup>

Overall residents were having extremely poor awareness and knowledge regarding pharmacoeconomics. Hence, the inclusion of pharmacoeconomic concept and practical exercises in the curriculum of medical undergraduates would help them to realize the enormous differences in cost of various brands available in the market and will also increase their awareness of indirect cost and intangible cost associated with the drug therapy. Secondly, to increase the awareness it is desirable to conduct CMEs, Workshops and symposium in medical colleges which will also help in postgraduates to refresh and update their knowledge. We recommend the further studies to be carried out on large scale involving private practitioners (working in clinics, nursing homes and corporate hospitals) and practitioners of government hospitals (working at primary, secondary, tertiary care levels) which will give more valid results on the level of awareness, knowledge and application of pharmacoeconomics among these professionals.

## CONCLUSION

The present study has revealed that the level of knowledge and awareness of postgraduates about pharmacoeconomics is very poor and limited. Therefore, there is an urgent need to introduce the concept of pharmacoeconomics in the teaching curriculum both at undergraduate and postgraduate level so that the medical professionals are sensitized to this concept at the early phase of their career and this will help them in better decision making regarding pharmacoeconomics in future

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