A Survey of the Zahedan Medical School Students' View of the Research Workshop and its Effects on their Final Thesis

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Abstract

Background and purpose: *The research workshops (RW) for the medical students have been performed at Zahedan University of Medical Sciences (ZUMS) since about ten years ago. The aim of the RW is teaching the research rules to the medical students to be used in their future researches, especially in their final thesis project.*
This study is planned to investigate the effect of the research RWs on the students' final project.
Methods: *This descriptive research was performed in 2005 to 2006 at ZUMS. The target population was the medical students who passed the research RW and registered their final thesis project. The research sample was 155 and the data were collected using a questionnaire. For data analyzing, the descriptive statistics and nonparametric methods were applied in SPSS software.*
Results: *The results show that 24.8% of the students believed that the effect of the RW on their projects was poor or very poor. Over 28% believed that the effect was moderate and 46.4% believed that the effect is high or very high. Also, 86.5% of the students believed that the RW is essential for them.*
On the other hand, the students stated that the effects of the different sections of the RW were not the same. The section of introduction, aim and hypothesis are the most effective sections which are more applicable in their research project, while the sections of the sample size, sampling techniques and the research timetable are the least effective sections of the research RW. Also, 50.3% of the students believed that the best time for the RW is in externship period and 39.4% said that the best time is in internship period. Furthermore, 45.2% believed that the full time 3 or 4 day RW is not suitable and they suggested a minimum of a 7 day part time RW to learn better. The students also believed that the practical parts of the RW are the most effective parts. The most important problem during the projects as stated by the students are determining the sample size, sampling techniques, writing the references and plotting the tables and graphs.
Conclusion: *It seems that the RW programs need to be revised and the part time RWs should be replaced. The period of the different parts of the RWs should be changed according to their importance and effects on the students' final projects. If the RWs are less effective due to its time, periods, lecturers or syllabus, it needs to be reformed; otherwise the RWs will need to be stopped.*
Keywords: *Research workshop, medical, Students, Thesis, Zahedan.*

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Introduction

The research workshop (RW), as a necessary course, is being performed for the students, especially the medical students, at many medical universities in Iran. In some universities, including Zahedan University of Medical Sciences (ZUMS), it is pre-requisite to the final

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thesis and the students must pass it first before starting their final thesis. The RW is run at the same time of the externship, so the students are very busy with their clinical trainings which are the most important part of their education. Normally, the managers of the RW ask the heads of the educational departments to stop the students' training during the RW to take part more actively. Unfortunately, due to in-coordination between the managers of the RW and the heads of some educational departments in the School of Medicine, the heads of the departments force the students to take part in other departmental activities such as lectures, on call, rounds, etc. at the same time of the RW. This decision causes incomplete attendance of the students in all RW programs. Therefore, they miss some educations which may be important in preparing them for their final thesis.

The time of performance of the RW in ZUMS is determined by the School of Medicine and it is usually before the pre-internship overall examination, and the students have no option to choose or change the time. Also, there is not any credit (unit) for this course, although this is a part of the students' necessary education. There is no evaluation at the end of the majority of RWs in ZUMS.

In all RWs at ZUMS some of the participants are not satisfied with the RW programs, so their participations are due to the managers' force. Due to this obligation and probably not applying the students' opinions in RWs, these participants are not satisfied with taking part in RWs, so they try to leave the RW at any time they can. On the other hand, the Ministry of Health and Medical Education asks the universities to perform more RW and increase their number not only for the medical students but also for other students, lecturers, etc. Therefore, the university managers on research affairs try to perform more RWs. However, the quality of education in these RWs is not considered seriously. In Contrast to the philosophy of these RWs which is the training of research to students to be used in their future thesis, many of the students do not like to participate. They usually mention different reasons that need to be investigated. Some of the students believe that there is no relation between participating in RW and producing an excellent thesis. Therefore, these students do not actively participate in the RW sessions and their knowledge about research methodology remains poor, requiring frequent meetings and consultation with their supervisors which is time consuming. Even there are many students who are unable to use the comments of the consultants and referees to modify their proposals.

Some of the students believe that the RW is useful but its programs need to be revised for optimum learning. Also, some students believe that the research training is necessary and it is not in contrast with studying and becoming a good doctor (1). In a research, it was shown that there is correlation between the level of knowledge in research methods in medical students and passing the RW or producing a proposal (2). Peyrovi and colleagues investigated the final thesis of the medical students from 1987 to 1994, and showed that the thesis trend is toward getting better and good quality, but the RWs were only of use in changing the format of the thesis, not the contents (3).

There is not any examination at the end of the RWs; neither the mangers of the RW ask the participants to write a proposal according to their learning from the RW for evaluation. Therefore, physical attendance in the RWS is assumed to be equal to passing the RW which seems to be beyond the scope of the managers. Due to this incorrect eyesight, a certificate is given to the participants by the University deputy for research without any exam or evaluation. This incorrect method results in the inactivity of many students during the RW, especially in practical works, so they miss their best time to learn the research methods as a necessary course.

The students are busy during the performance of RWs with their normal educations, and at the same time they need to take part in RW. Therefore, the mangers of the medical universities should prepare the best program to cover the scope of RW with the high quality considering need assessment. On the other

hand, since the RWs are performed in term time and the RW lecturers are busy with their routine teaching, it needs the coordination between of the managers and lecturers to find the best time of performance. Appropriate organizing of RW program is of great importance, particularly with concern to the time, period and cost to result in a good performance and expected outcomes.
The students' need assessment, during the completing of their final thesis can help the RW mangers to prepare the educations relating to their needs.
This research is proposed to investigate the effect of RW in the final thesis of medical students. The result of this study can help the RW managers to remove the unnecessary parts of the RW and improve the more useful parts. Also, finding the best time and period for the RW is the other objective of the study. Furthermore, the study can help the managers, planners and lecturers to increase the RW quality, reduce its cost, and help the students to save their time to gain more skills as well.

Materials and Methods

This descriptive study was performed from the second semester of 2005 to the end of the second semester of 2006 in ZUMS. The target population was the medical students who passed the RW and registered their thesis proposal at the School of Medicine.
In ZUMS the RW is normally introduced at the end of clinical period (externship) and before the pre-internship overall examination. The students should register their thesis proposal in maximum one year after the pre-internship overall examination. The second year interns in ZUMS normally register their proposal in the school and are busy with their thesis. The first year interns start preparing their proposal at the end of the clinical period (after passing the RW) or soon after the pre-internship overall examination. Since the number of students in the School of Medicine was about 450 at the starting of the research and almost 70 students in each year start their internship in the school, the number of eligible students to enter the study s hould be almost 140 students. The number of students who filled the study questionnaire was 155 (30% of all students) which includes all eligible students. The questionnaires were distributed through the research office in the School of Medicine, where the students come to register their thesis proposal or to submit the final thesis. The validity of the questionnaire was confirmed by some of the lecturers at the University (i.e. face and content validity), and its reliability was proved by alpha Cronbach test with the value of 0.87, indicating that the reliability is quite well.
The data from completed questionnaires were entered into the computer after the coding. For data analysis the descriptive statistics together with non-parametric tests such as Mann U Whitney and Kruskal-Wallis in SPSS version 14 were used.

Results

The majority of the students (50.4%) were born in 1979 and 1980 and the mean and SD of the age were 26.1 and 2.02 years, respectively (with 34 missing values). Table 1 is the frequency of the gender and the admission year of the students at the University.

Table 1. The distribution of gender and starting year of the medical students at ZUMS in 2005-2006

Year	Before 75	75	76	77	78	After 78	Sum
Male	7	6	21	34	12	3	83
Female	0	4	9	33	15	1	62
Sum	7	10	30	67	27	3	145*

* *There was 10 missing in this table.*

The students' supervisors were from the Department of Gynecology and Obstetrics (25.8%), Pediatrics (12.9%), Internal (10.3%), Psychology (9.7%), Pathology (8.4%), Infectious diseases (5.2%), Anatomy (3.9%) and the rest from the other departments. The consultants of the thesis were from Department of Nutrition

(25.8%), Statistics (7.1%), Psychology (5.8%), Public Health (5.2%) and the remaining from other departments (38.1% had no consultant and 15.4% did not mention).

A number of 134 students (86.5%) believed that the RW is essential and 21 students (13.5%) believed that it is unessential. The students' reasons for essentiality of the RW are as follows: insufficiency of the syllabus of the course of Health4 (5.8%), the need of acquaintance with research methods (12.3%), its applications in preparing the final proposal and the thesis (12.3%). Also, the percentage of the students who introduced the second and third reasons for the essentiality of the RW was 24.5%, and the percentage of those who introduced all the above reasons was 22.6%, and the remaining introduced other combination of the above reasons.

The students were asked about the effect of the RW on their final thesis, and their responses were very poor (11.1%), poor (13.7%), moderate (28.8%), high (22.9%) and very high (23.5%). Mann U Whitney non-parametric test showed that there is a relationship between the student views on the effect of the RW on their thesis and the essentiality of the RW (p=0.000). Most participants, who believed that the RW is essential, believed that the RW is effective on their final thesis.

Over 89% of the participants were permanently present in the RW and 10.3% were partly presented. There is not a significant correlation between the kind of presence in the RW and the effect of the RW on their final thesis, using the Mann U Whitney test (p=0.099), but the RW was more effective in those who were permanently presented in the RW.

The views of the participant on the different sections of the RW were significantly different (Table 2). The sections such as title, the aim and the objectives are the most effective sections of the RW according to the students' view. The titles of sampling techniques and the sample size, timetable and the data analysis are the title with the minimum effect on the students' final thesis.

According to students' opinions, the suitable time of performing the RW is after the pre-internship overall examination (mentioned by 39.4%), before the pre-internship overall examination (stated by 50.3%) and other than the above (7.7%). The students' views about the period of the RW is categorized as, 4 day full time (4.5%), 3 day full time (43.9%), one week part time (45.2%) and the rest suggest other periods. There is a significant correlation between the suitable period of the RW and its rate of effect on their final thesis using a Kruskal-Wallis test (p=0.001). Therefore, those who suggest 3 and 4 day full time RW believed that the RW had the most effect on their final projects (Table 3).

The students' evaluation about the 3 or 4 day full time RW is very unsuitable (8.4%), unsuitable (31.6%), suitable (55.5%) and very suitable (3.2%); a few participants did not answer this question.

The most useful part of the RW according to the participants' views is the lectures (6.5%), the practical work (65.8%), the practical report (5.2%) and the final report (2.4%); a few students refused to answer (Table 4).

The participants introduced their most important problems during their thesis, including writing the objectives and the hypothesis (20.6%), type of the study (42%), producing tables and figures (32.9%), data analysis (13.5%), finding the coordinator (19.4%), writing introduction and literature review (11%), sample size and sampling techniques (39.4%), finding suitable variables (23.9%), references (36.8%), and finding a suitable supervisor (19.4%).

Since most of the students introduced more than one problem in their final thesis, so the percentages are calculated for each problem separately. Therefore, the sum of the problems is not 100%. According to the results, the most important problems were sampling and sampling techniques, references and producing the Tables and figures.

Discussion

It was shown that the effect of RW on the final thesis of the students was stated to be poor and very poor (24.5%), moderate (28.4%), and high and very high (45.8%). In a research, it was

Table 2. The frequency distribution of the Medical Students' opinions at the ZUMS on the effect of the different parts of the RW on their final thesis in 2004-2005

Students' view Section		Unessential	Very poor	poor	Moderate	High	Very high	Missing	Sum
Topic	N	6	17	21	40	46	21	4	155
	%	3.9	11.0	13.5	25.8	29.7	13.5	2.6	100.0
Background	N	2	16	11	63	40	21	2	155
	%	1.3	10.3	7.1	40.6	25.8	13.5	1.3	100.0
Literature Review	N	4	20	27	59	24	19	2	155
	%	2.6	12.9	17.4	38.1	15.5	12.2	1.3	100.0
Scope & Hypothesis	N	3	22	15	50	47	16	2	155
	%	1.9	14.2	9.7	32.3	30.3	10.3	1.3	100.0
Variables	N	3	23	23	51	41	12	2	155
	%	1.9	14.8	14.8	32.9	26.5	7.7	1.3	100.0
Type of Study	N	2	19	23	63	35	11	2	155
	%	1.3	12.3	14.8	40.6	22.6	7.1	1.3	100.0
Data collection	N	3	29	23	53	30	15	2	155
	%	1.9	18.7	14.8	34.2	19.4	9.7	1.3	100.0
Sampling & sample size	N	7	27	34	45	30	10	2	155
	%	4.5	17.4	21.9	29.0	19.4	6.5	1.3	100.0
Data Analysis	N	8	29	32	57	15	10	4	155
	%	5.2	18.7	20.6	36.8	9.7	6.4	2.6	100.0
Ethical Issue	N	6	15	18	56	38	20	2	155
	%	3.9	9.7	11.6	36.1	24.5	12.9	1.3	100.0
Timetable & Budget	N	10	27	34	50	21	11	2	155
	%	6.4	17.4	21.9	32.3	13.5	7.1	1.3	100.0
FinalReport	N	8	30	33	43	27	11	3	155
	%	5.2	19.4	21.3	27.7	17.4	7.1	1.9	100.0

N=Number, %=Percent

shown that the RW changed the format of the medical students' final thesis but not its quality (3). It is suggested that the thesis should be considered as an independent course without any pre-requisite. Therefore, the medical students, particularly those who believed that the RWs are not useful, can choose the thesis without passing the RW. This brings the interested students to

Table 3. The frequency distribution of the students' opinions on the period of the RW at the ZUMS and its effect rate on the students' final thesis in 2004-2005

The period of the RW The level of effect		4 day full time	3 day full time	A week part time	Others	Sum
Very poor	N %	0 0	1 1.5	14 20.3	2 20.0	17 11.1
poor	N %	2 28.6	5 7.5	12 17.4	2 20.0	21 13.7
Moderate	N %	1 14.3	20 29.9	20 20.9	3 30.0	44 28.8
High	N %	3 42.9	20 29.9	10 14.5	2 20.0	35 22.9
Very high	N %	1 14.3	21 31.3	13 18.8	1 10.0	36 23.5
Sum	N %	7 100.0	67 100.0	69 100.0	10 100.0	153* 100.0

** There was 2 missing in this table.* *N=Number, %=Percent*

Table 4. The frequency distribution of the Medical Students' opinions about the most useful sections of the RW at the ZUMS and their effects rate on their final thesis in 2004-2005

The most useful section of the RW The level of effect		Lectures	Practical work	Report	Final report	Sum
Very poor	N %	0 0	7 6.9	0 0	2 25.0	9 6.4
poor	N %	2 20.0	15 14.7	2 10.0	0 0.0	19 13.6
Moderate	N %	2 20.0	33 32.4	7 35.0	1 12.5	43 30.7
High	N %	2 20.0	21 20.6	7 35.0	4 50.0	34 24.3
Very high	N %	4 40.0	26 25.5	4 20.0	1 12.5	35 25.0
Sum	N %	10 100.0	102 100.0	20 100.0	8 100.0	140* 100.0

** There was 15 missing in this table.* *N=Number, %=Percent*

the RWs, increases its quality, and saves time and cost for both students and the university managers. Those who stated that the RW effect on their final thesis is moderate, poor or very poor, were mostly the same students who did not attend the RW actively or regularly. Their opinions normally discourage them in RW attendance.

A majority of the students believed that the RW is essential (86.5%). Similar results highlighting that the RW is essential were founded in another study (1). In a research, it was shown that the level of medical students' familiarity with research methods has a relationship with taking part in the RW or producing a final thesis. Therefore, those students who passed the RW or worked with their final thesis are most familiar with research methods (2). Also, the majority of the students agree with the RW and they mainly number believed that the familiarity with research methods is essential for writing a suitable proposal and final thesis.

The effects of the different topics of the RW on the students' final thesis were very different. The research introduction, objectives and hypothesis are stated to have the most effect on the students' final thesis. The sample size, sampling techniques, data analysis and the timetable are the topics with the least effects on their final thesis. It seems that the participants' belief, to which the introduction, objectives and hypothesis are the most important topics of the RW, is due to the importance of these topics in the students' research proposal. Also, the reason of believing some topics of the RW as the least important parts, is due to their lower importance in their research proposal, although some of these topics, especially the sample size and data analysis are of the students' major problems in collecting and analyzing the data. The revision of the RW and modification of the less applicable topics can make the RW more useful to the participants, and not wasting the time.

Over 50% of the students believed that the best time for the RW is before the pre-internship overall examination and 39.4% believed the best time is after the examination. Asking the view of the participants about the best time for performing the RW, could be useful, since the RW can take place in other time such as physiopathology period which the students are less busy with their courses. Furthermore, since the lecturers of the RW are also engaged with teaching for the university students during the academic year, it is suggested that the best time for the RW could be the time which these lecturers are free or less busy. The recommended time is either between two semesters, the last week of the year, after the second semester or before the starting of the first term. This arrangement can help avoiding the problem of overlap programs for both students and teachers.

Almost, half of the students (45%) believed that a week part time RW is more effective than the 3 or 4 day full time routine RWs. This suggestion by almost half of the participants shows that the 3 or 4 day RWs which are routine in the most universities can be boring for the participants, so they prefer part time RW. Therefore, introducing it as a part time RW or a theory-practical course can probably be more useful. The results also show that the participants, who suggested the part time RWs, are those who believed that the 3 or 4 day full time RWs have less effect on their final thesis. Since 38.1% of the participants believe that combination of the course of Health4 and the RW as a unique course is the best choice, it is suggested to investigate this suggestion to see if it is more effective for the students and more applicable for the educational managers. This was suggested in another study which the researcher introduced some necessary courses for the medical students about research methods and producing scientific papers (4). In this study, almost 40% of the participants disagreed with the routine RWs and believed they are unsuitable. Those who believed that the routine RWs are unsuitable or very unsuitable are interested in part time or a week long RWs.

The participants mentioned that the practical sections of the RWs are the most effective parts (65.8%). This suggests increasing the RW practical section times, using the experienced teachers. Also, if the RW time is limited, it is better to reduce the time of the lectures or the

reports, but not the practical sections. To encourage the participants to be more active during the RWs, it is essential to emphasize on the usefulness of the RW, especially the practical sections. The other encouragement can be consisted of stopping the other courses (on call, Rounds, etc.) during the RWs, asking a proposal from different groups of the participants about the RW educations, giving the RW certificate only to those who prepare the proposal, and providing good facilities (place, food, refreshment, etc.) during the RWs. These actions can encourage the participant to take part in RWs more actively. Also, the results showed that 46.1% of the participants, who believed that the practical sections of the RWs are the most effective sections for them, declare that the level of effects of the RW for them was high and very high.

The students' problems during preparing the final thesis are quite different. The major problems in performing the final thesis were: sampling techniques and the sample size (61 out of 155 students), writing the references (57 out of 155), and producing tables and figures (51 out of 155). There are other problems such as, introduction, literature review, type of research during performing the students' thesis. The problems in writing the literature review are similar to another study (5). The above aspects show that these problems should be considered in organizing the future RWs, or choosing a consultant for the entire thesis should be compulsory. In the present study, it was found that only 47.5% of the participants had consultants. In a study carried out by Khalili and colleague this number was only 42.5% (6).

Asking the view of the participants about the RWs topics and their importance and applications can help the planning managers to introduce better RWs. Also, learning the methods of drawing tables and figures using suitable software and a separate RW can help the students in producing a better thesis.

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