



Research Article

KNOWLEDGE, ATTITUDE AND PERCEPTION OF POST-GRADUATE PHYSIOTHERAPY STUDENTS TOWARDS RESEARCH

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ABSTRACT

**Background:** Health research training has been recognized as an important component of medical education because the rapid expansion and progress in biomedical research is expected to transform medical care. Research is taught as a part of the graduation as well as post-graduation curriculum in Physiotherapy. The study was aimed at determining the knowledge, attitude and perception towards research among post-graduate physiotherapy students.

**Method:** 90 post-graduate physiotherapy students filled a self-administered questionnaire. The results were analyzed using Microsoft Excel 2013.

**Results:** 6 males and 67 females participated in the study. 93% students had studied research during graduation while 6% had not. There was poor knowledge (<41%) regarding research. The students carried good attitude and perception towards research. 71% liked research and 98% knew the importance of research. 77% believed an incorrect sample size can give wrong conclusions about a study. 73% believed blinding of an assessor can help decrease the bias of results. There was some ignorance among the students (<14% for most of the questions and 22% and 43% for two questions). Questionnaire data was missing for <10% of the students.

**Conclusion:** In spite of liking research and studying research during their graduation, most of the students had poor knowledge with good attitude and perception.

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INTRODUCTION

Research is a careful investigation or inquiry, especially through scientific methods, aimed at searching new fact or verification of established facts under various situations. Purpose of research is to discover and develop an organized body of knowledge through application of scientific procedures. <sup>1</sup> Research discoveries are central to achieving the goal of extending the quality of healthy lives. Research into causes of disease, methods for prevention, techniques for diagnosis, and new approaches to treatment has increased life expectancy, reduced infant mortality, limited the toll of infectious diseases, and improved outcomes for patients with heart disease, cancer, diabetes, and other diseases. Patient-oriented clinical research that tests new ideas makes medical and public health progress possible. <sup>2</sup> Teaching Biostatistics and Research in all medical and related fields has become important in order to be able to give the best care to the client. In today's modern era, health care is in desperate need of Evidence-based practice since the clientele now heavily relies on health insurance and Mediclaim policies. Also, the people in India now have become more aware through the use of internet and social media.

Evidence-Based Practice (EBP) is a 5 step process whereby clinicians integrate best research evidence with clinical expertise and client preferences, producing the most appropriate and effective service. <sup>3</sup> EBP relies on research since without research there is no evidence to base the practice on. Research in Physiotherapy has also become an upcoming field due to recent technological advances. There are several new treatment techniques being developed. The client demands have increased and new advances need to be made to fulfill them. Since research is so important, it is usually included in the curriculum of undergraduate students. It helps the young Physiotherapists to read, conduct and understand research.

A bachelor in Physiotherapy education curriculum in India does include Biostatistics and Research Methodology as a subject in the second year or the fourth year of the study period depending on the University. Thus, most students get to learn about Biostatistics and Research Methodology during the graduation period. Some Universities even have a mandatory research project during the 6-month internship period or the final year so that the students can understand better by applying it practically.

Research education is not the only requirement to perform research. Even after learning about research, there are a vast majority of physiotherapists who do not conduct, participate or use research in any way. The physiotherapist needs to have a

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good attitude towards research along with good perception. Knowledge alone cannot suffice the need to conduct research. Hence, knowing what kind of attitude, knowledge and perception do the students carry towards research is needed.

Studies have shown that research experience during medical school is strongly associated with post-graduate research initiatives and future career achievements in academic medicine.<sup>4-6</sup> The same stands for physiotherapy. Research in physiotherapy may lead to better understanding of the patient condition, better interventions and outcomes. Research is taught as a part of the graduation as well as post-graduation curriculum in Physiotherapy. The objective of this study was to explore the attitude, perception and knowledge towards research of qualified physiotherapists undergoing post-graduation.

## **METHODOLOGY**

A cross-sectional survey was conducted among male and female students pursuing post-graduation at various colleges in Ahmedabad under Gujarat University. Students who were willing to participate in the study and had an understanding of English language were included using convenience sampling. A self-administered questionnaire was developed based on previous similar studies.<sup>4,7</sup> The questions were added or modified as deemed appropriate according to the students in the studied population. The questionnaire was discussed with three senior faculty members with more than ten years of experience and two junior faculty members who had recently cleared their masters exams with less than six months of experience and a few changes were made before the final version was given to the students.

The questionnaire comprised of 23 questions which took approximately 15 minutes to be filled. The questionnaire also included a demographics part which included demographic details like name, age and gender. It also asked whether they had studied biostatistics and research during their graduation. The questionnaire contained questions regarding all the 3 aspects – knowledge, perception and attitude. There were 5 questions related to knowledge, 7 questions pertaining to attitude and 11 questions about their perception. The students were asked to answer the questions with either yes, no, and don't know. Statistical analysis was done using Microsoft Excel 2013.

## **RESULTS**

A sample of 90 subjects was included in the study. The mean age of the sample was  $23.49 \pm 2.304$  years in the range of 22-34 years. There were 82 females (91%), 81 were unmarried (91%), 84 subjects (93%) said they had studied research methodology and biostatistics during their graduation, as shown in Table 1.

### ***Attitude***

Sixty four students (71%) said that they liked research. Eighty eight students (98%) thought it was important to know biostatistics and 85 students (95%) thought they could not do research without the knowledge of biostatistics. Eighty students (89%) replied that it is not important to define a research question and 69 students (77%) thought that in research, it was important to have a clinical difference in the outcomes. Fifty one students (57%) replied that reviewing literature of articles only proving their hypothesis right was not important. Results

related to Attitude of the students regarding research are given in Table 2.

### ***Knowledge***

37 students (41%) said they knew the types of research designs, 36 (40%) said they did not. 52 (57%) students said they did not know if Type I and Type II are related. Only 1 student (1%) knew the full form of CEBM. Forty six students (51%) did not know the full form of PEDro. Forty four students (49%) said that randomization cannot be done by allocating a subject randomly into one group according to researcher's convenience. Results related to Knowledge of the students regarding research are given in Table 3.

### ***Perception***

60 students (67%) thought it is important to apply statistical tests to all data. 71 students (79%) thought it is important to apply statistical tests to say that the result is significant. 35 students (39%) said flaws in methodology can be corrected by a statistician, 35 (39%) did not know. 69 students (77%) said incorrect sample size can give wrong conclusions in the study, 33 (37%) said it is not criteria of a good research to accept only significant differences, 56 (62%) said that the method should not have minimal details, 66 (73%) said blinding of assessors can help decrease the bias of results, 71 (79%) said that bias will affect the results of a study, 43 (48%) said it is not okay if a participant does not complete the study, 72 (80%) said it is necessary to describe all details of method to the participant and 34 (38%) said that books are not a better reference source than journals. Results are shown in Table 4.

## **DISCUSSION**

This study was done to determine the attitude, knowledge and perception of post-graduate physiotherapy students about research. The results showed that the post graduate students have poor knowledge, fair attitude and good perception towards research.

Most of the students had no knowledge about research. Knowledge forms the foundation of any concept. Without knowledge, the students cannot understand, implement or conduct research. This was seen in spite of 93% of the students having studied research during their graduation. Working in the field of physiotherapy requires the therapist to be updated about the recent trends at all times. Also it is very important to conduct your own research as a way of contributing to the field. In spite of having research as a part of their curriculum, the students have very poor knowledge. This may be due to the lack of a practical application of the studied research theory. There are only a few universities in Gujarat which have performing research as a necessity for graduation. Hardway CL and Stroud M in 2014 concluded that students learn best when they are actively engaged in the process. In their study, during the course of a semester, the students were asked to accomplish 2 research projects – one was group based and the other was individually developed. This practical application of the studied research led to an increase in the knowledge of students along with improving the attitudes towards research. It also provided a forum for students to gain important experiences.<sup>8</sup> Since most of the students in Gujarat get no practical experience of conducting research during their under graduate phase, they tend to forget what they had learned.

In the present study, the students had a fair attitude towards research. These results are in accordance to previous studies carried out in other similar populations.<sup>7,9</sup> The cause for this seems to be prior learning of research that they had during their graduation. Vujaklija *et al* in 2010 also concluded the same that teaching research methodology in medical curriculum can significantly increase positive attitude towards research.<sup>9</sup> Siemens DR *et al* in 2010 found great disparity regarding the participation in and attitudes towards research by Canadian medical students, as well as significant barriers impeding these activities during their education. They concluded that 43% of the medical students had no significant involvement in research projects during medical school and 24% had no interest in any research endeavors. Forty three percent of respondents agreed that the main reason for participation in research during medical school was to facilitate acceptance into a residency of choice.<sup>7</sup>

The students also had good perception towards research. This can also be attributed to the study of research during their graduation. Similar results were concluded by AlGhamdi KM *et al* in 2013. They found that senior medical students had good perception about research. The majority of the students agreed that research is important in the medical field. The majority also agreed that conducting research during medical school is important. However, they also concluded that there were various barriers that were responsible for giving a bad perception including lack of professional supervisors, lack of training courses and lack of funding.<sup>4</sup>

Another study by Janssen J *et al* in 2016 stated that physiotherapists perceived research to be important for the profession of physiotherapy. They also noted that the scores obtained by them bordered on the lower margins of other health allied professions. This means that in spite of the perceptions being good, physiotherapists are still lacking behind other allied health professionals. They also concluded that physiotherapists are less confident in conducting research and find it difficult to access databases.<sup>10</sup> This can be cited as one of the reasons of having a fair attitude as observed in the present study.

Poor knowledge of research may lead to a fear in conducting research. However, since the students have fair attitude and good perception, they should be given adequate opportunities and better funding. Also, efforts should be made to increase their knowledge about research since one cannot conduct or use research without having sufficient knowledge.

## CONCLUSION

This study showed post-graduate physiotherapy students have a fair attitude and good perception about research. However, in spite of studying research as part of their graduation, they still have poor knowledge for which efforts should be made to improve. Future studies should try to implement efforts to improve the knowledge and thereafter determine their effectiveness.

**Table 1** Demographic details of the students

Gender	Males: 8 (9%)	Females: 82 (91%)
Married	Yes: 9 (10%)	No: 81 (90%)
Studied research in graduation?	Yes: 84 (93%)	No: 6 (7%)

**Table 2** Attitude of students regarding Research

	Yes (%)	No (%)	Don't know (%)	Missing (%)
Do you think you like research?	64 (71)	16 (18)	10 (11)	0 (0)
Is it important to know Biostatistics?	88 (98)	2 (2)	0 (0)	0 (0)
Do you think you can do research without knowledge of Biostatistics?	3 (3)	85 (95)	2 (2)	0 (0)
Is it important to define a research question?	80 (89)	4 (4)	6 (6)	1 (1)
Is a clinical difference in outcomes important in research?	69 (77)	2 (2)	13 (14)	6 (7)
Literature of studies proving your hypothesis only are important	10 (11)	51 (57)	23 (25)	6 (7)

**Table 3** Knowledge of students regarding Research

	Yes (%)	No (%)	Don't know (%)	Missing (%)
Do you know the types of research designs?	37 (41)	36 (40)	13 (14)	4 (5)
Are Type I and Type II errors related?	16 (18)	16 (18)	52 (57)	6 (7)
Do you know the full form of CEBM?	1 (1)	89 (99)	0(0)	1 (1)
Do you know what CTRI is?	0 (0)	89 (99)	0(0)	1 (1)
Do you know the full form of PEDro?	35 (39)	53 (59)	0(0)	2 (2)
Randomization can be done by allocating a subject randomly into one group according to researcher's convenience	26 (29)	44 (49)	16(18)	4 (4)

**Table 4** Perception of students regarding Research

	Yes (%)	No (%)	Don't know (%)	Missing (%)
Is it important to apply statistical tests to all data?	60 (67)	6 (7)	24 (26)	0 (0)
Is it important to apply statistical tests to say that the result is significant?	71 (79)	5 (5)	13 (15)	1 (1)
Flaws in methodology can be corrected by a statistician	35 (39)	14 (15)	35 (39)	6 (7)
An incorrect sample size can give wrong conclusions to the study	69 (77)	3 (3)	16 (18)	2 (2)
It is a criteria of a good research to accept only significant differences	22 (24)	33 (37)	30 (34)	5 (5)
Method should not have a lot details	15 (17)	56 (62)	17 (19)	2 (2)
Blinding of an assessor can help decrease bias of results	66 (73)	2 (2)	20 (23)	2 (2)
Bias will not affect the results of the study	7 (8)	71 (79)	10(11)	2 (2)
Is it ok if a participant does not complete the study?	32 (36)	43 (48)	9 (10)	4 (4)
Is it necessary to describe all details of method to the participant?	72 (80)	9 (10)	5 (5)	4 (5)
Books are a better reference source than journals	30 (33)	34 (38)	23 (26)	3 (3)

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