



Health Research Conducting Quality Perceptions of Medical Postgraduate Trainees

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Authors' contributions

This work was carried out in collaboration between both authors. Author SC designed the study, collected data, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author KNM reviewed the analysis of the study. Guided throughout the literature search and write-up of final draft. Improved the manuscript and finalized it. Both authors read and approved the final manuscript.

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ABSTRACT

Background: Health researchers in medical universities are surrounded by existing hurdles to the health research during the process of conduction which may affect the quality of conduction of health research undertaken by the medical trainees. The current study is conducted to determine the effects of barriers on the quality of conduction of health research.

Study Design: Descriptive cross-sectional study.

Place and Duration of Study: Research conducting postgraduate trainees in various disciplines in Liaquat University of Medical & Health Sciences, Jamshoro from 1st September 2018 to 31st December 2018.

Methodology: Two hundred & sixteen health research trainees were recruited for study through stratified sampling technique; the subjects included 79 males & 137 females of age bracket of 24-50 years. After taking the consent, data was collected on a preformed questionnaire and

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analyzed in SPSS version 23.0 by computing proportions, mean \pm standard deviation and using Chi-square test as statistical test of significance with the p -value of 0.05 taken as level of significance.

Results: Overall, two hundred and fifty subjects were approached to obtain the complete response of the required sample of two hundred and sixteen. The response rate was 86.4%. The 72 (33.3%) trainees in medicine and allied sciences, 66 (92%) trainees experienced various barriers in quality of conducting of health research. From 42 (19.4%) trainees in surgery and allied sciences, 22 (51.2%) perceived effects of barriers on their health research conducting (HRC) quality. Amongst 33 (15.3%) trainees in basic sciences, 15 (45%) faced various hurdles while going through their research; surprisingly all the trainees conducting research in field of pharmacology faced various barriers during research process. Out of 67 (31.0%) postgraduate trainees in dentistry, 60 (90%) reported various barriers ($p= 0.03$).

Conclusion: Quality conduction of health research affected by barriers is experienced by majority of medical researchers and trainees during their postgraduate training. The majority of the postgraduate trainees conducting research from clinical fields face more effects on their research conducting quality as compared to the basic sciences researchers.

Recommendation: Quality assessment protocol should be incorporated during research conducting process. Actions should be taken for reducing the barriers related to HRC quality. Collaborative health research amongst clinical and basic sciences fields can be done to improve the quality.

Keywords: Health research; quality health research; medical trainees; research conducting quality.

1. INTRODUCTION

Health research is the central part in course of every field of medicine whether it is related to basic medical sciences, medicine or dentistry. Progress in disease surveillance, diagnosis, treatment and prevention all comprehensively depend on quality research. In the scenario of globalization of diseases, it has become very important to incorporate evidence-based research in training thereby making quality of health research (HR) even more crucial [1]. Unfortunately, HR has not received importance in developing world as per requirements and it is mostly considered as just a wastage of time & money instead of investment in health [2]. In universities the key purpose of the post-graduation in different specialties in medical education is to impart services to communities in general and emerging research attitude and skills within the trainees in particular in the concerned field. But research in training has turn out to be imitative, repetitive and instrument oriented rather than goal oriented; the main motive behind this is not aimed to make an important innovation [3]. The same issue was also addressed in a conference held in Havana, Cuba, in year 2009, where in fundamental modifications were emphasized to mark health research conduction (HRC) for development [4,5]. Unfortunately, in developing countries, research over-all and HR in specific has been least touched by the

governments [6] resulting in failure to achieve the place of a principal institution for the conduction of high quality health research to point out different national health hitches [7]. The quality of the research training in some of the medical universities in Pakistan like other countries has been seriously neglected displaying a depressing image. Contrary to this, other emerging economies, like China, Poland etc. occupy the upper place in the list of countries whose medical literatures are highly cited [8,9]. The above facts and figures raise the questions related to barriers in the process of health research conducted in various disciplines of medical universities [10]. These barriers might be pertaining to the prevailing social, economic and political situations in these nations significantly affecting the meaningful health research in different fields at different levels [11]. attached with clinical fields in medical universities find their research methodology courses, particularly quantitative methods and statistics more challenging than their major subject trainings. The reasons for this vary from lack of in-depth training and supervisors having uneven approach to research. Such differences may cause troubles in completing degrees because concepts of research arisen from their own experiences did not change much through teaching [12,13]. The dearth of health research in the medical curriculum, absence of guidance to learners to run their projects, non-availability of facilities,

lack of confidence, meagre funding, inappropriate mentorship, non-access to free full texts on the internet, unequipped and outdated libraries, ethical concerns (in conducting clinical trials) are few among the long list of barriers in conduction of effective health research [3, 9]. Scholars belonging to various medical disciplines find the concepts of research non-understandable in terms of its worth and essentiality in their professional life [14] Even the bulk of the health researchers are unaware about the benefits of health research conduction of good quality. Such experiences and challenges faced by researchers raise fingers towards the compromised quality of health research conducted by them [15, 16]. The current study aims to explore the effects of the commonly prevalent barriers for the good quality of conducting of health research in various study fields in a public sector medical university.

2. MATERIALS AND METHODS

A descriptive cross-sectional survey was conducted in four months' duration from 1st Sep 2018 to 30th December 2018 after the approval of study by various disciplines of Liaquat University of Medical & Health Sciences, Jamshoro (LUMHS) on postgraduates involved in health research conduction as a compulsory component of their curriculum at LUMHS. Two hundred & fifty subjects were approached through stratified sampling technique. The strata of subjects were made in accordance to the given breakup report of previous year from the office of postgraduate medical center of the university. All registered post graduate students in LUMHS involved in research at least for six months inclusive of funded and non-funded in fields of basic and clinical sciences were included on the basis of voluntary participation. The undergraduate students and those who hadn't yet started the HR conduction process were excluded. Data collection was done by principal researcher herself from two hundred and sixteen postgraduates conducting their HR through filling up of a questionnaire after taking their voluntary written consent. The data inclusive of demographic variables such as; age, gender, and field of study and study variables; effect of barriers on HRCQ (health research conducting quality), level of effect on the HRCQ (e.g. low, moderate, high) were collected.

3. RESULTS

Overall, two hundred and fifty subjects were approached to obtain the complete response of the required sample of two hundred and sixteen. The response rate was 86.4%.

The mean age of participants was 29 ± 3.21 years. The age range was recorded as 24-49 years. The male: female ratio was 1:1.73; the gender wise segregated age distribution was 31 ± 1.4 years among females as compared to 27 ± 2.1 years among males. See Table 1.

Table 1. Demographic Characteristics of Study Participants

Socio-demographic characteristics	Frequency (%)
Age (in years)	
24 to 31	178 (82.40%)
32 to 40	34 (15.74%)
41 to 49	4 (1.86%)
Gender	
Males	79 (36.57%)
Females	137 (63.43%)

As per stratified sampling criteria, the postgraduate trainees selected from different disciplines is depicted in Table 2. The highest number of subjects i.e. 72 (33.33%) were selected from the field of medical and allied sciences; contrasting to this, 33 (15.27%) postgraduate trainees were selected from the basic sciences. Surprisingly, all the postgraduate students conducting research in pharmacology stated as facing various barriers while conducting research. Sixty-three (31.02%) study participants were selected from the field of dentistry while forty-two (19.44%) were selected from surgery. Lastly 4 (2%) subjects were selected from other fields.

The highest proportion (92%) of the trainees from the field of medicine and allied sciences were affected from barriers of quality health research. amongst all. The second most affected group of students were from field of dentistry i.e. 90% who faced the same situation in conducting quality of health research. Fifty-one percent trainees from the field of surgery and allied faced such affect. While least affected proportion of the trainees (i.e. 45%) belonged to field of basic sciences inclusive of researchers conducting HR in the field of pharmacology. ($p= 0.03$). See Table 2.

Table 2. Disciplinewise distribution of study participants and its effect on while conducting health research

Disciplines of postgraduate trainees	Frquency(%)	Health research conducting affected (%)
Medicine and allied sciences	72 (33.33%)	92%
Dentistry	67 (31.02%)	90%
Surgery and allied sciences	42 (19.44%)	51.6%
Basic sciences	33 (15.28%)	45%
Any other (miscellaneous)	2 (0.93%)	4%

As chart 1 shows the conducting quality of health research of 22% subjects of medical and allied were highly affected; whereas only 6% of the basic sciences trainees were highly affected for the same. Surgical and allied researchers had 17% of the postgraduate trainees facing the same high level effects whereas 14% researchers of dentistry perceived the effects on high levels. ($p < 0.01$).

As Table 3 illustrates, on breaking down the effects to the distinct barrier it was found that lack of interest has the effects on health research conduction for most of the trainees belonging to medicine and allied sciences; while inadequate capabilities seemed second reason opted by trainees for impeding quality of conducting the health research. While deficient experience, time limitations, disturbed emotional state of researchers and limited resources in spite of causing hurdles did not seem to affect the quality of conduction of health research. See Table 3.

4. DISCUSSION

There is dearth of research exploring the effect of barriers on conduction of health research by postgraduate trainees despite the fact that many studies have been done to identify and highlight the challenges occurring in the process conducting health research. Besides exploring this effect, the current study is an attempt to bridge this gap in research by highlighting the effects of existing barriers on the quality of health research conducted by trainees of defined fields in medicine. A snapshot from a study from Faisalabad reported that only a few of the trainees do literature search and very few of the health researchers have experience of publication of their research in reputable journals[1]. The inadequate guidance and supervision during training was highlighted as the major reason leading to failure in conduction of quality health research in developing countries [1,12,14,16,17]. The current study endorses the

Chart 1. Level of effect on quality while conducting health research in various disciplines

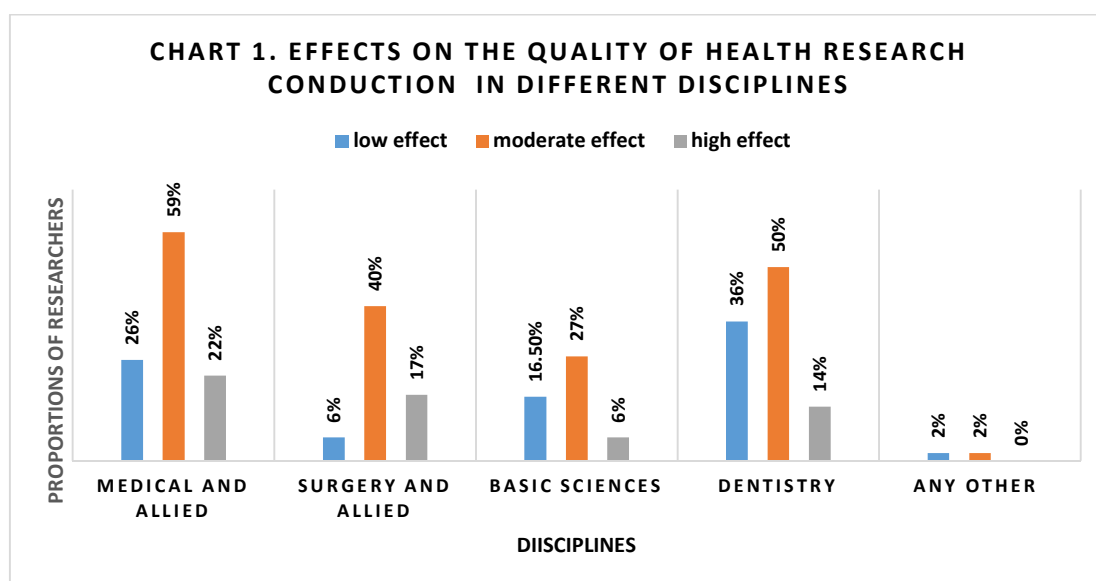


Table 3. Barriers for the health research conduction

Study field→ Variables↓	Medicine & allied sciences	Surgery & allied sciences	Basic sciences	Dentistry	Other disciplines	P-value
Lack of interest in research	67.70%	38.70%	31.90%	62.70%	2%	0.003
Deficient experience of research	61.70%	35.00%	31.30%	43.60%	2%	0.10
Disturbed emotional state	62.30%	34.40%	24.40%	60.50%	2%	0.10
Inadequate capabilities	66.00%	36.60%	32.40%	64.30%	2%	0.04
Time constrains	58.50%	31.70%	28.10%	54.10%	2%	0.10
Improper supervision	56.40%	28.50%	30.30%	56.70%	2%	0.005
Study setting restrains	54.20%	33.90%	28.70%	54.10%	2%	0.04
Not research oriented workplace enviroment	50.00%	29.60%	24.90%	49.80%	2%	0.010
Limited resources	46.70%	31.70%	22.70%	45.50%	2%	0.08

same as majority of the researchers have been facing unyielding quality of conducting the health research due to lack of capabilities. This seems to be the second leading factor amongst medicine and allied field researchers and the workplace environment which is not research oriented.

Results of the current study reveal dentistry as the second most affected field of health research as 90% of the trainees from this field face undesirable influence on the quality of conduction of health research. Amongst the dental trainees, 16% ($p < 0.01$) face the barriers at higher level while another 50% of the trainees face various barriers at moderate level. The inadequate capabilities ($p = 0.04$) seem to surpass other challenges but lack of interest ($p < 0.01$), non-research oriented workplace environment ($p = 0.01$), improper supervision, and other factors also contribute considerably. Similar were the findings in other studies conducted on the cohorts of researchers reporting the non-conductive work place environment for research [17].

Current study also identified that half of the proportion of trainees from surgery and allied field get affected by the prevailing barriers as compared to the medicine and allied trainees. These findings are of utmost importance especially in the scenarios where many of the studies are found not comparing the discipline wise details of barriers in quality of conducting health research [18,19]. Although current study

identified basic sciences as the least affected field in research but still existing barriers seem to affect approximately half of the basic sciences trainees; moreover, all trainees who were engaged in carrying out research in the field of pharmacology were facing hurdles in conducting health research of good quality ($p < 0.01$). Unfortunately, there is dearth of literature to compare this domain of our research. This crucial finding again helps to work as a connector between the barriers and their effects on the health research conduction because many important barriers are identified affecting the majority of researchers' HRC. Another study on same objectives highlighted that besides inadequate research funding, the interrupted electricity supply (51%), meager access to research materials (56%), non-functional laboratories (19%), insufficient support for research collaborations (18%), inadequate provision of information (46%) and inadequate mentoring (35%) were the strong barriers for conduction of quality health research [20].

5. CONCLUSIONS

In the light of current study, it is concluded that majority of postgraduate students perceive that quality of conducting the health research is being affected due to presence of various co-existing barriers. Where in the light of categorization it is also noted that postgraduate trainees from the clinical departments perceive more effects then their colleagues in basic sciences departments ($p = 0.03$). Despite this, the 45% of the trainees of

basic sciences still face the same barriers affecting health research conduction quality like improper supervision, lack of interest, inadequate capabilities, meager research oriented environment. These barriers need to overcome if quality research in health is desired.

6. RECOMMENDATION

In the light of current research, it is recommended that quality assessment tools should be incorporated in the process of conducting health research by the institutions and concerned authorities.

Action plans should be created for the reduction of the barriers affecting quality of conducting the health research.

Collaborative meetings and discussions among HR conducting researchers of basic sciences and clinical sciences should be exercised regarding importance of health research and its quality conduction.

CONSENT

All authors declare that 'written informed consent was obtained from the health research trainees from various fields before filling up the questionnaire.

ETHICAL APPROVAL

The authors have obtained all necessary ethical approval from the appropriate Research Ethics Committee (REC)".

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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