ORIGINAL ARTICLE

COMMON ERRORS IN PROPOSAL WRITING: A CROSS SECTIONAL STUDY AMONG POST GRADUATE MEDICAL TRAINEES AT PESHAWAR

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Background: Proposal writing before starting research study is the key component of the any research project and quality of the research depends upon how the proposal was designed and planned. Objectives of this study was to determine the frequency of most common errors in proposal writing by post graduate medical residents of College of physician and surgery of Pakistan (CPSP) at Peshawar. **Methods:** A cross sectional study was carried at Khyber College of Dentistry (KCD) Peshawar from August 2017 to May 2018.We conducted the reviewed of Form "S" of 43 proposals through convenience sampling. Each Form S consists of 34 questions. All the questions were dichotomous which were presented in the form of frequency and percentages. Data were analysed by SPSS-22. **Result:** Out of 43 proposal, the result shows that 53.5% (n=23) of the candidates have not explained the introduction in their own words while suitable statistical tests were not mentioned in more than half of the 67.4% (n=29) proposal. References were not written in Vancouver style 51.2% (n=22) as well as hypothesis was not applicable in 62.8% (n=27) of the studies. However only 39.5% (n=60.5) of the trainees phrased the hypothesis properly. **Conclusion:** Majority of the candidates were unable to write the proposal according to the recommended guidelines. Application of the appropriate statistical measures was found as a challenge for the candidates. Similarly, objectives were not clearly defined in terms of SMART concept.

Keywords: Proposal Medical Writing; Postgraduate medical Trainee; CPSP; Medical education; Medical Errors

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INTRODUCTION

Proposal or Protocol writing is the essence of the planned project to be submitted by the researches for approval before starting the study. It gives a panoramic view of the research for quick analysis by the reviewers.[1] Proposal writing and submission to College of Physicians and Surgeons Pakistan (CPSP) before starting dissertation is one of the mandatory mile stones for post graduate trainee medical officers. Without prior approval of the research proposal by CPSP, any post graduate trainee or is allowed to start data collection for dissertation. The process of submission and getting it approved is explained to the candidates in research workshops arranged by regional centers of the CPSP throughout Pakistan. However designing of the research proposal is one of the most challenging job for the young researchers and post graduate medical trainees.[2] Most of the candidates get stuck in writing research proposal while it is mandatory to be submitted and approved by CPSP.[3] The candidates submit their proposal for approval after a review by their supervisors but still CPSP returns the proposal with the reservations. Now again, the candidate has to review the proposal and to answer the reservations by the CPSP. This process takes long time and is also very stressful for the candidates to pay enough time to the proposal writing and reviewing because of their routine overburdened duties in the hospitals. The journey of writing a research proposal begins with an idea or concept. If the candidates have a unique idea, the first step is to sharpen their medical writing skills.[4] The College of Physicians and Surgeons Pakistan (CPSP) is one of the major institutions in Pakistan which support postgraduate medical residents in their dissertation writing and research studies.[5] The CPSP, over the years has taken various measures to improve the quality of its training, research and assessment of the candidates to meet international standards. The Department of Medical Education plays a key role by supporting faculty members in the development of curricula for upcoming medical / dental specialties, reviewing and revising the previous ones and developing new tools for monitoring and assessment.[6]

To make it easy for the medical trainee to write proposal and get approved by CPSP and PGMI, it is worth to identify common errors made by post graduate students. The identification of common errors in proposal will make the candidates to be focused on these errors while designing their proposal. It will also help them to get approval from CPSP with in the stipulated time by avoidance of reservations. No such of kind of study has been done. This will be the first kind to look this issue. The aim of our study is to determine the frequency of common errors in proposal writing by post graduate medical residents of College of physician and surgery of Pakistan (CPSP) at Peshawar.

MATERIAL AND METHODS

A cross sectional study was carried at Khyber College of Dentistry (KCD) Peshawar from August 2017 to May 2018.We conducted the reviewed of Form "S" of all 43 proposals by using convenient sampling technique. Each Form S consist of mainly 34 questions. Form 'S' is a checklist used by Research & Evaluation Unit of CPSP to communicate their observation to the candidates regarding their proposal. The Form 'S' is a check list of three major portion like epidemiological review, statistical review & bibliography review mainly. These forms were collected from the Post graduate medical trainees of KCD and other adjacent institutions of Peshawar. All the questions were dichotomous which were presented in the form of frequency and percentages. Data were analysed by SPSS Version 22. Before starting the study, approval was taken from Research Ethical Committee of the institution (328-AD/PG/KCD).

RESULTS

Out of 43 proposal, the main finding shows 53.5% (n=23) of the candidates have not explained the introduction in their own words. Inappropriate statistical measurements were applied in majority of the 81.4% (n=35) proposal. Similarly, suitable statistical tests were not mentioned in 67.4% (n=29) proposal. References were not written in Vancouver style 51.2% (n=22) as well as hypothesis was not applicable in 62.8% (n=27) of the studies. However only 39.5% (n=60) of the trainees phrased the hypothesis properly. Furthermore, Rationale of the study was not clarified in 55.8% (n=24), although the objective was written in clear measurable terms by 67.4% (n=29). Sample size was not calculated appropriately by 69.8% (n=30) candidates. In 62.8% (n=37) biases were not controlled properly while no mechanism for adjustment of confounders were found in 55.8%. (n=24). (Table-1)

DISCUSSION

The aim of this study was to identify common errors made by the residents of CPSP at Peshawar through collecting the Form 'S' of Research Evaluation Unit of CPSP which were attempted by the assessor of CPSP. Our result shows that majority of the residents were unable to write the introduction in their own words while they face difficulties in the application of appropriate statistical measures. Sample size was not calculated appropriately. Similarly biases and confounders were not appropriately addressed.

Rewriting and paraphrasing source texts in own words is always been a great challenge for the researchers. A study conducted by Shi, L. on 2012 illustrates that students have difficulties in understanding how to paraphrase in order to avoid plagiarism.[7] This result is consistent to our study as introduction was not written in more than half of the trainees in their own words. This problem may be due to the reason that most of the trainees are writing proposal for the first time and English is not their mother tongue, so they directly do copy-past and don't convert it to own words.

Practicing physicians and residents has no formal education in epidemiology and biostatistics and had a weak understanding of common statistical tests. Our study shows that the statistics were not appropriate according to variables 81.4% (n=35). A cross-sectional survey of internal medicine residents found that out of 367 residents, the overall correct mean percentage on statistical knowledge and interpretation of results was 41.4% while the 59% were unable to give right answer.[8] This shows that almost a very high numbers of Post graduates students have difficulties in statistical analysis and interpretation.

In our study majority of residents fail to write their objectives to achieve the SMART criteria. In writing effective objectives, action verbs should be describe.[9] The probable explanation to this problem is, there is no effective ways to focus and achieve the objectives of the research question in a manner so to establish a strong coordination between supervisor and residents to answer the question and decrease the gaps in a step wise manner. The strength of this study was that it was its first kinds of study to address for the gaps in the literature, locally and nationally in quantitative terms and the use of validated questioner by pilot study. As a statistical package SPSS version 22 was used. Proper ethical approval was taken. While the Limitation were that we used convenience sampling because we don't have excess to all of the residents. Sample size was low. We have not analysed the data according to various specialties.

Table-1: Frequency distribution 34 Questions of Form S…(n=43)

No	Variables	Category	n	(%)	No	Variable	Category		(%)
1.	Title relevant to Specialty	Yes	30	69.8	19	Statistics appropriate according to variables	Yes	8	18.6
		No	13	30.2			No	35	81.4
2.	Title do not contain abbreviation	Yes	31	72.1	20	Level of significances if required given	Yes	32	74.4
		No	12	27.9			No	11	25.6
3.	Title was reflecting the objective	Yes	27	62.8	21	Appropriate statistical test mentioned	Yes	14	32.6
		No	16	37.2			No	29	67.4
4.	Research topic adequately introduced	Yes	28	65.1	22	Minimum of Five references Quoted	Yes	22	51.2
		No	15	34.9			No	21	48.8
5.	Background explained with relevant reference	Yes	27	62.8	23	References in Vancouver style	Yes	21	48.8
		No	16	37.2			No	22	51.2
6.	Rationale of the study clarified	Yes	19	44.2	24	Recent references mentioned (last five years)	Yes	33	76.7
		No	24	55.8			No	10	23.3
7.	Introduction written in own words	Yes	20	46.5	25	All references can be authenticated	Yes	39	90.7
		No	23	53.5			No	4	9.3
8.	Objective written in clear measurable terms	Yes	29	67.4	26	inclusion criteria appropriate	Yes	34	79.1
		No	14	32.6			No	9	20.9
9.	Appropriate operational definition stated	Yes	23	53.5	27	exclusion	Yes	30	69.8
		No	20	46.5			No	13	30.2
10.	Hypothesis applicable to the study	Yes	16	37.2	28	Study design suitable for objective	Yes	32	74.4
		No	27	62.8			No	11	25.6
11.	Hypothesis properly phrased	Yes	17	39.5	29	Sampling technique correct	Yes	35	81.4
		No	26	60.5			No	8	18.6
12.	Study setting mentioned	Yes	35	81.4	30	Sources of data clearly identified	Yes	40	93.0
		No	8	18.6			No	3	7.0
13.	Sample size appropriate calculated	Yes	13	30.2	31	Diagnostic criteria of cases mentioned	Yes	28	65.1
		No	30	69.8			No	15	34.9
14.	Duration of study not less than 06 months	Yes	35	81.4	32	Bias if any controlled	Yes	16	37.2
		No	8	18.6			No	27	62.8
15.	Ethical issue if any controlled	Yes	35	81.4	33	Descriptive statistics detailed given	Yes	27	62.8
		No	8	18.6			No	16	37.2
16.	Informed consent taken	Yes	39	90.7	34	confounding variable controlled	Yes	19	44.2
		No	4	9.3			No	24	55.8
17.	Steps of data collection in proper sequence	Yes	35	81.4					
		No	8	18.6					
18.	Performa appropriate	Yes	32	74.4					
		No	11	25.6					

CONCLUSION

In conclusion most of the residents are unable to write the introduction in their own words. Also, they have difficulties to apply appropriate statistical tests. Similarly, objectives were not clearly defined in terms of SMART concept as well. This study also documents that majority of residents have issue in sample size calculation which was not appropriately calculated. In the same way, biases and confounders were not addressed appropriately.

Recommendation: Qualitative study should be carried out to know the in-depth knowledge and the errors made by the trainees. Need to review the curriculum to increase the credit hours to strengthen the capacities of residents in health research. Also, to incorporate the Epidemiology and Biostatistics subject as essential instead of only 03 days workshop.

Conflict of interest: Nil

AUTHORS' CONTRIBUTION

GR: Idea and proof reading. FA: Design, analysis & interpretation. KU: Introduction and discussion part. AK: Data analysis, coding. ZUH: Help in minimising plagiarism. SH & IU: Data collection.

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