



Research Article

The Analysis of Criteria for Selection of Thesis Subject and Supervisor

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Abstract

Introduction: Determining medical students' emergency residents' attitudes towards the topic selection and Choosing the supervisor can be helpful in assisting programmers to better reform and promote the level of research in the field of health in the country. The goal of this study is investigation of criteria which emergency residents of shahid Beheshti University of medical sciences select for choosing the thesis topic and supervisor.

Materials and Methods: In this descriptive-analytical study, 75 residents with the almost similar pattern of numbers in 3 years residency stages were surveyed. Data gathering tool was a questionnaire. Subsequently, the Data were analyzed by using Chi-square test or Fisher's exact test accompanied by Kolmogorov-Smirnov test with SPSS software.

Findings: The most prevalent criterion for choosing the thesis topic and supervisor of students was "the potential of article extract" and "supervisor comportment. However, it should be noted that the only factor which was meaningfully relevant to supervisor selection was the periods (the amounts of months) passed by residents.

Conclusion: Majority of emergency residents want to prepare a dissertation which could be extractable as an article. Moreover the ideal goal of doing these kinds of researches is to find a solution for our recent deficits in research. Financial and spiritual supports and making basic changes in planning of medical education, military service and board exam could have positive influence to attitudes of emergency residents and improve the quality of their dissertations.

Keywords

Topic; Dissertation; Supervisor; Emergency residents

Introduction

The advancement and development of countries is based on knowledge and science in today world. Research and knowledge and technology production are assumed as the paramount elements of economic, social, cultural, industrial, and political growth and development of the country. Achievement in these fields may be realized if special attention is paid to subject of research and technology in purposeful and macro planning of the country [1-3]. No country has been so far seen throughout the world that has achieved economic and industrial development without scientific

comprehensive development. Thus, it necessitates the research and technology to be prioritized as a vital issue and impetus for sustainable development and advancement and technology and acquiring welfare and real independence of the society.

However, this is not hidden to anyone to consider the impact of research and study in developing knowledge in all scientific and academic fields, it is a matter of fact that such a relation may mainly play up in the field of health further. In other words, conducting research in healthcare field through producing new knowledge via leading to better technology and providing event- based decision making not only improve lifestyle according to enhancement of health, but also it is deemed as a requisite for social and economic development [4-6].

Ministry of Health and Medical Sciences and Treatment is the paramount sponsor for knowledge production in healthcare field by aiming at diagnostic, medical, and administrative decision- making [7]. Alternately, implementation of medical research and studies is assumed as the foremost mission for faculties of medical sciences as preparatory agent for medical intervening measures [8].

The dissertations are considered as one of the foremost research activities and information sources in the universities of the country, which MA and PhD students are tasked with codification of theses. In fact, the thesis is the first serious and disciplined effort of student during certain period of study [9]. The theses are considered as valuable information sources, which may play important role in body of knowledge due to their certain nature and features and a lot of governmental financial facilities and major part of force and time of academic faculty members is consumed for them every year [10,11]. The theses in advanced education are deemed important from several aspects. Firstly, thesis is in fact the sign of training knowledge, skill, and research methodology for students at these degrees [12]. Thus, it is necessary to train method of research within appropriate and uniform framework to present this educational credit. On the other hand, any thesis is assumed as a model for other students and considered as reference and for acquiring information about the costmary structure of the university regarding it. Therefore, the necessity for existing theses with appropriate structure is felt for guidance in this regard [13-17].

Dissertations of professional doctorate in universities of medical sciences are tasked with knowledge creation and developing the foundations for knowledge of medicine. What it deemed as noticeable in realization of scientific goals in professional doctorate theses is selection of appropriate subject, reasons for selection, and role of supervisor in this selection [18]. Although, selection of subject may act as representation of scientific and specialized requirements of the related institutions as well as transformation of nature in research models in medical field, some factors such as individual inclinations, expertise, time limit, and proportion of subject with the given supervisor etc have been considered as the reasons for this choice [19].

The present thesis is mainly aimed at giving answers to the following questions:

What kinds of attitudes are taken by students in professional

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doctorate course of emergency medicine residency in Shahid Beheshti University of medical sciences and medical services toward selection of subject for dissertation? To what extent have some reasons including interest in subject, simplicity of subject, and scientific use of subject results etc. been effective in selection of theses for students? How is the students' approach toward choosing supervisor for their dissertations?

Methodology

This study is classified in the group of applied research in terms of type of research and also it is of descriptive survey based on kind of data collection and analysis.

Statistical population and sample size

The statistical population of this investigation includes emergency medicine residents from Shahid Beheshti University of medical sciences and health services, which were totally about 75 participants.

Method of data collection

There are several techniques for data collection of which one can refer to observation techniques, interview and by questionnaire. The documentations of the present study have been gathered from librarian sources, magazines, journals, and via internet and the collected contents are analyzed and interpreted. The field data in this investigation are acquired by reliance on questionnaire.

Data collection tools

The questionnaire has been employed as the main tool for data collection in this survey. The questionnaire is composed of two parts where in first part the background features are discussed and the second part is also devoted to reasons for selection of dissertation subject and supervisor. The relevant questions to reasons for selection of thesis subject and supervisor are designed in Likert 5-scale spectrum. According to this scale, the attitudes of individuals are measured toward social facts and that is a scale based on which the type of measurement in ordinal scale with number of questions and give answers through a five- choice continuum in which the responses are selected ranging from completely agreed to completely disagreed. The ordinal nature is the certain value for this type of spectrum and it lacks ambiguity regarding the answers so that the respondents are not limited to giving only one affirmative or negative answer to a question but they are able to give further answer and comment and this may improve the accuracy of measurement and the other point about this spectrum is in that the respondents shall give comment about all of questions not only those questions, which are agreed by them.

Method of data collection

After design of research questionnaire, the given inventory was distributed among the emergency medicine residents from Imam Hossein, Tajrish Martyrs, Mofid, and Loghman Hospitals to be completed. After data collection, the questionnaires were encoded these data were analyzed after entering in SPSS software.

Research analysis method

In order to analyze data and information, one-dimensional frequency distribution tables and agreed tables and descriptive statistics were employed and also Cronbach Q- test was used to determine the significance of ranking the reasons to select the subject

of thesis and supervisor within the framework of statistical descriptive method.

Validity and reliability of measurement tool

The validity of research measurement tool is based on face validity. In better words, the research measurement tool has been designed after exploiting from the comments of experts and professors. Internal consistency test of questions (Cronbach alpha test) has been adapted to examine reliability of study. The results of Cronbach alpha test for exploring the reliability of two variables including choosing of supervisor and selection of thesis subject signify the high reliability in this research. In other words, regarding variable of criteria for election of supervisor and selection of thesis subject the Cronbach alpha coefficients are 0.8 and 0.76 respectively, which indicate high reliability for measurement tool.

In order to investigate the students' attitude toward election of supervisor, 15 questions were asked in this study. One positive point was allocated to any proper answer to evaluate the level of respondents' attitude but the false response had no score (zero). Therefore, the score of students' attitude regarding election of supervisor might vary from zero to 15. Whereas distribution of score followed the normal function in the studied population ($p=0.1$ as result of Kolmogorov-Smirnov test) thus the parametric analyses were conducted for comparisons.

Also 10 questions were asked to examine criteria for selection of subject of theses and since this score followed the normal distribution in the studied population ($p=0.16$ as result of Kolmogorov- Smirnov test) therefore parametric analyses were done for these comparisons.

Hence, in order to evaluate the relationship among students' view about election of supervisor and criteria to select subject of dissertation with gender and marital status, the independent t-test was utilized in the current study. The correlation test was used as well to determine the relationship between the quantitative factors with score of students' attitude regarding election of supervisor and selection of theses.

Results

Introduction

The chapter is devoted to exploring research findings. The present chapter is divided into two basic sections. In first section, the research background variables including age, gender, marital status, and attributes of target population as well as main research variables (the criteria for selection of thesis subject and choosing supervisor) are examined. In the second section, the personal and educational differences are inquired in criteria for selection of thesis subject and election of supervisor.

Image of respondents

Table 1 presents frequency distribution of background characteristics (age, gender, and marital status) in the studied sample. The results of following table signify that the respondents under age 35 have constituted the highest share of population in the studied sample size (72%). About 51.9% of sample size is males and over 48.1% of them are also females. Similarly, the review of variable of marital status shows that most of the studied emergency medicine residents (81.6%) were married.

Table 1: Frequency distribution of background attributes in the studied units.

Background variables	Quantity	Percentage
• Age group (year)		
Younger than 30	21	28
20-34 years	33	44
35-39 years	10	13.3
> 40	11	14.7
Total	75	100
• Gender		
Male	40	51.9
Female	37	48.1
Total	77	100
• Marital status		
Married	62	81.6
Single	14	18.4
Total	76	100

Table 2: Frequency distribution of occupational characteristics of respondents.

Occupational variables	Quantity	Percentage
• Working background		
Less than 10 years	56	80
10-20 years	12	17.1
Higher than 20 years	2	2.9
Total	100	100
• GPA in general practice career		
14-16	24	33.3
16-18	47	65.3
18-20	1	1.4
Total	72	100
• Number of scientific0 research essays		
Lack of essay	55	73.3
1 essay	12	16
2-3 essays	8	10.7
Total	75	100
• Number of scientific- developmental essays		
Lack of essay	73	97.3
1 essay	2	2.7
Total	75	100
• Number of essays for conference		
Lack of essay	64	85.3
1 essay	9	12
2 essays and more	2	2.7
Total	75	100
• The period passed from residency career		
1-10 months	31	42.5
10-20 months	24	32.9
20-30 months	18	24.7
Total	73	100

Occupational- scientific attributes of the studied units

Table 2 presents occupational and professional characteristics of respondents within the framework of working background, GPA in general practice course, number of scientific essays, and the period of time passed during residency career.

As it seen in Table 2, most of members of the studied sample (80%) had working background less than 10 months. The variable of GPA (educational average) in general practice career indicates that about 65% of respondents had acquired GPA within range [16-18], 30% between 14 and 16. Publishing of scientific essays is one of the

foremost variables, which show the scientific and research status in the studied sample. To explore the scientific status of the studied sample, quantity of the printed scientific- research, scholar- developmental essays, and essays presented in the conference was considered. The given results suggest that majority of sample size had no published essay. Nonetheless, the number of emergency medicine residents, who had published scientific essays, was too noticeable so that about 16% of them had published 1 scientific and research essays and also about 10% of them had between 2 to 3 scientific and research essays in their scholar resume. The period of passing residency career in the sample was uniformly explored. About 42.5% of them have passed this career less than 10 months, 33% between 10 and 20 months, and also 25% of them have passed period of their residency between 20 to 30 months.

The counseling source in selection of thesis subject

The supervisor is one of the paramount sources on which the students may rely in selection of thesis subject. Table 3 shows the advisory sources in selection of thesis subjects. Among three factors of supervisor, academic friends, and the student personally, who are designated to explore the counseling sources in selection of thesis subject, the supervisor is ranked at first position (78%). Thus, one can emphasize on remarkable role of supervisor in selection of thesis subject. Therefore, it is crucially important to pay attention to criteria for election of supervisor by assuming such a result.

Distribution of importance of the studied items in election of supervisor

Several effective criteria and standards have been designated to election of supervisor by advice of professors and experts of this field in this investigation and the rate of importance (significance) for each of the aforesaid criteria in election of supervisor has been measured with the format of Likert spectrum.

Ranking the reasons for election of supervisor: Table 4 shows the importance distribution of reasons for election of supervisor according to priority. From viewpoint of emergency medicine residents in target population, the scientific and individual morality of supervisor (85.7%) has been selected as the foremost factor in election of supervisor. The variables of supervisor's cooperation in completion of thesis (83%), superiority of supervisor from scientific and research aspects (80%), and availability of supervisor (77%) were ranked correspondingly in the next ranks of importance in election of supervisor. What it may be cleared from ranking the rate of importance of the criteria in election of supervisor is in that the scientific and ethical characteristics of supervisor as well as his/ her cooperation in completion of thesis are placed at higher rank compared to his/ her personal characteristics. In contrast, variables of having organizational position in group, gender, and marital status of supervisor were respectively ranked as criteria for election of supervisor. The Cronbach nonparametric Q- test confirms difference significance in rate importance in each of reasons for selection of subject. Table 1 shows the rate of high importance for the criteria of

Table 3: Counseling source in selection of Table (4-4): Ranking of importance of reasons for election of supervisor.

	Frequency	Percentage
Supervisor	46	78
Academic friends	2	3.4
My study and view	11	18.6
Total	59	100

election of supervisor based on order preference.

Time of selection of thesis subject

Table 5 indicates relative distribution of ideal and real time for selection of thesis. As it observed, most of emergency medicine residents (73%) have selected thesis and have expressed the first half of their residency career as time of selection of these credit while the rest (27%) have also selected their thesis credit at second half of residency career. In contrast, most of respondents (61.5%) have implied the second half of residency career as the most ideal time for selection of thesis. The first half of residency career (31%) and after the end of residency period (8%) have been respectively introduced as the most ideal time to select thesis credit according to viewpoint of emergency medicine residents in the target population.

The effective factors in selection of thesis subject

In order to explore the effective factors in selection of thesis subject, 10 questions, which have been measured by Likert spectrum, were used. The validity of the given questions has been confirmed due to verification of supervisor and advisor teacher as well as other advising experts.

Ranking the importance of reasons for selection of thesis subject: Table 6 shows the importance of criteria for selection of thesis based on significance of Cronbach test (P value < 0.001). As it also observed in Table 2, the criteria such as capability for extraction of essay (94.3%), compliance of subject with educational specialty field (90.1%), and the existing gaps in the previous studies (74.7%) were respectively the foremost reasons for selection of thesis subject and in contrast the variables of compulsory nature of thesis and its role in selection of subject, enjoying organizational support, and scientific priority of scholar group were assumed as the least important criteria in selection of thesis subject.

Table 4: Ranking of importance of reasons for election of supervisor Cronbach Q- test statistic value: 290.47. P value < 0.001 thesis subject

Reasons for election of supervisor	Relative share
Scientific and personal morality of supervisor	85.7
Supervisor's cooperation for completion of thesis	83
Superiority of supervisor in terms of scientific and research aspects	80
Accessibility of supervisor	77
Preparation of thesis for short time	68.8
Supervisor's scientific degree	68.8
Giving high score to thesis by supervisor	62.3
Supervisor's working field	59.2
Former acquaintance with supervisor	56.6
Attendance of the given supervisor in board of group	30
Full capacity of the interested supervisor and election of other one inevitably	26
Supervisor's leniency regarding test	18.4
Supervisor's marital status	18.1
Gender of supervisor	16.7
Having organizational post in group	15.3

Table 5: Relative distribution of time for selection of thesis subject.

	Time of selecting subject	Ideal time for selecting subject
First half of residency career	73.2	30.8
Second half of residency career	26.8	61.5
After the end of residency	---	7.7
Total	100	100

Table 6: Ranking of importance of reasons for election of supervisor.

Reasons for selection of thesis subject	Relative share
Extractability of essay	94.3
Compliance of subject with educational specialized field	90.1
Existing gaps in previous studies	74.7
Simplicity of thesis subject and not being time consuming in it implementation	73.2
Interest in selection of subject	61.4
Supervisor's professional comment	57.7
Scientific priority of scholar group	36.6
Enjoying organizational support	26.7
Compulsory nature of thesis and its role in selecting subject	9.3

The analysis of rate of high importance of reasons for selection of thesis subject separately based on gender

Table 7 presents the importance of reasons for selection of thesis subject separately based on gender (male and female). As it seen, compared to females, the males often assume selection of thesis subject as relatively important. In contrast, the females consider the compulsory nature of thesis and its role in selection of subject more important compared to the males. In other words, about 62% of respondents, who have confirmed the high importance of compulsory nature of thesis and its role in selection of subject, were males and about 38% of them were females. Nonetheless, it can be expressed that no significant and remarkable difference is seen in terms of importance of criteria for selection of thesis subject among two genders.

The Analysis of rate of high importance of reasons for selection of thesis subject separately based on marital status

The results of Table 8 signified the noticeable and significant difference in terms of importance of criteria for selection of thesis subject separately based on married and single respondents. Variables such as interest in selection of subject, supervisor's professional comment, and enjoying organizational support are some criteria, which are of higher importance among the married respondents than in single ones (Table 8).

The analysis of rate of high importance of reasons for selection of thesis subject separately based on age group

The results of Table 9 signify this fact that rate of high importance in criteria for selection of thesis subject is relatively preferred among various ages in such a way that rate of importance in all criteria and reasons for selection of thesis subject is higher in respondents at ages under 33 years compared to students and residents, who were older than age 33. The interesting point is that overall a significant difference can be inferred between two age groups in terms of rate of importance of criteria for selection of thesis subject. Likewise, it should be referred to preference of group under age 33 in terms of importance of reasons for selection of subject was uniform in all reasons of selecting subject.

The analysis of rate of importance of reasons for selection of thesis subject separately based on residency career

Table 10 presents distribution of high importance of selecting thesis subject separately based on period of selecting thesis subject. The results of this table suggest this important point that those students, who have selected subject of their thesis at first half of

Table 7: The agreed table for rate of high importance of reasons to select thesis subject and gender.

The reason for selection of thesis	Gender	
	Female	Male
Simplicity of thesis subject and lack of time-consuming of its implementation	46.2%	53.8%
Interesting in selection of subject	45.3%	54.7%
Extractability of essay	49.3%	50.7%
Compliance of subject with educational specialty field	47.9%	52.1%
Supervisor's professional comment	52.5%	47.5%
Scientific priority of scholar group	48.3%	51.7%
Enjoying organizational support	50.0%	50.0%
Existing gaps in previous studies	50.0%	50.0%
Compulsory nature of thesis and its role in selecting subject	61.5%	38.5%

Table 8: The agreed table for rate of high importance of reasons to select thesis subject and marital.

The reason for selection of thesis	Marital status	
	Single	Married
Simplicity of thesis subject and lack of time-consuming of its implementation	20.35	79.7%
Interesting in selection of subject	15.4%	84.6%
Extractability of essay	19.1%	80.9%
Compliance of subject with educational specialty field	18.6%	81.4%
Supervisor's professional comment	15.5%	84.5%
Scientific priority of scholar group	19.35	80.7%
Enjoying organizational support	16.7%	83.3%
Existing gaps in previous studies	18.3%	81.7%
Compulsory nature of thesis and its role in selecting subject	30.8%	69.2%

Table 9: The agreed table for rate of high importance of reasons to select thesis subject and age groups.

The reason for selection of thesis	Age groups	
	33 and older	Younger than 33
Simplicity of thesis subject and lack of time-consuming of its implementation	40.6%	59.4%
Interesting in selection of subject	36.5%	63.5%
Extractability of essay	36.8%	63.2%
Compliance of subject with educational specialty field	38.6%	61.4%
Supervisor's professional comment	39.7%	60.3%
Scientific priority of scholar group	43.9%	56.1%
Enjoying organizational support	42.6%	57.4%
Existing gaps in previous studies	39.4%	60.6%
Compulsory nature of thesis and its role in selecting subject	38.5%	61.5%

residency period, have confirmed the high importance of reasons for selection of thesis subject in comparison to the students, who have selected subject of their thesis at second half of residency career. On the other hand, the students, who have selected subject of their thesis at first half of residency career, further emphasized on role of compulsory nature of thesis and its role in selection of subject and enjoying organizational support. In contrast, that group of students, who selected their subject during second half of residency career, has paid more attention to interesting subject of their thesis.

After conducting descriptive analysis on relationship between background variables and criteria for selection of thesis subject, significance, and statistical inference of relationships among these

criteria with the criteria for selection, the thesis subject and supervisor were examined. In analysis on relations between background variables and criteria for selection of thesis subject and supervisor, the results of statistical tests suggest lack of significance of relations among these variables and criteria for election of supervisors and thesis subject. 15 criteria were asked to examine the students' attitude toward election of supervisor in the present research. To evaluate attitude level, any correct answer was given one positive score but incorrect response had no score (zero). Thus, score of students' attitude regarding election of supervisor varied among zero and 15. The mean score of 9.2 ± 2.3 was derived for the studied students in these analyses. Whereas distribution of this score followed the normal function in this study ($p= 0.1$ as result of Kolmogorov- Smirnov test) thus the parametric analyses were employed for comparisons. Accordingly, the means score for the present males was acquired for criteria of thesis selection (9.2 ± 2.2) and in the females as (9.2 ± 2.4) ($p= 0.35$). Among married physicians this mean score was 9.3 ± 2.2 and between the single physicians this mean score was 8.6 ± 2.4 . The other relationship among factors and this parameter is shown in Table 11.

10 criteria were also asked in analysis of the criteria for selection of thesis where the mean value of correct responses was derived 3.5 ± 1.6 answers in this regard at the studied population. In other words, the criteria for selection of thesis were not proper criteria among the medical students and they needed to serious and vital trainings in this field. It is noteworthy that distribution of criteria for selection of thesis also followed the normal function in the studied population ($p=0.16$ as a result of Kolmogorov- Smirnov test) therefore the parametric analyses have been adapted for the comparisons as well in this section.

The means score of the male participants in this investigation

Table 10: The agreed table for rate of high importance of reasons to select thesis subject and period of selection of thesis subject.

The reason for selection of thesis	Period of selection of thesis subject	
	Second half of residency	First half of residency
Simplicity of thesis subject and lack of time-consuming of its implementation	28.0%	72.0%
Interesting in selection of subject	31.7%	68.3%
Extractability of essay	25.9%	74.1%
Compliance of subject with educational specialty field	25.5%	74.5%
Supervisor's professional comment	28.3%	71.75
Scientific priority of scholar group	28.9%	71.1%
Enjoying organizational support	12.8%	87.2%
Existing gaps in previous studies	28.3%	71.7%
Compulsory nature of thesis and its role in selecting subject	0.0%	100.0%

Table 11: The relationship between background variables of research with level of students' attitude toward election of supervisor.

Variable	r	P
Age	-0.22	0.1
Working background	0.07	0.58
GPA	0.12	0.32
Resident	0.17	0.16
Number of scientific- research essays	-0.026	0.83
Number of scientific- developmental essays	0.024	0.84
Number of essays in conferences	-0.09	0.45
The passed time in residency career	-0.26	0.02

was acquired for criteria of thesis selection 3.5 ± 1.3 and the time of selection with 3.6 ± 1.8 ($p=0.8$). No relationship was also seen among variable of marital status with criteria for selection of thesis ($p=0.18$). The mean value of this score was derived 3.6 ± 1.5 among married physicians and 3.0 ± 1.8 between single physicians respectively. The other relationship between factors with this index is shown in Table 12.

As it shown in Table 1, the only factor that was significantly related to criterion of election of supervisor, is the time passed from residency career ($r = -0.26$, $p = 0.02$).

Discussion

The progress and developments of nations are based on science and knowledge in modern world. Research and production of science and technology are deemed as the paramount elements for economic, social, cultural, industrial, and political growth and development in the country. These fields can be achieved if the subject of research and technology is appropriately addressed in national purposeful and planning at macro level. No country has been so far seen in the world that could achieve economic and industrial development regardless of scientific comprehensive development. Thus, it requires the research and technology to be prioritized as the vital issue and impetus for progress and sustainable development and achieving welfare and real independence in the community.

It is entirely obvious that scientific accumulation and developing science is subjected to policymaking toward spreading research. In other words, developing of science and expansion of research plays a complementary role. However, the effect of research and study on developing knowledge in all scientific and academic fields is not hidden to anyone, and at the same time this relationship may play up further and more obvious in the field of health. In other words, with creating new knowledge in the health field through leading to better technology and providing events- based decision making, the research not only improves lifestyle based on enhancement of health, but also it is deemed as a necessity for social and economic development.

Student's theses in medical fields are assumed as one of the important scientific and research sources, which can be deemed as an important step taken toward developing medical science. On the other hand, with respect perfect awareness of academic professors and scholar environment of research gaps in healthcare field, the role of university and students' researches can be played up further in developing medicine in the case of employing these subjects within the format of students' dissertations. Nonetheless, recognition of the related challenges with students' theses in the field of medicine, the criteria for selection of subject, and students' attitudes toward selection of supervisor may play crucial role in highlighting students' researches further in developing medical science and health. Accordingly, this study is intended to identify the importance of criteria for selection of thesis subject and supervisor.

In an investigation that was done by Sharifi [6], simplicity and lack of time-consumption for selection of thesis subject, interest in thesis subject, and potential of thesis subject to conversion into the essay have been mentioned as the foremost reasons for selection of subject of thesis. Likewise, variables of supervisor's cooperation in completion of thesis, availability of supervisor, preparation of thesis within shorter time have been assumed as the paramount reasons to elect the supervisor. At the same time in this study; however, the range of the employed criteria has been focused further in analysis

Table 12: The relationship between criteria of thesis selection with research background variables.

Variable	r	P
Age	0.06	0.6
Working background	0.17	0.17
GPA	0.08	0.5
Resident	-0.07	0.53
Number of scientific- research essays	-0.15	0.2
Number of scientific- developmental essays	-0.22	0.06
Number of essays in conferences	-0.18	0.12
The passed time in residency career	-0.21	0.07

of the reasons for selection of subject for thesis and choosing the supervisor, one can confirm the compliance of its importance for the common reasons in this survey.

As a result, ranking of importance for criteria to select subject of theses signified that the criteria of extractability of essay (94.3%), compliance of subject with educational specialty field (90.1%), and the existing gaps in the previous researches (74.7%) was considered as the paramount reasons for selection of thesis subject. Also in terms of the reasons for election of supervisor, the criterion of supervisor's scientific and individual morality (85.7%) was expressed as the foremost factor in choosing the supervisor. Other criteria including supervisor's cooperation for completion of thesis, superiority of supervisor from scientific and researching perspectives, and availability of supervisor are ranked in the next positions of importance in choosing supervisor. Similarly, the results of the present research are consistent with the findings of studies done by Radafshar and Isaac [2,14]. Radafshar [2] has expressed the highest importance in some criteria including selection of thesis subject, access to resources and facilities, interest in supervisor in the relevant field to the given subject, shorter time of execution, need to simple methodology with the limited sample size, interest in thesis subject, and also about highest importance for election of supervisor in interest and ease of relationship and rapport with supervisor, ease of access and quick availability of supervisor, satisfaction of superior students with the given supervisor, lenient supervisor, ability of supervisor in publishing the results of thesis as essays, and high scientific capability of supervisor. Although analysis on role of social demographic factors did not show statistical significant relationship in selection of thesis subject and there is uniform variance among grouping of variables of gender, marital status, age, and time of selecting subject, the descriptive analysis on these relations showed that in comparison with females, the males often consider the reasons for selection of thesis subject as relatively important and at the same time in contrast the females assume the variable of compulsory nature of thesis and its role in selection of subject more important than in males. Interest in selection of subject, the professional comment from supervisor, and enjoying organizational support are some criteria, which are relatively more important among the married respondents than between single participants. Those students, who have selected subject of their thesis in first half of residency career have further emphasized on compulsory role of thesis and its role in selection of subject as well as enjoying organizational support. In contrast, the students, who selected subject of their thesis in second half of internship period, have paid more attention to interest in selection of subject.

However, the results of the current research are similar to findings of studies of Radafshar and Sharifi [6], and Isaac [14] and other related investigations; the composition of priority of reasons for selection of thesis subject indicates changing reasons for selecting the subject

into scientific and research fields. In other world, paying attention to extraction of essay, compliance of subject with educational specialty field, and the existing gaps in the former studies in selecting subject of thesis can express this fact well that placement of scientific and academic development in the focal point of students' attention may play vital role in developing role of students' theses in accumulation of science in medical field. Paying attention to role of supervisor in completion of thesis, scholar ethics of supervisor, and superiority of supervisor in terms of scientific and research perspective are also considered as some evidences for this claim.

As Rezaian and Mozaffari Khosravi [5,8] have acknowledged the trend of improving quality of theses from students in medical fields during recent years, the result of this study about relationship with rate of importance of reasons for selection of thesis subject indicated that one can hope to further improvement of quality in students' theses more than ever in the forthcoming years.

The review on relationships among research background variables and criteria for selection of theses showed that all of studied variables in this investigation had no significant effect on importance of selecting thesis subject except variable of time of selection of thesis subject. In other words, compared to higher periods, the importance of criteria for selection of thesis subject is greater than the beginning of residency career (first year). From this perspective, it seems necessary to change research and development infrastructures in the healthcare and medical field in order to change attitude in residents to pay more attention to their theses.

Therefore, based on the results derived from this study one can refer to the following items as suggestions in this study:

- Paying attention by supervisors and students to extractability of essay in selection of subject for thesis
- Implementation of integrated and adequate exploratory studies to identify the existing research gaps
- Cooperation of supervisors in selection of thesis subject by recognition of the existing gaps and transferring them to student
- With respect to importance in role of compliance with educational specialized fields to select the subject, it is better to select thesis subject through identifying the existing gaps in line with the specialized field.
- The supervisor should make their best effort in completion of thesis as well as extraction of essays from the research work.

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