

Difficulties Faced by Medical Postgraduate Students in their Thesis: A Cross-Sectional Study

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Abstract

Introduction: According to MCI it is mandatory for every Medical postgraduate student to conduct basic level research in the form of thesis. However, due to a large number of difficulties the thesis is one of the most cumbersome activities. *Aim & Objectives:* 1. To determine the difficulties faced by Medical Postgraduate (PG) students in conducting their Thesis. 2. To measure the level of difficulty faced by Medical Postgraduate students in their Thesis work 3. To determine the various types of difficulties faced by Medical Postgraduate students at various levels of conducting thesis 4. To suggest possible recommendations to overcome the difficulties encountered. *Materials & Methods:* Cross-sectional study was conducted on final year PG degree students of a medical college employing Universal sampling technique. A self-administered, pre-tested, structured Questionnaire of 37 questions was completed and returned. A total difficulty score was calculated. *Results:* 32.47% subjects had scores corresponding to moderate level of difficulty in conducting their thesis. Selection of thesis topic, misleading literature online and heavy work schedules were few of the difficulties faced by the study subjects. *Conclusion:* Study subjects faced moderate level of difficulty in conducting their thesis and had unsatisfactory knowledge of health research.

Keywords: Difficulties; Medical; Post Graduate Students; Thesis.

Introduction

With rapidly developing advances in the medical and surgical fields comes the necessity of widely disseminating this new knowledge and testing their authenticity and applicability under various circumstances. In the computer savvy 21st century the internet is the major source of dissemination of latest knowledge. It is essential that health care providers at all levels are able to correctly interpret the information and critically analyse its application under their own clinical setting [1].

Medical PG students are usually required to engage in various academic undertakings during their three-year training, including medical research. The research is in the form of Thesis or Dissertation.

Thesis has been defined as “a long essay or dissertation involving personal research, written by a candidate for a university degree”. It is a dissertation advancing an original point of view as a result of research, especially as a requirement for an academic degree [2]. Thesis has also been defined as a lengthy academic paper or dissertation based on original research, especially as work geared towards an academic degree [3].

As per the Medical Council of India (MCI) requirements, Postgraduate (PG) students have to carry out a dissertation project as a part of their Doctor of Medicine or Master of Surgery (MD/MS) curriculum as a mandatory requirement for achievement of their Post-graduate degree [4]. In order to encourage research orientation in postgraduate students, currently MCI has made it mandatory to not only attend one international or national conference, but also give an oral or poster presentation and send the article for publication [4]. It can be argued that the way of directing the thesis is not only crucial in training the student and promoting his scientific skills, but also it is effective

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in promoting quality of scientific products, produced by the university [5].

PG students are required to submit a synopsis of their thesis to the University after approval from the Institutional Ethics Committee within the first six months of joining the respective PG course. After the Synopsis is approved by the University, the actual data collection, entry, analysis and write up is started.

It is a common observation that a majority of PG students engage in conducting the actual data collection and write-up part of their research projects only during the 3rd year of residency. It has also been observed that students often face various difficulties in conducting as well as writing their thesis. In fact, many students find thesis related work, as one of the most challenging aspects of their postgraduate curriculum [6-8]. Very few studies have attempted to evaluate the difficulties faced by the PG medical students in performing this basic level research during their course duration from the incipient stage to the final printing of the thesis. So, with this objective in mind the present study was planned.

Aim and Objectives

Aim

To determine the difficulties faced by Medical Postgraduate students in conducting their Thesis

Objectives

1. To measure the level of difficulty faced by Medical Postgraduate students in their Thesis work
2. To determine the various types of difficulties faced by Medical Postgraduate students at various levels of conducting thesis
3. To suggest possible recommendations to overcome the difficulties encountered

Materials & Methods

Approval from the Institutional Ethics Committee was obtained prior to commencement of the study (vide letter no. 724 dated: 21/12/15). A Cross-sectional study was conducted from September 2015 to February 2016 at a Tertiary care medical teaching college and hospital in Central India. A total of 84 PG degree students (not including various diplomas) are enrolled in the institute each year. Universal sampling technique was employed. Sampling unit was an individual PG student.

All Final year PG students of the medical college were included as study subjects in the study. These students were selected because normally it has been observed that data collection, analysis and actual thesis writing work is done during the final year of the three-year long residency. In all 77 students responded (response rate = 91.66%). The dissertation is printed in hard bound books and submitted to the University normally by the months of December and January.

The study tool was a self-administered, pre-tested, structured Questionnaire. It was developed after extensive discussion with colleagues, seniors and subject experts and relevant literature review. It was pilot tested on five PG students and then with a few changes after consulting senior experts, it was finalised. It comprised of six broad categories related to thesis work like selection of topic, data collection, analysis etc.; and various questions under each category. There were 37 questions in all. The questionnaire had responses mentioned in the form of a five-point Likert scale i.e. 'Definitely yes', 'Yes', 'Don't know/No comment', 'No' and 'Definitely no'. Many times students fear reaction from superiors or departmental enquiry and do not give their true opinions. Hence, no socio-demographic or personal data was asked for with a hope of ensuring un-biased and true responses from the study subjects. They were required to mark any one appropriate response for each question.

Each response was given a score from one to five i.e. '5' for 'definitely yes', '4' for 'yes' etc. to '1' for 'definitely no'. For 21 questions reverse scoring was used i.e. score of 1 was given for 'definitely yes' and similarly in reverse order up to 5 score for 'definitely no'. A total difficulty score was calculated for all the subjects. The maximum score i.e. facing tremendous amount of difficulty in conducting thesis on the scale, was 185.

The subjects were contacted in the wards or out-patient departments and given the questionnaire. Verbal consent was taken from them and they were asked to return the completed questionnaire at the end of the day. The data collected was entered into Excel 2010 sheet and SPSS (Statistical package for social sciences) software version 20 was employed to analyse the data.

Results

Table 1 shows the frequency distribution of the total scores of the subjects calculated from their responses to the various questions. Majority of the subjects (32.47%) had scores in the range

110-120 on the difficulty scale, i.e. they reported facing moderate amount of difficulty in conducting their thesis. Only 6.49% and 5.19% subjects faced very low and very high levels of difficulty respectively while conducting their thesis.

Table 2 displays responses of the subjects to the questions related to formulation of thesis proposal and review of literature. Nearly half the subjects (49.4%) mentioned facing difficulty in selection of thesis topic. However, they also mentioned that their PG guides provided adequate help in understanding the topic as well as in writing the protocol for ethics committee approval. Majority subjects reported that the quality of the compulsory Research Methodology workshop conducted for PG students was good (64.9%) but the timing was not appropriate (31.2%). Most of the times the workshop was conducted when the PG students were in the final year of their PG curriculum and had almost completed the data collection

and write up of their thesis. A large number of subjects reported that their guides insisted on referring to older literature and books available in the institutional library besides online databases (63.6%) for writing literature reviews and that they had easy access to the library for references (45.5%). Many subjects also reported (44.2%) that adequate relevant literature is difficult to find online alone and 45.5% subjects felt that in fact, data was easier to find on personally contacting concerned authorities related to the thesis (like OPD registers, old records form MR office etc.). More than half of the subjects reported that a lot of the data available online is either misleading or incorrect (58.4%) and they had good knowledge of computers before entering the PG course (59.7%). In terms of working out the methodology of their thesis, 61% subjects report difficulty in framing their study tool, 42.9% could not understand concepts of sample size estimation and sampling methods and 58.4% subjects reported taking help from statisticians for the same.

Table 1: Frequency distribution of total score of study subjects

Score Group	Frequency	Percentage (%)
80-90	5	6.49
90-100	14	18.18
100-110	23	29.87
110-120	25	32.47
120-130	6	7.79
>130	4	5.19
Total	77	100

Table 2: Frequency distribution of responses marked by study subjects related to formulation of thesis synopsis & review of literature

Question	Response Categories									
	Definitely Yes		Yes		Don't Know/ No Comment		No		Definitely No	
	No.	%	No.	%	No.	%	No.	%	No.	%
Difficulty in topic selection	27	35.1	38	49.4	0	0	12	15.6	0	0
Guidance in selection	15	19.5	36	46.8	5	6.5	21	27.3	0	0
Disagreement with guide for topic selection	0	0	5	6.5	6	7.8	59	76.6	7	9.1
Conceptual understanding of topic	5	6.5	47	61.0	3	3.9	20	26.0	2	2.6
Politics among supervisors	0	0	4	5.2	17	22.1	46	59.7	10	13.0
Appropriate Timing of RM workshop	10	13.0	22	28.6	15	19.5	24	31.2	6	7.8
Quality of RM workshop	13	16.9	50	64.9	11	14.3	3	3.9	0	0
Guide's insistence to use the library	5	6.5	49	63.6	8	10.4	14	18.2	1	1.3
Librarian's attitude supportive	1	1.3	32	41.6	25	32.5	16	20.8	3	3.9
Easy access to library	1	1.3	35	45.5	16	20.8	25	32.5	0	0
Adequate literature available	5	6.5	27	35.1	8	10.4	34	44.2	3	3.9
Availability of related records from concerned authorities	1	1.3	35	45.5	11	14.3	28	36.4	2	2.6
Self knowledge of online databases	2	2.6	46	59.7	2	2.6	24	31.2	3	3.9
Misleading data online	6	7.8	45	58.4	13	16.9	13	16.9	0	0
Difficulty in framing proforma/ study tool	1	1.3	47	61.0	8	10.4	21	27.3	0	0
Understanding of sampling	1	1.3	33	42.9	4	5.2	38	49.4	1	1.3
Statistician help taken	8	10.4	45	58.4	4	5.2	19	24.7	1	1.3

Table 3 displays responses of the subjects to the questions related to data collection and analysis of data. There was a mixed response from subjects in this category. In some aspects like addressing the problem of drop outs, handling routine duties and finding time for data collection the subjects reported facing difficulty (44.2% and 66.2% respectively). But majority i.e. 75.3% subjects report that their study subjects did not ask for any compensation for participating in the thesis and 61% subjects report that they could successfully complete data collection well in time despite all the difficulties they faced. Most of the subjects reported facing difficulties in the stage of data analysis. Where 54.5% subjects reported that they could not understand coding of data, 62.3% subjects did not understand how the data collected was to be analysed and presented altogether.

Table 4 displays responses of the subjects to the questions about personal abilities and other miscellaneous questions related to thesis writing. The responses in the personal abilities category were mostly positive and the subjects reported minimum difficulties in this phase of the thesis process.

More than half (57.1%) of the subjects reported having found adequate time to do the actual write-up of the thesis, 42.9% said they had good language skills and did not need help in framing scientific sentences and 40.3% claim they did not have to commit plagiarism. Majority (67.5%) subjects committed that they had no prior experience in research and 63.6% said that they did have interest in participating in research activities. A large no. of subjects mentioned (63.6%) that their personal work and regular duties had a very big impact on conducting thesis work and half of them i.e. 50.6% agreed that they faced a lot of difficulties in coping with other academic assignments along with the thesis. Also, nearly half (49.4%) the subjects said that their guides were available easily for discussion and guidance and they did not feel the need for an external authority to keep a check on how well the guides contribute or supervise their students thesis work. When asked to comment about their opinion about their guides' knowledge regarding research methods, equal number of subjects agreed and disagreed (36.4% each). This could be due to the fact that we included both clinical as well as para-clinical PG students in the study.

Table 3: Frequency distribution of responses marked by study subjects related to data collection & analysis

Question	Response Categories									
	Definitely Yes		Yes		Don't Know/ No Comment		No		Definitely No	
	No.	%	No.	%	No.	%	No.	%	No.	%
Problem of drop outs	2	2.6	34	44.2	7	9.1	34	44.2	0	0
Study Sample difficult to find	4	5.2	26	33.8	5	6.5	42	54.5	0	0
Respondents demanded money/ compensation	0	0	9	11.7	5	6.5	58	75.3	5	6.5
Nature of job had impact on thesis work	15	19.5	51	66.2	1	1.3	10	13.0	0	0
Completed data collection well in time	1	1.3	47	61.0	3	3.9	25	32.5	1	1.3
Had knowledge of excel	1	1.3	42	54.5	4	5.2	28	36.4	2	2.6
Understanding of data coding	0	0	28	36.4	5	6.5	42	54.5	2	2.6
Understanding of data analysis	0	0	17	22.1	5	6.5	48	62.3	7	9.1

Table 4: Frequency distribution of responses marked by study subjects related to personal & other factors

Question	Response Categories									
	Definitely Yes		Yes		Don't Know/ No Comment		No		Definitely No	
	No.	%	No.	%	No.	%	No.	%	No.	%
Adequate time for doing write-up	5	6.5	44	57.1	6	7.8	22	28.6	0	0
Good language skills	3	3.9	33	42.9	19	24.7	22	28.6	0	0
Conducted plagiarism	4	5.2	21	27.3	19	24.7	31	40.3	2	2.6
Good guidelines for thesis writing available	2	2.6	34	44.2	9	11.7	28	36.4	4	5.2
Had knowledge of computers	6	7.8	34	44.2	3	3.9	31	40.3	3	3.9
Had knowledge of research	0	0	10	13.0	7	9.1	52	67.5	8	10.4
Had interest in research	6	7.8	49	63.6	9	11.7	13	16.9	0	0
Personal responsibilities affected thesis	4	5.2	49	63.6	10	13.0	13	16.9	1	1.3
Difficulty in coping with other academic assignments	6	7.8	39	50.6	17	22.1	15	19.5	0	0
Guide was easily available	20	26.0	38	49.4	3	3.9	12	15.6	4	5.2
Lack of basic knowledge in guides	4	5.2	28	36.4	6	7.8	28	36.4	11	14.3
Lack of evaluation of guides' contribution/ supervision	3	3.9	16	20.8	7	9.1	38	49.4	13	16.9

Discussion

The present study found that majority of the PG students faced moderate level of difficulty in conducting their thesis. It has often been observed that Thesis supervisors/guides lack basic knowledge of research methodology. They in the course of research misguide/mislead researchers because they themselves are not much trained. It cannot be argued that the quality of the research work conducted is majorly dependant on the knowledge and skill of the supervisor/guide. Unfortunately, in most of the cases both the supervisor and researcher possess same level of understanding the research techniques [1,7-11]. However, the present study found that even though the subjects faced difficulty in selecting a thesis topic initially, their guides provided them with adequate guidance and help in selecting a topic and understanding it. Also, majority subjects did not express any disagreement with their guides or enforcement by guides in topic selection. These findings are in accordance with the findings of studies conducted by Ghadirian et al (2014) [7].

Another important finding of the present study is that most postgraduate medical students are unfamiliar with basics of conducting research, literature review and simple statistical analyses. This reinforces the importance of the students attending the compulsory research methodology workshop conducted as per MCI requirements. Studies conducted by Giri et al. (2014) [9] and Taskeen et al. (2014) [8] also found that appropriate literature is not available online or there is no access to the appropriate related literature and young researchers are unaware of even basics of research like sampling methods and sample size estimation. Very similar to findings by Taskeen et al. (2014) [8] the present study finds that young researchers agree that even though the amount of data available on the internet is abundant, it is without any authentic referencing. Taskeen et al. (2014) [8] mentioned that researchers simply take data from internet considering it as a reliable source of data resulting in the research losing its authenticity. Present study found that the timing of research methodology workshop was not appropriate. There should be an effort by the concerned authorities to conduct the same during the first crucial term of the PG course before the commenced attempting research of any form.

The present study also finds that as the research study starts, PG students usually get entangled between their thesis related work and other

routine activities similar to findings of other studies [1,7,9,10]. Also, many a times after the PG has conducted the whole research, his/her research work is finally rejected by the guide/supervisor because it was not up to their expected standard. Hence PGs seek help from other professional people who on payment analyse and interpret their data [7, 11].

The present study found that overall there was a positive attitude among the PG students towards research altogether and they were willing to spend time improving their knowledge of the same. However, the study also found that the students felt that a major hurdle towards conducting their thesis was their heavy work schedule and vast curriculum; which made it difficult for them to allot adequate time for research. All these findings are in accordance to the findings by Giri et al. (2014) [9] and Ngozi et al. (2013) [11] who also found that majority students believed that patient outcome improves with continued medical research and that separate time needs to be allotted for their thesis projects.

As public health gains more and more importance in health care of the community with passing time, well thought of and executed research has now gained a monumental position in the ever-expanding health care delivery system of not only our country but world over. It has been proven time and again that research is not an activity to be ignored when compared to clinical medicine but in fact is the key to the future of medicine altogether. It is common knowledge that the medical PG course is one of the most demanding in the country, both physically and mentally.

One effective way of developing a positive attitude towards research is encouraging young graduates and aspiring postgraduate students of various fields to conduct basic level research at institutional or local community level. Offering thesis by the students is one of the major academic activities which is not only the first systematic step for familiarizing students with research, but also it is used as a criterion for evaluating individual competence of the student in scientific research and obtaining related skills [4].

Conclusion

Poor level of understanding of basic level research is a major hurdle in the advancement of medical sciences in the country, making it imperative that the difficulties faced by these PG

students in conducting their thesis be addressed with utmost seriousness.

Key message: Poor level of understanding of basic level research at PG level is a major hurdle in the advancement of medical sciences in the country, making it imperative that the difficulties faced by these PG students in conducting their thesis be addressed with utmost seriousness

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