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Quantitative Assessment of Theses at Mazandaran University of Medical Sciences Years–(1995-2014)

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ABSTRACT

Background: Review and evaluation of research for the correct steps towards real progress is essential which is a healthy and dynamic feature of the system. For the correct step toward real progress, evaluation research is essential which is feature of healthy and dynamic system. Considering the importance of scientific thesis in production and development and be aware of as the lack of structured information and qualitative and quantitative assessment at Mazandaran University of Medical Sciences, therefore we decided to do qualitative stud of theirs prepared 1995-2014. **Methods:** This study was a descriptive survey, a sample of 325 graduate and PhD thesis and dissertation in clinical and basic science at the university of medical sciences of the population in 2060 is a thesis from 1994 to the end of 2014. To study the population, stratified sampling method was used. The descriptive study was conducted in terms of matching the degree thesis students, theses subjects, specialty of supervisors and Advisers. The data gathering tool was checklist of information (gender, discipline, degree and department education of students, School, year of dependence, title of theses and dissertations, specialty and departments of supervisors and advisers, type of research, grade obtained of students). Statistical analysis of the data was performed using 21 SPSS software. **Results:** We studied 325 theses; 303 dissertations which 1 researcher; 21 dissertations which 2 researchers and 1 dissertation with 3 researchers. A total of 348 students (174 females and 174 males) researcher had theses. The number of students in the Department of Basic Science 82 (23.5%), 266 (76.5 %) in clinical group; 29(8.33%), 29 (8.33%) master degree; 260 (74.71%) general practitioner; 58 (16.67%) specialty and 1(29) at the PhD level. There was no relationship between research and level of education ($p = 0.081$). However, it was found that majority of the theses for the general practitioner (59.8%) wryer type 1(status condition). By matching and determining the overlapping of specialty of the advisor and the guide with the title, titles of the theses. It was found that 298 (91.69%) of the theses correspond with the specialty of the advisors and the supervisors. **Conclusion:** Based on the results obtained on the review of the theses to direct students to fundamental research and applying of specialized groups of supervisors and advisers in accordance with research is felt. No doubt that in the future will improve the quality of the students' theses.

Key words: Dissertations, Academic Evaluation, Research, Mazandaran University of Medical Sciences, Quantitative assessment.

1. INTRODUCTION

Dissertation supervisor selection is one of the most important and crucial decisions in doctoral programs. Typically, selection process is based on a set of criteria such as supervisors' reputation, number of dissertations guided, continues supervision, etc. However, the application of these criteria is often subjective and intuitive and it can cause dissatisfaction, delay on completion time, and quality reduction of dissertations(1). A thesis is an important part of nursing graduate students' education, which is also their first systematic and

scientific attempt to learn the ABCs of research (2). Thesis is an important part of specialization and doctorate education and requires intense work (3). Undergraduate medical education mostly prepares medical students for medical practice, whereas postgraduate education prepares them for the world of science. Scientific research is an integral part of postgraduate studies, aimed at teaching future scientists how to determine a problem, choose a proper scientific approach, present research data, and reach clear and simple conclusions (4-7). Thesis commonly reflects stu-

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	Year of defense					Subjects	School
	2011-2014	2007-2010	2003-2006	1999-2002	1995-1998		
	F (%)	F (%)	F (%)	F (%)	F (%)		
186 (57.23)	32(9.85)	38(11.69)	29 (8.92)	33(10.15)	54(16.62)	Diseases	Medicine
44 (13.55)	14(4.31)	5(1.54)	3(.92)	12(3.69)	10(3.08)	Operations	
30 (6.16)	7(2.15)	6(1.85)	3(.92)	4(1.23)	-	Miscellaneous	
5(1.54)	4(1.23)	-	5(1.54)	-	-	Clinical Pharmacy	
10(3.08)	5(1.54)	-	-	5(1.54)	-	Medicinal Chemistry	
13(4)	9(2.77)	-	2(0.6)	2(0.6)	-	Toxicology	Pharmacy
17(5.25)	6(1.85)	3(0.92)	5(1.54)	3(.92)	-	Pharmaceutics	
6(1.85)	1(0.3)	-	3(.92)	2(0.6)	-	Pharmacognosy	
4(1.23)	2(0.6)	-	1(0.3)	1(0.3)	-	Pharmaceutical Industry	
2(0.6)	-	1(0.3)	1(0.3)	-	-	Nuclear Pharmacy	
4(1.23)	-	-	2(0.6)	2(0.6)	-	Organic Chemistry	Health
1(0.3)	1(0.3)	-	-	-	-	Diseases	
4(1.23)	2(0.6)	2(0.61)	-	-	-	Operations	
5(1.54)	5(1.54)	-	-	-	-	Environmental Health	
2(0.6)	1(0.3)	1(0.3)	-	-	-	Diseases	
2(0.6)	2(0.6)	-	-	-	-	Operations	Sari Nursing-Midwifery
325(100)	91(28)	57(17.5)	50(15.3)	64(19.6)	64(19.6)	Total	

Table 1. The frequency distribution of descriptions of dissertation topics theses in terms of year of defense and schools

dent's research interests, which are formed in the university education courses. Formation problem in thesis is one of the most important subjects in these research documents. Limitations and situations govern in research scope causes author (researcher) to limited framework of topic as problem base in his or her research. Investigation of thesis content and their subject trend can help each auditor to identify students' interests, and make a good guidance for correct programming in future (8). Theses are considered as one of the sources for research in the field of education. Although in the recent decade, there has been an increase in new topics and educational interference in theses, some important issues like the training of patients is still neglected. It seems that some strategies like preparing a suitable information bank of thesis in the field of health education can be a good guide for selecting new topics and ignoring old ones. (9). We live in an era of scientific and technical information explosion that are collected in the unlimited knowledge bases through millions of biomedical and other journals into on-line databases (10-13). Different studies about scientific production and its importance has been studied (14-16).

Basically, non-book materials are important in terms of information content. Usually, the works of researchers before accessible in book format for their audience, they released in limited editions and in various forms. One of these valuable sources of information is theses that every year, the government spend plenty of financial resources and a significant portion of the energy and took time of faculty members (17).

Research is an important aspect of human beings' life and human knowledge grows with research and this finally leads to broadening of knowledge borders. Advances of each society are consequences of research. Moreover, research helps mankind with finding solutions to problems and contradictions (18). Today, a large part of researches is conducted in universities and higher education centers. These studies are conducted with three main goals of current knowledge development, past studies ambiguity removals and knowledge level improvement and finally application of created knowledge results to society problems. Theses are the results of a disciplined and systematic study about an important issue

and by designing of important hypothesis and by collecting data and their analyzing, ultimately to achieve a result and recommendations. Therefore, as scientific resources are important from 3 aspects: a) As needed research of information resources; b) presenting the results of scientific activities and research; and c) avoid of duplication (19).

It is noteworthy that more than half of the country based Research in Medical Sciences Student theses done at different levels of education. Considering the importance of a theses on the production and development of science and as well as the lack of structured information and qualitative and quantitative assessment of them at Mazandaran University of Medical Sciences, researchers necessitate the study of first thesis in 1994 to the end of 2015 (twenty-year period).

2. MATERIALS AND METHODS

This study was a descriptive survey, a sample of 325 graduate and PhD thesis and dissertation in clinical and basic science at the university of medical sciences of the population in 2060 is a thesis from 1994 to the end of 2014. To study the population, stratified sampling method was used. The descriptive study was conducted in terms of matching the degree thesis students, theses subjects, specialty of supervisors and advisers. The data gathering tool was checklist of information (gender, discipline, degree and department education of students, School, year of graduation, title of theses and dissertations, specialty and departments of supervisors and advisers, type of research, ranks getting of students). Statistical

Figure 1. Frequency distribution of theses during the years of 1995-2014

F(%)	Subjects of Thesis		School
	Minor subjects	Major-sub-jects	
19(5.8)	Infectious and parasitic disease		Diseases
5(1.5)	Neoplasms	Digestive organs	
2(6)		Bone and articular cartilage	
1(3)		Mesothelial and soft tissue	
1(3)		Breast	
1(3)		Male genital organs	
1(3)		Brain	
2(6)		Lymphoid, hematopoietic and related tissue	
5(1.5)	blood and blood-forming organs		
17(5.2)	Endocrine, nutritional and metabolic diseases		
24(7.4)	Mental and behavioral disorders		Medical
2(6)	nervous system		
5(1.5)	eye and adnexa		
1(3)	ear and mastoid process		
14(4.3)	circulatory system		
7(2.2)	respiratory system		
14(4.3)	digestive system		
7(2.2)	skin and subcutaneous tissue		
3(9)	musculoskeletal system and connective tissue		
11(3.4)	genitourinary system		
13(4)	Pregnancy, childbirth and the puerperium		Therapeutic Action
7(2.2)	Certain conditions originating in the perinatal period		
1(3)	Congenital malformations, deformations and chromosomal abnormalities		
8(2.5)	Symptoms, signs and abnormal clinical and laboratory findings		
14(4.3)	Injury and poisoning		
1(3)	Factors influencing health status and contact with health services		
Sum=186(74.4)			
3(9)	Eye		
3(9)	nose, mouth, and pharynx		
5(1.5)	cardiovascular system		
6(1.8)	digestive system		
4(1.2)	urinary system		
2(6)	male genital organs		
3(9)	female genital organs		
2(6)	obstetrical procedures		
3(9)	musculoskeletal system		
1(3)	Integumentary system		
10(3.1)	diagnostic and therapeutic procedures		
2(6)	drug therapy		
Sum=44(17.6)			
8(1.8)	KAP study		Miscellaneous
10(3.1)	Animal testing		
1(3)	Medical Retraining program		
1(3)	Medical adaptation plan		
1(3)	Validity and reliability form		
1(3)	Genotype assignment		
Sum=20(8)			
250(76.92)	Sum		
5(1.5)	Clinical Pharmacy		Pharmacy
10(3.1)	Clinical Biochemistry		
13(4)	Toxicology		
17(5.2)	Pharmaceutics		
6(1.8)	Pharmacognosy		
4(6)	Pharmaceutical Industry		
2(6)	Nuclear Pharmacy		
4(1.2)	Organic Chemistry		
61(18.77)	Sum		
2(6)	operations on the cardiovascular system		Health
1(3)	operations on the digestive system		
1(3)	operations on the urinary system		
1(3)	neoplasms of digestive organs		
5(1.5)	Environmental Health		
10(3.08)	Sum		
2(6)	Injury and poisoning		Sari- Nursing and Midwifery
2(6)	operations on the cardiovascular system		
4(1.23)	Sum		
325(100)	Total		

Table 2. Distribution of dissertation topics in terms of Schools

Total	Matching teachers with subject specialization		Teacher
	No	Yes	
F(%)	F(%)	F(%)	
325(100)	2(0.62)	323(99.38)	Frist supervisor
51(100)		51(100)	Second supervisor
226(100)	5(2.21)	221(97.79)	First advisor
100(100)	5(5)	95(95)	Second advisor
18(100)	2(11.11)	16(88.89)	Third advisor

Table 3. frequency distribution of educational level of supervisors and advisers of theses

Education degree of teachers					Teachers
Total	super-specialists	Specialists	PhD	MA	
F(%)	F(%)	F(%)	F(%)	F(%)	
325(100)	55(16.92)	162(49.85)	108(33.23)	-	Frist supervisor
51(100)	4(7.85)	6(11.76)	41(80.39)	-	Second supervisor
226(100)	37(16.37)	78(34.51)	109(48.23)	2(0.89)	First Consultant
100(100)	14(14)	38(38)	46(46)	2(2)	Second Consultant
18(100)	1(5.56)	10(55.55)	6(33.33)	1(5.56)	Third Consultant

Table 4. Description of matching teachers' subject specialization with topics of theses

analysis of the data was performed using 21 SPSS software.

3. RESULTS

Frequency distribution of theses during the years of 1995–2014 is shown in Figure 1. The frequency distribution of descriptions of dissertation topics theses in terms of year of defense and schools is shown in Table 1. Distribution of dissertation topics in terms of Schools is shown in Table 2. Determine the type of research-based of theses objectives are based on the categories presented in Figure 2.

Figure 2. Determine the type of research-based of theses's objectives are based on the categories presented in

Each of theses and matching and overlapping of supervisors and advisors with proposed title, it was found that 298 theses (91.69%) of specialized departments had full and proper relationship with title and in 27 (8.31%). Partially overlapping groups have formed that was required of experts would be used. In reviewing the rating scores of 348 (100%) students, 203 patients (54.38%) ranked excellent (18.5–20), 123 (35.34%) with very high scores (17–18.49), 13 (4.22%) rated good (16.99–18.5) and 1 (0.29%) rated acceptable (14–15.49) have been ranked and 7 (2.01%) of the students' mark were not noted in the theses.

4. DISCUSSION

In the present study, 325 Thesis of Mazandaran University of Medical Sciences since the beginning of March 1995 to the end of March 2014 were studied. The results of this study, generally are about gender, school, Major, school and

educational department of students, thesis title, specialty and educational department of supervisors and advisers, type of research, received scores of Students. Frequency of 325 theses with separation of five periods from 1995 to 2014 Showed that the largest number of theses were in the period of 93-90 with 91 theses (28%) and the lowest in the period of 85-82 with 50 theses (3.5 %). Number of students 82(23.5) were in the department of basic science 82 (23.5%) and 266 (76.5%) in the department of clinical sciences, most of the 259 students (74.42%) were related to general practitioner and the lowest number (0.29%) were related to a super-specialist. Among the 250 (76.9%) theses at Sari Medical School were in the group of diseases, mental and behavioral disorders with 24 (7.4) theses, infectious and parasitic disease with 19 (5.8), endocrine, nutritional and metabolic diseases with 17 (5.2%). In the groups of topics "surgical procedures", trends were toward "diagnostic and therapeutic procedures" with 10 (3.1%), "operations on the digestive system" with 6 (1.8%) and "operations on the cardiovascular system" with 5 (1.5%). In the groups of "miscellaneous" trend were toward "animal testing" with 10 (1.3%) and "Knowledge attitudes and practice (KAP) study" with 6 (1.8%)

In the statistical samples studied, out of 61 (18.7%) theses of school of Pharmacy, the most titles 17 (5.2%) were in "pharmaceutics", 13 (.4%) titles in "Toxicology", and 10 (3.1%) titles in clinical biochemistry. 10 (3.08%) theses titles of the school of Health, the most titles 5 (1.5%) were in "environmental health" and 2 (0.6%) in "operations on the cardiovascular system". 4 (1.023%) theses of the Sari school of Nursing and Midwifery, 2 (.6%) of titles were in "Injuries and poisoning" and 2 (.6%) of titles in "operations on the cardiovascular system". Most of the research of theses 210 (64.62%) were related to the research type I (descriptive). 79(24.30%) of the theses had supervisor and advisor which the most research type in theses 45 (56.25%) were the in the research type I (descriptive). The most research type I have done by male students (34.77%), research type II (9(2.59%)), research type III 41(11.78%) and research type IV 19(5.46%) by female students. There was no relationship between the type of study and level of education ($p=0.081$). However, it was found that the General medicine degree, the majority of theses (59.8%) of researches were in research type I (descriptive). Most guidance has done by the department of basic Sciences were from department of "Pharmaceutics" 23 (8.85%) and "Toxicology and Pharmacology" - 19 (7.31%). The most consultation has done by the department of Basic Sciences belonged to the departments of "Biostatistics and Epidemiology" - 72 (27.69%) and "parasitology and mycology" and "Physiology and Pharmacology" jointly - 10 (3.85%).

Most guidance has done by the Department of Clinical Sciences 47 (10.22%) and "Pediatrics" 28 (6.96%) and most counseling has done by clinical sciences department groups 'domestic' - 62 (13.48%) and "Pediatrics" - 20(4.35%).

The most frequent degree of first supervisor was "specialist" - 162 of 325 (49.85), second supervisor were 41 of 51 (80.39%) "PhD", first advisor was 109 of 226 (48.23%) "PhD", second advisor were 46 from 100 (46%) "PhD" and third advisor were 10 of 18 (55.55%) "Specialist".

323 of 325 (99.38%) of first supervisor matched with a thesis topic, second supervisor matched 51 of 51(100%), first

advisor matched 221 of 226 (97.79%), and matched 16 of 18 (88.89%).

Each of theses and matching and overlapping of supervisors and advisors with proposed title, it was found that 298 theses (91.69%) had full and proper relationship with title. A total of 203 students (58.34%) have got higher rank (18.5-20) and 1 (.29%) acceptable rank (14-15.49).

Generally, based on the findings of this study and compared with other studies performed in the field ((5-10)), it can be concluded that:

- Background, has been major factor in having the greatest frequency of theses (Background of the first thesis is defended by year are: School of Medicine 1995.9.23; School of Pharmacy 2000.8.7; school of Health 2010.6.14 and school of Nursing and Midwifery 2011.1.29).
- The degree and level of education is effective in the number of theses (School of Medicine with 1589 theses, School of Pharmacy with 389, School of Health with 59 and school of Nursing and Midwifery with 23 theses).
- Levels of education are the lowest factor which has an important contribution in students' admission. Whatever the level of education had a lower level, Frequency is also more students and vice versa.
- Dating back of some trends in a field of study in basic and clinical educational departments was the main reason of the large number of theses.

In guidance of theses, expertise of teachers was considered so that Area of Expertise has overlapped to the topic of theses. Obviously, for writing of theses with good quality, attention to the role of supervisors and advisers in providing solutions is undeniable. Theses guidance is purposeful tasks which take place set by one or more specialized faculty members in a topic, through corresponding to the student's theses can be defended on the basis of principles and action.

Factor of defending year, reflects the increasing number of faculty members and consequently increasing the number of supervisors and therefore they have more time to guide students who have diversity topics (13, 21).

Quick and easy access to the data banks and databases improved the process of writing theses.

Based on the results of this quantitative study, it is suggested:

Educational departments conduct and guide students to the fundamental, basically and applicable topics based on the societies needs assessment and in order to enhance innovation and creativity, and to avoid from repeating patterns and topics, and by attending of teachers in the internal and external conferences in order to promote the quality and production of updated knowledge will act in the country and presentable in international scientific community.

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