



March 2022

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Recommended Citation

Muhammad DG, Gbonjubola YT, Abubakar IA, Elisha AT, Ahmad HY. Attitude and Barriers to Participation in Research Among Physiotherapy Interns in Nigeria. The Internet Journal of Allied Health Sciences and Practice. 2022 Mar 31;20(2), Article 13.

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Abstract

Purpose: This study is meant to assess the attitude and barrier towards research in physiotherapy interns of Nigeria. **Method:** A WhatsApp-based cross sectional online survey was conducted using an e-questionnaire (Google form). The link was sent to corresponding intern from each training institution in Nigeria. Frequency, percentages, means, standard deviation and ANOVA or t test were used to analyse the data in SPSS version 20 at alpha level 0.05. **Result:** The majority of the participants were male (73.2%) within the age range of 26-30 years (53.6%) and undergoing the training in northwestern part of the country (48.2%). Though the majority of students have undergraduate training on research, only few are currently involved in research. The participants have positive attitudes (4.11), see great barriers (3.37) and have had a good experience with research (2.70). **Conclusion and Recommendation:** Participants reported a positive attitude towards the effect of research as the majority strongly believe in its professional enhancement and improvement in patient's care. However, barriers such as lack of financial support, incentives, mentorship, and sufficient time were found to be great challenges towards conducting research.

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Acknowledgements



The Internet Journal of Allied Health Sciences and Practice

Dedicated to allied health professional practice and education

Vol. 20 No. 2 ISSN 1540-580X

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ABSTRACT

Purpose: The purpose of this study was to assess the attitudes and barriers towards research of physiotherapy interns in Nigeria. **Method:** A cross sectional online survey was conducted via WhatsApp using an e-questionnaire (Google form). The link was sent to corresponding physiotherapy interns from each training institution in Nigeria. Frequency, percentages, means, standard deviation and ANOVA or t-tests were used to analyse the data in SPSS version 20 at alpha level 0.05. **Result:** The majority of the participants were male (73.2%) within the age range of 26-30 years (53.6%) and were undergoing physiotherapy education in the northwestern part of the country (48.2%). Though the majority of respondents had undergraduate training on research, only few were currently involved in research. The participants had positive attitudes (4.11), perceived great barriers (3.37) and had good experiences with research (2.70) in the past. **Conclusions:** Participants reported a positive attitude towards research as the majority strongly believe in its contributions to professional development and improvement in patient care. However, barriers such as lack of financial support, incentives, mentorship, and sufficient time were found to be great challenges towards conducting research.

Keyword: interns, physiotherapy, research experience

INTRODUCTION

Over the years, medical education has evolved from learning facts to acquiring skills, knowledge, and attitude.¹ This makes it very important to promote critical thinking and reasoning skills in medical students at an earlier age in order to develop a positive attitude towards health care research.² Clinical instructors play a vital role in the clinical learning of undergraduate physical therapy students (note: the terms “physical therapy” and “physiotherapy” are used interchangeably depending on the country). It is very important for the clinical instructors to train the physical therapy students in accordance with the growing challenges. The clinical learning must prepare the students to be able to work as primary health care providers.³

Physiotherapy as described by World Physiotherapy is a health care profession concerned with human function and movement and maximizing physical potential. It is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, intervention, habilitation, and rehabilitation.⁴ Since 1994, all entry-level physiotherapy graduates in Nigeria undergo a compulsory one-year clinical internship in an accredited teaching hospital to obtain a professional license. The clinical internship involves clinical placements of an intern across required specialties such as muscular imaging, orthopaedics, neurology, and general physiotherapy. The aims of these programs are to give physiotherapy students community exposure and a chance to get real life experience under the supervision of a licensed physiotherapist.

Research has been described as a systematic process of investigation with the aim of contributing to the body of knowledge that shapes and guides academic and/or clinical disciplines.⁵ Clinical research, on the other hand, is a systematic search for facts or the scientific investigation of matter directly related to the overall care of patients.⁶ Clinical research is necessary to advance the practice of physical therapy in order to assist physical therapists in the development and testing of knowledge unique to their practice, to help in the growth of their practice, and to enhance the level of patient care.^{7,8} Health professionals, including physiotherapists, are expected to integrate research findings and change practice accordingly.⁹ The American Physical Therapy Association emphasized that the strength of physical therapy depends on research to justify the scientific basis for its practice.¹⁰

Worldwide, several studies have looked at attitudes and barriers toward research across multiple professions. The studies involving physical therapists demonstrated a positive attitude toward research *and* the presence of multiple barriers. Physical therapists tend to see research as both critical to the profession itself and germane to individuals’ professional development.¹¹ The findings of Hamzat et al on the participation level of Nigerian physiotherapy clinicians in clinical research showed Nigeria physiotherapists also appreciate the relevance of clinical research to clinical practice in spite of their low level of participation in clinical research.^{12,15}

The most commonly reported barriers to physical therapy research, however, were lack of time and funding, a high workload, and unfamiliarity with research procedures and statistics.^{11,12,16} These findings are shared by other health care professions as well.^{17,18} However, there is a dearth of information regarding the attitudes and barriers to participating in research by Nigerian physiotherapy interns. This study aims to identify those attitudes and barriers.

METHODS

Study Design

This was a cross-sectional online survey created to identify the attitudes and barriers to participation in research among physiotherapy interns in Nigeria.

Participants.

Physiotherapy interns in Nigeria from any training institution and from any part of the country were recruited for this study. An all-population sampling (census) technique was used as there are less than 250 physiotherapy interns, and the researchers felt it was reasonable to sample the entire population. Inclusion criteria included all Nigerian physiotherapy interns, and exclusion criteria included interns who are not on social media and those unwilling to participate in the study.

Data Collection Instrument

A consent form, a proforma data sheet, and a questionnaire were used in this study. The purpose, background, risks, confidentiality and benefits of the study were explained to the participants in the informed consent form in order to ensure maximum cooperation of the participants before sending the questionnaire online.

A self-administered questionnaire was adopted from Jahan et al that was used in a large survey of clinicians in Oman and had been assessed for face validity by experts.¹⁹ The questionnaire had three different components. The first section aimed to collect socio-demographic data (gender, age etc). The second section aimed to assess physiotherapy interns’ attitudes and identify possible barriers towards conducting research, using a Likert’s scale 1–5. Higher scores indicates a more positive attitude and

greater barriers. The third section examined physiotherapy interns' previous experience in conducting research, also by using a Likert's scale 1–5, by choosing appropriate responses among given options. Mean of each item was obtained. Large mean value implies positive attitude, great barriers and good experience for attitude, barriers and experience section respectively.

Data Collection Procedure

Ethical clearance was sought and obtained from the research and ethics committee of the Kano State Ministry of Health before the commencement of the study.

The name of at least one intern from each training institution (Centre) was collected and the purpose of the study was explained to them. A link to the online questionnaire (Google form) was subsequently sent to each of the corresponding interns from each of the training centers. The corresponding intern was then requested to share the link to their WhatsApp group chat for other interns in the Centre to complete the questionnaire (See appendix). This individual also served to clarify any questions the other interns in his/her center had.

Follow-up for non-responders was achieved via a reminder sent to the corresponding intern at each Centre at the end of each week.

Data Analysis Procedure

All analysis was conducted using SPSS V20. Descriptive statistics such as frequencies and percentages were used to summarize the data obtained from socio-demographic variables. Mean was used to summarize the participant's response because the data was taken using Likert scale. Normality of data was assessed using a Shapiro-Wilk test. An ANOVA and an independent t test were used to determine the differences in attitudes, barriers, and experience on research among the participants. Statistical significance was set at $p < 0.05$.

RESULTS

Fifty-six interns completed and submitted the questionnaire, and all were considered for analysis. The response rate of the study was poor despite the wide distribution of the questionnaire as can be seen from the demography of the participants; participants from all the six regions of Nigeria were recruited. Table 1 shows the socio-demographic variables of the study participants.

Table 1. The socio-demographic variables of the study participant

Variables	n	%
Age		
20-25	25	44.6
26-30	30	53.6
>30	1	1.8
Gender		
Male	41	73.2
Female	15	26.8
Ethnicity		
Hausa	30	53.6
Igbo	5	8.9
Yoruba	19	33.9
Others	2	1.8
Months of internship training		
1-4	17	30.4
5-8	7	12.5
9-12	32	57.1
Institution of undergraduate training		
BUK	26	46.4
UNIMAID	2	3.6
UI	7	12.5
UNILAG	6	10.7
OAU	7	12.5
NAW	4	7.2
Foreign train	3	5.4

Region of internship training		
Northwest	27	48.2
Northeast	4	7.1
North Central	4	7.1
Southwest	15	26.8
Southeast	4	7.1
South South	2	3.6
Are you presently involved in any research?		
Yes	8	14.3
No	48	85.7
Have you ever conducted research on your own?		
Yes	45	80.4
No	11	19.6
Have you been taught how to conduct research during your undergraduate?		
Yes	54	96.4
No	2	3.6

It is interesting to note that only 17.9% have previously published a research work (Figure 1).

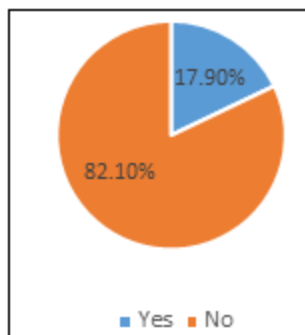


Figure 1. Percentage of the participants with published work

Table 2 shows the attitude of the respondents towards research. Overall, the participants held positive attitudes toward research with more positive attitudes towards effect of research on professional enhancement and improvement in patient care.

Table 2. The attitudes of the respondents towards research

Attitudes	Mean	Standard Deviation
Promotes critical thinking	4.09	1.12
Improves patient care	4.39	1.07
Helps in promotion	3.89	1.25
Helps professional enhancement	4.30	0.99
Helps to change health policy	4.02	1.34
Overall attitude	4.11	0.15

Table 3 shows the barriers toward research as perceived by the participants. Overall, the participants experienced barriers in conducting research, with greater barriers from lack of financial support and incentives, lack of mentorship and statistical support), lack of communication and linkages with other institutions, and lack of sufficient time.

Table 3. The barriers toward research

Barriers	Mean	Standard deviation
Insufficient research allotted time	3.29	1.25
Lack of research training and skill	3.04	1.49
Lack of statistical support	3.55	1.19
Lack of mentorship and teamwork	3.55	1.31
Lack of financial support	3.82	1.36
Technical and logistic support like computer and internet not easily available	3.23	1.44
Lack of self-interest and motivation	3.05	1.31
Lack of communication and linkages with other institutions	3.38	1.35
Lack of financial incentives	3.57	1.20
Overall barrier	3.37	0.96

Table 4 shows the experience of the participants in research. Overall, the participants had good experiences with research. However, the participants had poor experience at applying and receiving grants but good experiences at finding relevant literature, report writing, generating research ideas, reviewing literature, analyzing and interpreting data, and abstract presentation at conferences.

Table 4. Experience of the participants with research

Experience	mean	Standard deviation
Writing a protocol	2.71	1.19
Writing and presenting a research report	3.25	1.15
Critically reviewing literature	3.04	1.16
Finding relevant literature	3.43	1.04
Generating ideas	3.16	1.14
Analyzing interpreting data	2.86	1.35
Publishing research	2.18	1.32
Received Grant	1.61	.97
Abstract presentation in conference	2.86	1.35
Overall experience	2.70	0.82

Table 5 shows the association between socio-demographic variables of the participants and attitudes, barriers, and experience with research. There was no significant association between previously publishing research or attending lectures on research and attitudes, barriers, and experience with research. Only duration of the internship is associated with positive attitude and good experience of research but is not associated with barriers of research.

Table 5. Differences between socio-demographic variables of the participants in attitudes, barriers, and experience in research

Variables	Mean	Test	p-value
Attitudes			
Months of internship training		ANOVA	0.02*
1-4	18.35		
5-8	19.43		
9-12	22.59		
Previously published research work		t test	0.43
Yes	21.7		
No	20.34		
Have you been taught how to conduct research during undergraduate		t test	0.90
Yes	20.57		
No	21.0		
Barriers			
Months of internship training		ANOVA	0.62

1-4	31.71		
5-8	31.71		
9-12	29.31		
Previously published research work		t test	0.67
Yes	31.4		
No	30.1		
Have you been taught how to conduct research during undergraduate		t test	0.43
Yes	30.52		
No	25.50		
Experience			
Months of internship training		ANOVA	0.02
1-4	20.17		
5-8	25.14		
9-12	26.34		
Previously published research work		T test	0.89
Yes	24.71		
No	24.34		
Have you been taught how to conduct research during undergraduate		t test	0.22
Yes	24.56		
No	18.00		

Discussion

In this study, a total of 56 (22% response rate) physiotherapy intern participated in the online survey. The fact that information was received from a very small percentage of physiotherapy intern in Nigeria (low response rate) impairs the generalizability of the sample in this study to the population it was intended to represent. It is, however, likely that the characteristics of the participants would not be different from others because the study recruited from almost all the geopolitical zones of the country.

Nearly all the respondents indicated they have conducted research to some degree in partial fulfillment of the requirements for receiving their basic physiotherapy degree, an indication that the research and research reporting are in the undergraduate curriculum for physiotherapy in Nigeria. Yet less than one quarter (17.9%) have previously published their research work, and almost the same proportion of respondents, (14.3%), are currently involved in research. This observed trend could imply that the respondents merely submitted dissertations for the sole purpose of obtaining an academic degree, without absorbing the lessons and imbibing the culture of research while trying to make their findings known to the general public. This is consistent with findings of Vairamani and Akoijam.²⁰

Almost all respondents showed a positive attitude towards research, and they all believe the outcome of research is beneficial in enhancing their professional skills and improving the quality of care provided for patients. This finding was similar to previous studies.^{19,21,22} However, some respondents identified barriers to carrying out research by the interns which include (but was not limited to) financial support, incentives and lack of mentorship, and statistical support. Lack of funds or financial support was the highest on the list. As such, it may thus be argued that provision of research funds might motivate and contribute positively to the attitude and participation of Nigeria physiotherapy interns in research. Similar results were previously documented by Hamzat et al. and Al-Abdullatee.^{15,23}

Also, "time" as a limitation to participating in research could be an indication of the heavy clinical workload (patient care, clinical presentations, assignments, and call duty schedule) of the respondents. This finding was in tandem with that of Hamzat et al. and Al-Abdullatee.^{15,23} Lack of research training and poor access to library facilities have been identified in earlier studies.^{24,25}

Moreover, most of the participants in the present study have had good experiences in research, but little experience at applying for and receiving funding. However, they reported good experiences at finding relevant literature, report writing, generating research ideas, reviewing literature, analyzing and interpreting data, and presentation of abstracts conferences. This is also in accordance with the finding of Jahan et al. and Aslam et al.^{19,24}.

There was no significant association between previously publishing research and receiving lectures on research and attitudes, barriers, and experience of research. Only the duration of the internship is associated with positive attitudes and good experiences with research but is not associated with barriers of research. This is similar to the findings of Khalaf et al. that showed positive attitudes more common in senior participants than junior ones.²¹

Limitations

Although the study is novel, there were some limitations. The sample size may have hindered the available power to detect smaller effects and to detect differences between the sub-groups within our sample.²⁶ The online data collection used might have limited the validity of the data collected as suggested by previous studies that online research does not always result in valid data collection.²⁶

CONCLUSION

The participants of the study hold a positive attitude towards research; however, they report barriers to research participation. This study revealed there was adequate training in research but limited education in grant application and retrieval. Participants reported a positive attitude towards the effect of research as the majority strongly believe in its professional enhancement and improvement in patient's care. However, barriers such as lack of financial support, incentives, mentorship, and sufficient time were found to be great challenges to conducting research.

RECOMMENDATIONS

The body that regulates the physiotherapy profession in Nigeria should find a way to address the gap barriers identified by the study participants with effective intervention which could be in form of providing some dedicated research time for interns in their logbook and make it mandatory for interns to publish at least one research work during their internship year. Also, a well-structured competency-based curriculum for grant application in research, a mentorship programme, and an incentive to engage in research may enhance participation in research.

Acknowledgements we hereby appreciate all interns that participated in the study.

Conflict of interest: none

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APPENDIX: SURVEY QUESTIONNAIRE

ATTITUDES AND BARRIERS TO PARTICIPATION IN RESEARCH AMONG PHYSIOTHERAPY INTERNS IN NIGERIA

Questionnaire

Section A: Demography

The first part of the questionnaire aims to collect basic background information on you. Kindly fill out the requested data.

1. **Age groups:** 20 -25 years 26 – 30 years >30 years
2. **Gender:** Male Female
3. **Ethnicity** Hausa Igbo Yoruba others
4. **Months of internship training** 1- 4 months 5-8 months 9-12 months
5. **Institution of undergraduate training**-----
6. **Region of internship training**-----
7. **Are you presently involved in any research:** Yes No
8. **Have you ever conducted a research by your own:** Yes No
9. **Have you ever involved in research training (at least 8 hours of research education):**
 Yes No
10. **Have you previously published a research:** Yes No
11. **Have you taught how to conduct research during your Undergraduate**
 Yes No

Section B: Attitude & Barriers in Research Participation.

The first part of this section assesses Nigerian Physiotherapy interns' perceived barriers and attitude in research participation within the clinical setting. Please rate the extent to which you believe research is helpful by ticking the appropriate box.

NO.	Statements	1	2	3	4	5
Research Helps: Perceived Value		1 is not helpful and 5 is the most helpful				
1.	Promotes critical thinking					
2.	Improves patients' care					
3.	Helps in promotion					
4.	Helps professional enhancement					
5.	Helps to change health policy.					

The second part of this section evaluates the barriers towards conducting research among physiotherapy interns. Please read each statement below and rate appropriately.

NO.	Statements	1	2	3	4	5
Barriers to Research:		1 is no barrier and 5 is the maximum barrier				
6.	Insufficient research allotted time					
7.	Lack of research training and skills					
8.	Lack of statistical support					
9.	Lack of mentorship and teamwork					
10.	Insufficient financial support					
11.	Technical and logistic support like computer and internet not easily available.					
12.	Lack of self-interest and motivation					
13.	Lack of communication and linkages with other institutions					
14.	Lack of financial incentives.					

Section CV: Research Self-Experience

This last section of the questionnaire aims to study physiotherapy interns' previous experience in research participation. Please rate your level of experience in each of the following.

NO.	Research Self-Experience	1	2	3	4	5
		1 means no experience and 5 means very experienced				
1.	Writing a proposal					
2.	Writing and presenting a research report					
3.	Critically reviewing the literature					
4.	Finding relevant literature					
5.	Generating research ideas					
6.						
7.	Submitted a research paper for publication					
8.	Applied and received a grant					
9.	Abstract presentation at a conference					