

Original Article

Features of Medical Student's Theses at Kermanshah University of Medical Sciences during a Five-Year Period

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Abstract

Introduction: Most of the studies conducted in Iranian medical schools are carried out as student's theses on which a lot of time and energy is spent. The purpose of the present study was to determine the characteristics of medical student's theses at Kermanshah University of Medical Sciences during a five year period (2004-2008).

Methods: In this descriptive, cross-sectional study a checklist consisting of 21 questions was designed. The data were gathered from all medical student's theses during 2004-2008 (n=189) using a consensus method of data collection. Data were analyzed by descriptive statistics using SPSS software.

Results: In terms of type, most of the theses were descriptive cross-sectional (33.3%), descriptive (29.1%), and descriptive-analytical (18.5%). The highest number of theses belonged to clinical psychiatry (18.5%) and obstetrics and gynecology (17.5%) departments. Other departments, especially basic science departments had the lowest number of theses because clinical teachers constituted 86.2% of the supervisors. The duration of the thesis completion was between 2 and 24 months. Using hospital records and inpatients files were the methods mostly used for data collection and as data sources. Furthermore, we could not find an appropriate assessment and scoring system of theses in place.

Conclusion: Medical student's theses lacked appropriate quality therefore this issue should be seriously taken into consideration by educational managers.

Keywords: Medical students, Thesis, Medical sciences, Research

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Introduction

Research has always been considered a powerful tool for exerting change. Developing and generating knowledge via research is one of the most important responsibilities of medical universities. Most of the research projects carried out in universities revolves around student theses. Student articles

originated from these are the most significant research products in each country (1).

Medical thesis is equivalent to 6 credit points that, in addition to learning research methodology, should proceed to solve research questions (2). Although there has been some doubt about the value of student theses in some studies, it is very important for the educational system to raise student's innovation and creativity as a

research tool to move toward addressing society's medical and health problems (3).

Although theses are considered to be an important task to accomplish, some of the students find it scary and worrisome, others, however, do not take it seriously (4). On the other hand, another problem is, prolonged proposal registration and lack of time in internship and clerkship phases make students to not take time-consuming types of research, such as experimental, case-control, and prospective studies (5, 6).

There seems to be some noteworthy points about executive guidelines on medical student's theses such as thesis distribution among faculty members as supervisors, final assessment and scoring of the thesis, interval between thesis registration and defense session (2), which are occasionally overlooked. Investigation of the medical student's theses characteristics can contribute to a deeper understanding of the quality of the theses and to identifying their strength and weakness. The findings could be applied in management and planning.

In Golestan University of Medical Sciences (UMS), an investigation of medical student's theses showed that of 257 theses were as follows: descriptive cross-sectional (49.4%), descriptive (35%), experimental (8.6%), and case-control (6.2%) (1). In another study carried out in Rafsanjan UMS, the highest number of the theses was descriptive (71.1%) and the lowest number belonged to cohort studies (1.5%) (3). In Isfahan UMS, only 3.96% of the internship theses was compatible with the supervisor's specialty (7).

In Arak (5), Qazvin (6), Kerman (8) and Shahed UMS (9), the characteristics of the medical student's theses were analyzed. Also, in a study carried out in Kermanshah UMS on 218 theses during 1997-2005, the mean score of all indicators under analysis was 8.77 ± 3.11 out of 20 and their quality was moderate. The analyzed theses were evaluated as average, weak, and poor in terms of many indicators (10).

Based on the findings of above studies, an appropriate method was applied to address the weaknesses of medical theses. Several years after the recognition of the necessity of identification of quantitative and qualitative characteristics of the theses, the present study was conducted to investigate the features of the medical student's theses at Kermanshah UMS during a five-year period (2004-2008).

Methods

In this cross-sectional study, based on the studies carried out in other universities, a checklist was designed consisting of 21 questions, including type of research, subject matter, supervisor, advisor, distribution of the theses in clinical and basic science departments, distribution of scores, compatibility of thesis subject matter with supervisor's specialty, the number of pages of the thesis, interval between registration and defense session. The reliability of the checklist was confirmed by the faculty members and researchers. All medical theses from 2004 to 2008 (n=189) present in library were investigated. The checklist for each thesis was completed. Data were analyzed by descriptive statistics using SPSS software (version 16).

Results

The highest percentage of frequency of 189 theses investigated in terms of type of research belonged to cross-sectional (33.2%), descriptive (29.1%), and descriptive-analytical (18.5%) (Table 1). Also in terms of subject, the performed subjects included 65 treatment issues (34.4%), 56 diagnostic cases (29.6%), 31 laboratory cases (16.5%), 22 statistics and epidemiology cases (11.6%), and 15 educational cases (7.9%).

Table 1: Distribution of medical theses at Kermanshah University of Medical Sciences according to type of research during 2004-2008

Type of research	Number (%)
Cross-sectional	63 (33.2)
Descriptive	55 (29.1)
Descriptive-analytical	35 (18.5)
Case-control	10 (5.3)
Cohort	2 (1.1)
Retrospective analytical	2 (1.1)
Experimental	2 (1.1)
Other	20 (10.6)
Total	189 (100)

34.9% of the theses subjects were done on inpatients in hospitals and 25.4% was on hospital file records. The majority of these's subjects were diagnostic-therapeutic and the minority was educational. Moreover, 98.4% of

the subject matters were compatible with the supervisor's specialty. Most of the theses were completed by one student (73.5%) and the distribution of theses completed by two students was 26% and those completed by three students was 0.5%. One of

the crucial points revealed by this study was the interval between thesis registration and defense session which is presented in table 2.

Table 2: Distribution of interval between subject registration and defense session at Kermanshah University of Medical Sciences in 2004-2008

Duration of thesis completion	Less than 2 months	2-6 months	6-12 months	12-24 months	Over 24 months	Non-specified	Total
Number	57	35	39	42	5	11	189
Percentage	30.2	18.6	20.6	22.2	2.6	5.8	100

Most of these theses had statistical advisors. However, regardless the presence of statistical advisor, only 34.4% had non-statistical advisor. Theses distribution among departments was not similar. Interestingly, theses distribution among faculty members in each department did not have similar trend (Table 3).

Regarding assessment and scoring, 50% of the theses acquired the score of "very good" and 48.7% "excellent". The length of the theses did not follow a logical distribution, so that 61.3% had 30-60 pages, 18% had 60-90 pages, 13.8% had less than 30 pages and the rest more than 90 pages.

Table 3: Distribution of medical student's theses at Kermanshah University of Medical Sciences according to their supervisor in various departments during 2004-2009

Departments	Number (%)
Psychology	35 (18.5)
Obstetrics and gynecology	33 (17.5)
Infection	16 (8.5)
Internal	15 (7.9)
Urology	15 (7.9)
Pediatrics	14 (7.4)
Ophthalmology	8 (4.2)
Social medicine	7 (3.7)
Basic sciences (anatomy, physiology, parasitology, biochemistry)	24 (12.7)
Other clinical departments	22 (11.6)
Total	189 (100)

Discussion

In this study, the highest percentage of medical theses, in terms of type of research, belonged to cross-sectional (33.2%), descriptive (29.1%), and descriptive-analytical (18.5%) studies, and the lowest percentage was for case-control, cohort, and experimental studies. Whereas in Golestan UMS (1), the theses frequency were: descriptive-analytical-cross-sectional (49.4%), descriptive (35%), experimental (8.6%), and case-control (6.2%) studies. The results of the present study are similar to those of Kolahi (4), Davami (5), and Asefzadeh (6).

Further, in Rafsanjan UMS, the highest number of theses was reported for descriptive (71.1%) and the lowest number belonged to cohort (1.5%) studies (3) which are not in line with the results of the our study. It seems that medical students in most medical universities tend not to conduct difficult and time-consuming experimental and interventional research. Lack of time during internship may be one of the reasons for this trend. Late selection and registration of thesis and high cost and difficulty of experimental and case-control studies as well as lack of facilities play a role. It should point out that increasing the number of experimental, case-control, and interventional studies can improve the quality of the theses and increase medical student's creativity and affect faster publication of the findings of research.

In the present study, about 98.4% of the subjects of the theses were compatible with the supervisor's specialty which was in line with the findings of Borghai (80.9%) (1), nevertheless this was in contrast with another study in which 3.96% of internship theses were not compatible with the supervisor's specialty (7).

An important aspect of this study was considering the duration between thesis registration and defense session. According to general medicine educational regulations, the student must have registered his/her thesis title prior to pre-internship examination. The analysis revealed that the duration between registration and defense session in approximately 69% of the students was less than a year which is indicative of non-compliance with relevant regulations.

In Shahed University, 19.1% of the theses had been registered during clerkship and the rest in internship period and the theses had taken a year to complete (9) that indicates a better trend than the present study. Investigating the reasons behind non-compliance with one of the most important regulations in medical education can be helpful for qualitative and quantitative promotion of the theses.

In the present study, 65.1% of the theses had statistical advisor and only 34.4% had non-statistical advisor which was similar to the results reported in Golestan UMS (76.9%) (1), and different from those found in Shahed University (11.7%) (9).

Further, in present study, the number of the theses for clinical departments was higher, including psychiatry (18.5%) and gynecology (17.5%) departments. The lowest number, however, belonged to basic science departments, totally comprising 12.7% of all the theses. Interestingly, the theses were not distributed equally between supervisors in each department which is not in line with official instructions and is in contrast with the results found in other universities.

Also in Shahed University, 75.5% of the theses were supervised by clinical faculty members and 24.5% by basic science faculty members. The frequency of the theses in internal, gynecology, and surgery departments were 26.5%, 18%, and 14.9%, respectively (9) which is partly similar to present study at Kermanshah UMS. However in Golestan UMS (1), internal, dermatology, and radiology departments had the highest number of theses (19.5% each); gynecology (14.3%) and pediatrics (11.6%) were in the second and third place. In Kermanshah UMS, 15.5%, 15.4%, 13.6% and 10.8% of the theses were distributed to dermatology, social medicine, epidemiology and psychiatry departments, respectively (10). In Ogunyemi's study, the highest number of theses belonged to internal, gynecology and pediatrics departments (11).

The higher number of the theses supervised by clinical faculty members was compatible with their relatively high number in all medical universities in Iran, but the intended ratio was not observed, accordingly. Long

duration of internal, pediatrics and gynecology courses in internship and clerkship periods and scientific variation of subject in some of them (e.g.; internal department), and more faculty members in those departments are the points to be taken into account. However, in the case of one-month course with few faculty members and scientific variation, the presence of enthusiastic faculty members, various research subjects and proper research facilities are the key points. However, for the theses not presented to scientific congress or not published but acquire "very good" or "excellent" scores, the reason may be because of simple administration and process in the given department and/or by given supervisor.

The trivial share of basic science departments at Kermanshah University of Medical Sciences in presenting thesis can be interpreted in different ways such as far distance of faculty from some hospitals, regular presence of interns in hospital, lack of time for doing laboratory and animal research, and strictness of some basic sciences faculty members. It seems that more appropriate interactions between basic sciences and clinical departments, which is currently an educational concern, can be helpful in benefiting from the capabilities of basic sciences faculty members. Subject and content analysis of clinical theses indicated that 10.6% of them had the potential of being carried out jointly by both basic sciences and clinical departments.

In the present study, 50% of the theses obtained "very good" score and 48.7% "excellent" score, which seems to be inappropriate. It is probable that ministerial instructions for scoring have not been applied. In the study performed in Golestan University of Medical Sciences, the range of theses scores was between 16.7 and 19.5 and the mean of total scores was 18.9 during 2004-2009 (1) which is partly in line with the present study. It seems, however, that the assessment and scoring system should be reviewed.

The last point concerns the number of pages of the thesis. Unfortunately, it seems that there is not a rule-based system for the minimum and maximum number of pages for the theses, and even for cases such as font, number of lines in each page, diction, chaptering, and binding. It is evident that passing administrative rules to unify the structure and general form of the theses and thorough supervision on them can enhance their quality and attractiveness.

It seems that most of the present problems on the quality of the theses, how they are registered and administrative procedures can be solved by better management, more precise and scientific supervision,

and spending more time. These could improve the quality of the theses as a source of knowledge production. An important issue that should be taken into account is necessity of presenting the thesis before internship and even if possible in physiopathology phase. This would provide the student with more time and consequently better thesis. Also, more control on existing regulations is recommended in order for the proper and logical distribution of the theses among faculty members in various departments

Conclusion

Medical theses do not possess desirable quality in terms of many criteria such as distribution among departments and faculty members, and should be taken into consideration more seriously. Thus, a practical and administrative monitoring system is required for the selection of the subject, theses distribution among departments, approval of proposals, and applicability of the theses, administrative steps, typing and binding, also assessment and scoring.

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