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Knowledge, Attitude and Barriers of Research Among Post-Graduate Physical Therapists

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ABSTRACT

Background: The infamous profession of physical therapy, by the help of its published educational authorizations along with governing framework of professional education, has inscribed the definitive need to enlighten the physical therapist about essential principles and well-organized implementation of research.

Objective: The study was conducted to scrutinize the knowledge, attitude, and barriers towards research among post-graduate physical therapists.

Methodology: In cross-sectional descriptive study, 250 participants preceding informed consent were enrolled. Non-probability convenience sampling technique was employed. The data was gathered using semi-structured questionnaire which included demographics and the scales used were: Attitude towards Research Scale, Research and Knowledge Scale, Barriers towards Research Finding Scale. For statistical analysis, SPSS 21 version was used.

Results: There were 125 females and 125 males participants. Overall, 121(48.4%) participants agreed that research should be integrated in professional training, 97(38.8%) strongly agreed that research is exhausting, 96(38.4%) remained neutral about feeling delighted in conducting research, 74(29.6%) discovered it difficult to comprehend the concept regarding research, 175(70.0%) agreed that prime treatment choice is delivered by research, 131(52.4%) agreed that subjects inducted can discontinue at their convenience, 183(73.2%) disagreed that consent is not mandatory to participate, 93(37.2%) strongly agreed that articles are not promptly published, 113(45.2%) agreed that physicians do not collaborate with execution and 106(42.2%) disagreed that the therapist do not hold themselves competent in considering the quality of research.

Conclusion: Predominantly, the participants articulated positive attitude and showed their knowledge regarding research work. At the same time, delayed publication processing, unfamiliarity with statistical analysis, lack of time to go through the literature, lack of funds and facilities were among the barriers.

Keywords: Attitude, knowledge, research, physical therapy, specialization.

Introduction

The research encompasses of a contemporary and systematic approach, accomplished to magnify knowledge in instituting innovative facts and modern concepts for the well-being of whole community and corresponding health system.[1] Positive impact and encouragement executes a dynamic role in the enrichment of potential interest and awareness in research. Whenever the research is carried through in peculiar and remarkable area, it displays advanced demonstration of compelling and productive projects. [2]

The attitude regarding research has been revolutionized with the elapse of time. The research currently is a pronounced consideration and reflected as an essential share of clinical practice. The implementation of scientific evidence is

critical in clinical practice for physical therapists who are now depicting an optimistic point of view, although it seems to be troublesome because of numerous barriers.[3] An exceptional knowledge about research method is major matter in question and it ought to be intimated throughout the preliminary educational curriculum such that the scholar becomes acquainted about distinct terminologies, essential statistics and literature searching approaches.[4]

Various matters restrain the research process where inaccessibility of established organizations for rigorous research teaching, unskilled employees training about research, without an appropriate endorsement of research procedures, inadequate hours to conclude research, indigent observation from the faculty, extravagant amount of work, financial difficulties, and lack of concentration in research are prominent aspects. The curriculum of profession should assure that applicable and noteworthy research knowledge with expertise is attained by postgraduates by which they can approach in specialized research associated skills which may be mandatory in their forthcoming careers.[5]

A study conducted on postgraduate students, concluded that students experience frequent complications, which hinder the students' capability to perform research fortunately and it is a paramount requirement to impoverish these obstacles. Suitable courses with cost-effective and promising workshops must be planned to discourse these hurdles. Moreover, financial provision should be imparted for the enhanced government of the professional knowledge and exceptional services in postgraduate programs.[6]

Evidence suggested that the generally attitude of both male as well as female students towards research persisted to be optimistic and more positive. It was also proposed that more qualitative researches should be augmented including observations and interviews for widespread understanding and application of numerous approaches of research.[7]

Literature also specified that an excessive diversification in the attitude of students concerning research exists. A profound need for administering remarkable programs on instructing about appropriate practice of research expertise remains for specific necessities of the individual. The students recognize the immense part of practicality of research and its application in their everyday life. However, they also contemplated research as an intricate and burdensome constituent as well.[4]

A study explained the fact that in medical colleges, the participation of undergraduates in research related activities is comparatively less because of the lack of time due to extensive curriculum and less disclosure to the research methodology. Moreover, when the students acquire their post-graduation, then the requisite ability for writing a research proposal is out of sorts. For getting through the situation, the regulatory bodies reassure the undergraduates as well as the postgraduates to accomplish their research by coming up with various grants. Regardless of all these facilities, the quality of the research is not up to the mark. So, along with all these facilities provided by the institutions, students need to develop an adequate knowledge and better attitude towards research to coping with all the barriers in a better way, both at the graduate and undergraduate levels.[1]

This study was performed to focus on the knowledge, attitude, and barriers towards research among postgraduate physical therapists. The study will assist in establishing commendable and appropriate research environment by cultivating knowledge and attitude by subsiding challenging barriers of research.

Methodology

A descriptive cross-sectional study was conducted among 250 post-graduate physical therapists. The participants were inducted from Railway General Hospital Rawalpindi, National Institute of Rehabilitation (NIRM) Islamabad, Yusra Institute of Rehabilitation and Riphah International University, Islamabad. The data was collected from 2nd year post-graduate students of physical therapy through non-probability convenience sampling technique. The sample size considered through Rao soft sample calculator was 377, but due to lesser number of program enrolled students, the collected sample size was 250. Approval from ethical committee was taken (Riphah/RCRS/REC/000137). The deportment of the study occurred from Aug 2018 to Jan 2019. The post graduates including both female and male students, with 23-35 years of age were counted in the study. Informed consent was occupied from all participants.

The data was assembled using semi-structured questionnaire which consisted of demographics, Attitude towards Research Scale, Research and Knowledge Scale and Barriers towards Research Finding Scale. Five-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree) was used to scrutinize the attitude toward research. The scale comprised of 15 items including 10 positive and 5 negative statements.[4] Research and Knowledge Scale consisted of 16 questions including false and true statements.[8] Similarly, 27 questions were included for assessing barriers.[9]

Descriptive statistics and frequency analysis was carried out using SPSS version 21.

Results

In the study, 250 participants were inducted. The mean age of subjects was 25.25 ±1.58. The data was assembled from 125 female and 125 male participants. Around 90(36.0%) participants represented Orthopedic manual physical therapy, 71(28.4%) neuromuscular physical therapy, 61(24.4%) cardiopulmonary physical therapy and 28(11.2%) were inducted from sports physical therapy.

The questions utilized for assessment of the participants' attitude regarding research and their frequencies of responses are depicted in table I. Around 57.2% participants portrayed positive response considering research as an excellent choice of career, 48% agreed to inculcate research in undergraduate curriculum, 48.4% settled positively for integration of research in the professional training ,43.3% gave positive response that skills attained from research are beneficial, 50% agreed that research improves knowledge, 53.6% agreed that research focused thinking has a critical part in daily life, 55.2% showed positive attitude that research is predominant in discovering innovative ideas. On the other hand, 38.8% showed negative attitude towards research and strongly agreed that research is exhausting and distressful procedure, 27.2% felt doubtful regarding analysis of data, and 40% were concerned that they may execute numerous errors in research. (Table I)

Frequencies of participants' knowledge towards research are depicted in table II. Around 97.6% participants marked the statement correct that health associated research studies assist in medical decision making, 73.2% manifested the option wrong which states that an informed consent is not mandatory to enlist in research study, 52.4% found the declaration correct which suggested that the participants have the right to withdraw at any moment, 70% agreed that a part of health associated research guarantees the supreme treatment, 69.2% disagreed that a participant cannot alter their mind after signing a consent form. (Table II)

Similarly, descriptive statistics and frequencies related to barriers are shown in table 3. Around 64.8% participants agreed that conflicting findings are documented in the literature, 37.2% strongly agreed that research articles and reports are not swiftly published, 32% found statistical analysis incomprehensible and unclear, 31.2% referred the lack of time a big barrier, 40.4% depicted that facilities in research are unsatisfactory for implementation, 42.4% stated that the cooperation from the administration remains disappointing, 45.2% declared that the physicians do not cooperate, 31.6 indicated that the literature is not organized in a single place. (Table III)

Discussion

Research is a predominant component in the upgradation and enhancement of health care system. For implementing research, appropriate knowledge, satisfactory attitude and suitable skills are necessary. This study was intended to scrutinize the attitude, knowledge and barriers

Table I: Frequency Distribution and Descriptive Analysis of Attitude towards Research Scale

RESEARCH QUESTIONS	Strongly disagree, frequency (%)	Disagree, frequency (%)	Neutral, frequency (%)	Agree, frequency (%)	Strongly agree, frequency (%)
The research is an excellent career option for me.	9(3.6)	10(4.0)	30(12.0)	143(57.2)	58(23.2)
Research training ought to be incorporated in the curriculum at undergraduate level.	13(5.2)	9(3.6)	26(10.4)	120(48.0)	82(32.8)
The research must be integrated in the professional training.	9(3.6)	8(3.2)	29(11.6)	121(48.4)	83(33.2)
Conducting research is beneficial and worthy for the profession.	8(3.2)	0(0)	27(10.8)	129(51.6)	86(34.4)
The skills attained through research will be beneficial for me in future.	9(3.6)	6(2.4)	40(16.0)	108(43.2)	87(34.8)
Research is essential to improve knowledge.	1(0.4)	2(0.8)	43(17.2)	125(50.0)	79(31.6)
Conducting research is exhausting and distressful.	9(3.6)	14(5.6)	39(15.6)	91(36.4)	97(38.8)
Executing research is a highly complicated subject.	6(2.4)	20(8.0)	34(13.6)	99(39.6)	91(36.4)
I feel doubtful regarding analysis of data in research.	12(4.8)	49(19.6)	66(26.4)	68(27.2)	55(22.0)
I feel delighted in carrying out research.	11(4.4)	47(18.8)	96(38.4)	74(29.6)	22(8.8)
A great number of students get advantage from research.	4(1.6)	21(8.4)	65(26.0)	90(36.0)	70(28.0)
Research focused thinking has a critical part in daily life.	6(2.4)	15(6.0)	47(18.8)	134(53.6)	48(19.2)
Research is predominant in discovering innovative ideas.	3(1.2)	3(1.2)	24(9.6)	138(55.2)	82(32.8)
I perceive that it is challenging to comprehend the concepts of research.	12(4.8)	70(28.0)	55(22.0)	74(29.6)	39(15.6)
I am concerned that I may execute numerous errors in research.	10(4.0)	49(19.6)	70(28.0)	101(40.4)	20(8.0)

towards research among postgraduate physical therapists.

Table II: Frequency Distribution and Descriptive Analysis of Research and Knowledge Scale

RESEARCH QUESTIONS	True N (%)	False N (%)
Health associated research studies are performed to assist in medical decision making.	244(97.6)	6(2.4)
The individuals who participate in research do not possess lawful rights.	51(20.4)	199(79.6)
Approving to enter a research study permits the research team to approach medical record of patient even the study is concluded.	194(77.6)	56(22.4)
The possible risk and benefits for participating in research are clarified in advance.	209(83.6)	41(16.4)
An informed consent is not mandatory to enlist in research study.	67(26.8)	183(73.2)
The risk and harms for taking part in health-related study are not always discussed upfront with the participant.	8(3.2)	242(96.8)
Research studies do not accompany any rigorous rules and regulations.	84(33.6)	166(66.4)
Being a part of a health associated research guarantees that the supreme treatment will be available.	175(70.0)	75(30.0)
The individual information of the research subjects will remain confidential.	225(90.0)	25(10.0)
Being inducted in health associated study is the identical to encountering standard medical treatment.	126(50.4)	124(49.6)
After having signed a consent form and committing to participate in research, a participant cannot alter their mind.	77(30.8)	173(69.2)
Reports relating to the study's conclusions may include personal data regarding individuals who participate in research projects.	156(62.4)	94(37.6)
Each subject who is asked to take part in a research project is required to fully participate.	166(66.4)	84(33.6)
Written consent is considered as an ongoing method that begins when individual accepts an invitation to participate in a study and lasts as long as there are study participants.	224(89.6)	26(10.4)
Participants in research studies have the right to withdraw at any moment.	131(52.4)	119(47.6)
Participants in the research projects have the opportunity to ask questions to the researchers at any moment.	237(94.8)	13(5.2)

The benchmark finding of this study was that most of the participants showed commendable attitude. Around 48.4% participants agreed that research should be integrated in professional training. A study executed on medical students also presented the analogous results. Most of the clinical students (61%) depicted encouraging attitude and knowledge, only 8% manifested negative opinions. The prominence of research is identified in clinical practice and it is agreed that a pronounced fraction of time should be allocated for research. [10]

Evidence proposes that despite of the positive attitude, the participation in tasks related to research, presentation of research papers, and publications were done less significantly. To accommodate this problematic situation, numerous academics settings have affirmed paper presentations and publications obligatory for the postgraduates.[11] Another study conducted among postgraduates and undergraduates in Iran, demonstrated contradictory outcomes. There was a deteriorating attitudes with consecutive academic years, with post-graduation and various other commitments like marriage. The ground cause governing poorer attitude was elucidated due to lingering burden regarding studies, bothersome workload, and marital responsibilities.[12]

The study performed in Sudan showed homogenous findings, proposed that research should be performed in minor groups as it permits the involvement of diverse fruitful concepts and perspectives. Supreme number of the students also revealed that the participation in research was because of interest accompanied by revenue in competitions with the utmost peer pressure. [13]

A great sum of infuriating barriers needs to be confronted to improve the involvement in clinical research. A study depicted that 52.5% participants highlighted the lack of time, 65.4% reported the absence of facilities like database accessibility and 65.9% showed lack of interest and motivation due to dispersed material. Many participants disclosed that there was a farthest deficiency of motivation by the faculty to execute the research.[14] While in present study, 31.2% strongly agreed the physical therapist lacks the time to go through the research publications, 40.4% stated the facilities in research are insufficient for implementation and 31.6% agreed that the pertinent literature is not organized in a single place which may lead to the loss of focus and interest.

A study declared that the inadequate participation in research may be because of the insufficient knowledge. The data showed that the students had deprived awareness regarding the statistical techniques and research procedure including writing articles and fundamental ethics while carrying out research. It was also concluded that the lack of knowledge was also due to the increased workload in hospitals leading to less time available for research activities.[15] In present study, 97.6% participants believed that conducting health associated research studies is necessary for making better medical decisions. The participants responded well with regard to all

Table III: Frequency Distribution and Descriptive Analysis of Barriers towards Research Finding Scale

RESEARCH QUESTION	Strongly agree, Frequency(%)	Agree, Frequency(%)	Neither, Frequency(%)	Disagree Frequency(%)	Strongly disagreed, Frequency(%)
Conflicting findings are also documented in the literature.	17(6.8)	162(64.8)	46(18.4)	21(8.4)	4(1.6)
The research lacks methodology requisites.	58(23.2)	112(44.8)	47(18.8)	31(12.4)	2(0.8)
The research projects are not replicated.	18(7.2)	64(25.6)	57(22.8)	92(36.8)	19(7.6)
The research's findings and conclusions are unjustified.	43(17.2)	55(22.0)	50(20.0)	81(32.4)	21(8.4)
The research articles and reports are not published promptly.	93(37.2)	92(36.8)	30(12.0)	28(11.2)	7(2.8)
Physical therapist is doubtful whether to accept the study's findings.	0(0)	0(0)	2(0.8)	18(17.2)	230(92)
The physical therapist is resistant to innovation or change in treatment.	19(7.6)	45(18.0)	31(12.4)	80(32.0)	75(30.0)
The physical therapist believes there won't be a significant advantage from changing practices.	15(6.0)	54(21.6)	54(21.6)	87(34.8)	40(16.0)
The physical therapist does not think research is important for clinical practice.	13(5.2)	43(17.2)	32(12.8)	104(41.6)	58(23.2)
There is not a documented requirement to modify the practice.	10(4.0)	36(14.4)	32(12.8)	94(37.6)	78(31.2)
The physical therapist is not familiarized with the research.	10(4.0)	30(12.0)	25(10.0)	79(31.6)	106(42.4)
The physical therapist is unable to discuss the research findings with competent associates.	21(8.4)	42(16.8)	92(36.8)	74(29.6)	21(8.4)
The therapists do not hold themselves competent in considering the quality of research.	10(4.0)	42(16.8)	43(17.2)	106(42.4)	49(19.6)
The research data is not reported comprehensible and clear.	16(6.4)	48(19.2)	51(20.4)	116(46.4)	19(7.6)
The pertinent literature is not organized in a single place.	21(8.4)	79(31.6)	39(15.6)	67(26.8)	44(17.6)
Indications for practice are not explicit and understandable.	19(7.6)	64(25.6)	84(33.6)	61(24.4)	22(8.8)
Statistical analysis are not comprehensible and clear.	17(6.8)	80(32.0)	32(12.8)	68(27.2)	53(21.2)
The physical therapist's practice is irrelevant to the research.	12(4.8)	30(12.0)	32(12.8)	105(42.0)	71(28.4)
Research articles and reports are not promptly available.	20(8.0)	65(26.0)	34(13.6)	76(30.4)	55(22.0)
The physical therapist believes the findings cannot be generalized.	16(6.4)	54(21.6)	55(22.0)	67(26.8)	58(23.2)
The physical therapist does not possess the authority to alter patient care techniques.	21(8.4)	55(22.0)	43(17.2)	63(25.2)	68(27.2)
The physical therapist lacks the time to go through the research publications.	54(21.6)	78(31.2)	42(16.8)	53(21.2)	23(9.2)
The facilities in research are insufficient for implementation.	71(28.4)	101(40.4)	38(15.2)	29(11.6)	11(4.4)
There is not enough time on the job to put new concepts into practice.	40(16.0)	115(46.0)	38(15.2)	41(16.4)	16(6.4)
Administration does not cooperate with implementation.	27(10.8)	106(42.4)	59(23.6)	46(18.4)	12(4.8)
The physicians do not cooperate with execution.	37(14.8)	113(45.2)	66(26.4)	27(10.8)	7(2.8)
Other staff members do not reinforce in the implementation.	27(10.8)	109(43.6)	66(26.4)	39(15.6)	9(3.6)

questions being asked about the basic ethical considerations with respect to patient care.

A study showed corresponding results with the present study. The previous study was performed on the physical therapists of Colombia, depicted that 41% participants declared that the lack of research conducting skills was amongst the most prominent barrier while in present study, 42.4% participants agreed that the physical therapists are not familiarized with the research procedures. Moreover, 39% stated that there was a lack of understanding of statistical analysis while in our study 27.2% agreed that the statistical analysis are not comprehensible and clear. Around 71% agreed

that reach was necessary when practicing physical therapy whereas in present study 51.6% agreed that conducting research is beneficial and worthy for the profession.[16]

The outcomes of this study draw a parallel pattern with the suppositions from the various studies. Most of them were performed among the undergraduate students. In this study, the participants exhibited positive and auspicious attitude towards research by declaring research as a good career, supporting its integration in the professional training, claiming its conduction beneficial for the profession and researcher both, its role in discovering new ideas and understanding the critical role in research focused thinking.

At the same time, it was also unveiled that performing research was distressing and the analysis makes it a more intricate subject because of inadequacy of pertinent knowledge. The barriers ought to be considered at the administrative working to initiate favorable transformations to decrease the hindrances. To the best of knowledge, this was the novel study performed on post graduate physical therapists perusing their careers in various institutions and hospitals of Pakistan.

Conclusion

The results of the study proposed that the attitude of participants towards research remained encouraging as they found research a better career option, incorporation of research training at undergraduate level necessary, conducting research beneficial and worthy for the profession. However, they also agreed that research is distressing as they perceived it challenging to comprehend the concepts of research and execution of research as a highly complicated subject. The data showed that the students had impoverished awareness regarding the statistical techniques and research procedure but they reflected that possible risk and benefits for participating in research are clarified in advance. Moreover, the physical therapist lacks the time to go through the research publications, facilities in research are insufficient and the pertinent literature is not organized in a single place which may lead to the loss of focus and interest. The result suggests that coping strategies should be generated for supporting physical therapists' professional development and circumstances to implement paramount research findings in clinical practice by abolishing troublesome barriers.

Limitations and Recommendations:

Collected sample size was reduced from its actual count due to limited number of program enrolled students. Recent study only included senior students of post-graduation program. These outcomes ought to be opened up to students to embolden them to recognize their knowledge and perception concerning research. As the study was conducted only in Rawalpindi and Islamabad, so forthcoming research must include other cities to evaluate the magnitude to which the outcomes of this study are generalizable. Factors that influencing this study should be discussed and assessed at the administrative level i.e.: Restricted funds, inadequacies of research infrastructure, swiftly mounting cost of medical education.

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References

1. ch among medical students: A cross-sectional questionnaire-based survey. Perspectives in clinical research. 2019;10(2):73.
2. Zehra N, Hassaan A, Mushtaq S. Research Amongst Junior And Senior Medical Students: Comparison Of Knowledge, Attitude And Practice. The Professional Medical Journal. 2015;22(01):117-2.
3. Al Furaikh S, Al Omairi B, Ganapathy T. A cross-sectional survey on nursing students' attitude towards research. Journal of Health Specialties. 2017;5(4):185.
4. Meraj L, Gul N, Zubaidazain IA, Iram F, Khan AS. Perceptions and attitudes towards research amongst medical students at Shifa College of Medicine. JPMA. 2016;66(2):165-9.
5. Dadipoor S, Ramezankhani A, Aghamolaei T, Safari-Moradabadi A. Barriers to research activities as perceived by medical university students: a cross-sectional study. Avicenna journal of medicine. 2019;9(01):8-14.
6. Jacobs RJ, Caballero J, Kane MN. Medical Students' Confidence in Their Abilities and Barriers to Conducting Research: A Mixed-Methods Study. Cureus. 2022;14(1).
7. Hussain T, Ch Q. A Study on Attitude towards Research among Technology Education Students in Pakistan. Bulletin of Education and Research. 2016;38(2):113-22.
8. Powell LR, Ojukwu E, Person SD, Allison J, Rosal MC, Lemon SC. Psychometric development of the research and knowledge scale. Medical care. 2017;55(2):117.
9. Kajermo KN, Boström A-M, Thompson DS, Hutchinson AM, Estabrooks CA, Wallin L. The BARRIERS scale--the barriers to research utilization scale: A systematic review. Implementation Science. 2010;5(1):1-22.
10. Nel D, Burman R, Hoffman R, Randera-Rees S. The attitudes of medical students to research. South African medical journal. 2014;104(1):32-6.
11. AlGhamdi KM, Moussa NA, AlEssa DS, AlOthimeen N, Al-Saud AS. Perceptions, attitudes and practices toward research among senior medical students. Saudi Pharmaceutical Journal. 2014;22(2):113-7.
12. Ghoroghi S, Hassan SA, Baba M. Marital Adjustment and Duration of Marriage among Postgraduate Iranian Students in Malaysia. International Education Studies. 2015;8(2):50-9.
13. Osman T. Medical students' perceptions towards research at a Sudanese University. BMC medical education. 2016;16(1):1-6.

14. Abushouk AI, Hatata AN, Omran IM, Youniss MM, Elmansy KF, Meawad AG. Attitudes and perceived barriers among medical students towards clinical research: A cross-sectional study in an Egyptian medical school. J Biomed Educ. 2016;2016(7):5490575.
15. Memarpour M, Fard AP, Ghasemi R. Evaluation of attitude to, knowledge of and barriers toward research among medical science students. Asia Pacific family medicine. 2015;14(1):1-7.
16. Ramírez-Vélez R, Correa-Bautista JE, Muñoz-Rodríguez DI, Ramírez L, González-Ruíz K, Domínguez-Sánchez MA, et al. Evidence-based practice: beliefs, attitudes, knowledge, and skills among Colombian physical therapists. Colombia Médica. 2015;46(1):33-40.