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Original Article

Challenges and strategies for the promotion of research in Tabriz University of Medical Sciences, Iran: The analysis of stakeholders' views

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Abstract

Introduction: The intention of this study was to identifying and prioritizing challenges in research in Tabriz University of Medical Sciences (TUMS), Iran, and giving exact solutions to remove those challenges from the perspective of stakeholders (the members of faculty board, students, administrators, and research staff of the university).

Methods: This mix-method study (quantitative-qualitative) conducted in summer-2014 in TUMS. The participants of this study included 139 of the members of faculty board, 349 of the students, and 39 of administrators and research staff (in total, 525 individuals). The data collection tool in the qualitative section was an open-ended questionnaires (3 questions), and in the quantitative section it consists close question questionnaires (26 questions). For prioritizing these challenges, it was used by prioritization matrix that it had four criteria: Importance, the ability to solve, cost-effectiveness and immediacy.

Results: The important challenges from the perspective of participant included: Lack of co-operations of administrative centers with researchers, the existence of cumbersome rules, lack of motivation in researchers from authorities, being non-economic of doing a research to the professors and students, The lack of research result in decision-making, the low capacity and ability of members of faculty board, students, and staff on issues related to research procedures, and lack of attention to the quality of research.

Conclusion: Lack of attention to the quality of research, and the existence of cumbersome rules in research area have the most priority in challenging research in TUMS, which they need more attention and planning to resolve these challenges of the authorities and managers of this university.

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Introduction

Trying to find the truth was one of the instinctive needs of mankind. The humans and human societies were encountered with lots of problems, during the course of life and evolution and many questions and uncertainties arise in their minds. Natural tendency of mankind to find suitable answers to these questions makes him to search and have a more activity, to solve his inherent exploring needs by a more awareness and knowledge.[1]

The research was one of the fundamental and major parts in the development of human societies, in a way that, no other scientific and rational movement without any research support, was not possible.[2] In the study of economics, research could be seen as an activity of absolute necessity, justified, and with positive return, because it was the basis of innovation, has the planning of change, and development of equipment and means of production.[3]

Currently, the health care providers have accepted to establish their special actions and their own decisions on the basis of their qualifications, and by this way, they show the suitability and effectiveness of their actions.[4] Dealing with human health, high-speed production of science, and the need to be up to date for health service providers makes the importance of research two-fold in this area. Therefore, doing basic and effective applied research in this area has the most priority for every country.[5,6] Hence, in this regard, it must be used from all the capacities and capabilities of the country.

The results of the literature review and previous studies show us that in the field of research, especially in medical science research in some developing countries, there were always challenges and problems. The results from the investigations of Hefferin et al. showed us that, the main challenges in the field of research were some items included lack of usage from the results of the research, too busy working, problems in statistical analysis, lack of support for research activities, lack of time and money, and lack of adequate incentives to researchers.[7]

The results from the investigations of Guelich et al.[8] and Curtis et al.[9] showed us that despite the growing number of research centers, but the number of researchers in the field of medical science has shown little increase. Researchers have concluded that income and clinical activities in the field of medical science could further be a factor for lack of an interest in research activities among members of faculty board and students. The results of the literature review revealed challenges in medical sciences in Iran, in which important challenges in this regard were lack of time and too much work of researchers, cumbersome rules, lack of facilities and equipment, any of creating motivation in researchers, non-economic feasibility studies for professors and students, the lack of usage in research results in decision-making, little knowledge among members of faculty board, students and staffs on issues of research.[10-31]

Recently, Tabriz University of Medical Sciences (TUMS) as one the best and largest universities of medical sciences in Iran, has had always an important role in medical and scientific research and in the production of science. Therefore, the purpose of this study was to evaluate the challenges in the course of investigation in TUMS and giving practical and appropriate solutions from the perspective of the members of faculty board, students, administrators and research staff of the university.

Methods

This mix-method study (quantitative-qualitative) conducted in summer-2014 in TUMS. First, to accomplish this goal using the review and comments of professors and experts in the field of challenges in medical sciences, the questionnaire was designed with open questions which include three questions as follows:

- Organizational challenges of doing research at TUMS
- Individual challenges of doing research at TUMS
- Suggestions and practical solutions to address research challenges at TUMS.

The participants of this part of research were formed by the members of faculty board, students, administrators and research staff of the university. These people were selected because of their experience, knowledge, high and rich information in research areas. For selecting these people, we used purposive sampling model. In this model, the people who have the greatest and richest information and experiences, and whom that could define their information and experiences in an appropriate way, and make that information handy to researchers, were selected.[32]

In this research, the sampling continued until data saturation, as far as to the extent that the researchers find and observe that by continuing the sampling model, no new information was available, and the previous information were repeated.[33] Data saturation model in this research was obtained by the participation of 43 people of members of faculty board, 35 people of students, 15 people of managers, administrators and research staff (in total, 93 participants).

In this level, to analyze the data, we used content analysis method manually. Content analysis was the qualitative approach to determine the content of the data. Themes, areas of the interest, and models were related to research, that have the features of repetition and using some encryptions. For analyzing the data, notes became in order, complete, and organized and the connection between them has been discovered and shown, and at last all the information were collected and reviewed frequently. Then, all the information and data were gathered and encoded again (in a way that all the codes that represent the same concept were put in a bunch). Encryption was a method that by using them, all the data that were collected were converted to signals for analysis.[34]

For consistency of the data (Rigor), we used the reviews of the colleagues and immersion of the data (immersed), that were the methods of creating consistency.[35] To comply with ethical issues in the study, the participants were informed by their satisfaction prior to delivery of the questionnaire, and individuals to participate in the study were completely free. Moreover, objectives of the study were explained to the participants.

In the second stage, by using the results of the qualitative study and by studying similar questionnaire, the questionnaire was designed with closed questions, that it included 3 questions in the area of demographic data, and 26 questions in the area of challenges, (20 questions of organizational challenges, and 6 questions of individual challenges). The validity of the questionnaires has improved by the comments of the members of faculty board and research staff of the university. Reliability of the questionnaire was evaluated using test and retest method by participating 30 people, and good reliability was assessed ($\alpha = 0.9$).

The Morgan diagram was used to determine the sample size that according to statistical population, the sample size was calculated to 360 people, in which for increasing the strength of the research, and reducing the impact of sample loss, 20% were added to the sample size and finally, the sample size of 432 people was calculated for the quantitative study. Then by using the stage sampling method, the sample size was divided into three groups of participants of this study (96 professors, 314 students, 22 managers and universities' staff).

The next step is to prioritize challenges, challenges from the perspective of the expert in the field of research at TUMS, (research assistants of faculties, the headquarters of research centers, the dignitaries in research field) by using the important indicators (To what extent it was important to overcome this problem, or was it necessary, and shall we act to fix it?), the ability to improve it (What was the ease and feasibility of solving this problem? Could we fix this problem simply?), the cost-effectiveness (To what extent solving this problem would be helpful, and what a useful result it will have?), urgency, (What an urgent advantage it will have to solve these problems, and do we need to fix it immediately, or there in no emergency need for resolving those problems?).

Data obtained of this research were used by descriptive statistics method, [frequency, percentage, mean and standard deviation (SD)]

the whole were examined by SPSS software (version 16, SPSS Inc., Chicago, IL, USA).

Results

The gathered results from the encoding responses of participants in qualitative stage (qualitative questionnaire) have been shown in the two areas of organizational challenges and personal challenges of the research according to table 1.

In the quantitative stage of this research, by using the results of qualitative stage, review of literature, opinions of experts was designed in the field of quantitative research questionnaire, and again with a greater sample size, the research was completed by the attitudes of the members of faculty board, students, administrators and research staff of the university. The results of this stage in this research were shown in tables 2-4.

As it could be considered from table 2, from the perspective of the members of faculty board, the most important research challenges in TUMS include: the effect less of research results in decision making among managers, the lack of using research results, lack of attention to the quality of research, parallelism and the repetition of similar studies, the length of approvals in procedures of research project, lack of time, the full-time work, and lack of financial support in time for the implementation of research project.

Table 1. Research challenges in Tabriz University of Medical Sciences (TUMS) from the viewpoints of the faculty, students, research staff and managers

Main them	Sub-theme
Organizational challenges in performing of researches	Faculty of members
	Lack of co-operations of administrative centers with researchers
	Existence of cumbersome rules
	Lack of financial support in time for the implementation of research project
	Lack of necessary facilities and equipment
	Parallelism and the repetition of similar studies
	Multiplicity of decision centers
	Lack of communication of research centers with local and foreign researchers
	Low revenue from research activities
	Students
	Lack of research priorities of educational groups
	Lack of motivation in researchers from authorities
	Unavailability of the advisers in the research
	Low of budget of research projects
	Lack of cooperation of health centers, particularly hospitals, with researchers
	Low revenue from research activities
	Managers and research staff
	Existence of cumbersome rules
	Effect less of research results in decision making among managers/lack of research results
	Unavailability to useful databases
	Faculty of members
	Lack of time and the full-time work
	No need for performing of research with faculty members and students
	Personalizing of research
Individual challenges in performing of researches	Students
	Not being familiar enough with the principles of research methodology and statistical methods
	Lack of sufficient proficiency in other languages, especially English
	Forcing for usage from a specific methodology and framework
	Lack of professors' support from students in research projects
	Managers and research staff
	Lack of time and the full-time work
	Lack of professors' support from students in research projects

As it could be considered from table 3, from the perspective of the students, the most important research challenges in TUMS include: low budget of research projects, force of using a specific methodology and framework, the unavailability of the advisers in the research, lack of motivation by officials in researchers especially among students, the effect less of research results in decision making among managers, the lack of using research results, lack of education and attention to the study of research from the lower sections, low revenue from research activities.

Table 2. Research challenges in Tabriz University of Medical Sciences (TUMS) from the viewpoints of the faculty members

Research challenges	Totally agree	Agree	Disagree	Totally disagree	Mean ± SD
	n (%)	n (%)	n (%)	n (%)	
Lack of co-operations of administrative centers with researchers	21 (23.9)	40 (45.5)	27 (30.7)	0 (0)	2.06 ± 0.73
Lack of cooperation of health centers, particularly hospitals, with researchers	16 (18.2)	43 (48.9)	28 (31.8)	1 (1.1)	2.15 ± 0.72
Existence of cumbersome rules	26 (29.5)	42 (47.7)	20 (22.7)	0 (0)	1.93 ± 0.72
not being familiar enough with the principles of research methodology and statistical methods	12 (13.6)	4 (53.4)	28 (318)	1 (1.1)	2.20 ± 0.68
Low revenue from research activities	32 (36.4)	33 (37.5)	23 (26.1)	0 (0)	1.89 ± 0.78
Lack of time and the full-time work	42 (47.7)	30 (34.1)	15 (17.0)	1 (1.1)	1.71 ± 0.78
Low of budget of research projects	28 (31.8)	37 (42.0)	23 (26.1)	0 (0)	1.94 ± 0.76
Unavailability to useful databases	22 (25.0)	41 (46.6)	18 (20.5)	7 (8.0)	2.11 ± 0.87
Lack of financial support in time for the implementation of research project	30 (34.1)	46 (52.3)	12 (13.6)	0 (0)	1.79 ± 0.66
Effect less of research results in decision making among managers/lack of using research results	54 (61.4)	30 (34.1)	4 (4.5)	0 (0)	1.43 ± 0.58
Lack of necessary facilities and equipment	21 (23.9)	38 (43.2)	28 (31.8)	1 (1.1)	2.10 ± 0.77
Lack of research priorities educational groups	16 (18.2)	27 (30.7)	355 (39.8)	10 (11.4)	2.44 ± 0.92
lack of motivation in researchers from authorities	20 (227.7)	46 (53.2)	21 (23.9)	1 (1.1)	2.03 ± 0.71
Unavailability of the advisers in the research	14 (15.9)	42 (47.7)	31 (35.2)	1 (1.1)	2.21 ± 0.71
Lack of sufficient proficiency in other languages, especially English	21 (23.9)	47 (53.4)	20 (22.7)	0 (0)	1.98 ± 0.68
Low revenue from research activities	25 (28.4)	46 (52.3)	17 (19.3)	0 (0)	1.90 ± 0.68
Parallelism and the repetition of similar studies	38 (43.2)	43 (48.9)	7 (8.0)	0 (0)	1.64 ± 0.62
Length of approvals in procedures of research project	39 (44.3)	40 (45.5)	9 (10.0)	0 (0)	1.65 ± 0.65
No need for performing of research with faculty members and students	12 (13.6)	33 (37.5)	37 (42.0)	6 (6.8)	2.42 ± 0.81
Lack of professors' support from students in research projects	5 (5.7)	27 (30.7)	51 (58.0)	5 (5.7)	2.63 ± 0.68
Multiplicity of decision centers	19 (21.6)	45 (51.1)	23 (26.1)	1 (1.1)	2.06 ± 0.72
lack of education and attention to the study of research from the lower sections	27 (30.7)	44 (50.0)	13 (14.8)	4 (4.5)	1.93 ± 0.79
Personalizing of research	26 (29.5)	48 (54.5)	13 (14.8)	1 (1.1)	1.87 ± 0.69
Lack of attention to the quality of research	49 (55.7)	36 (40.9)	3 (3.4)	0 (0)	1.47 ± 0.56
Forcing for usage from a specific methodology and framework	11 (12.5)	33 (37.5)	40 (45.5)	4 (4.5)	2.42 ± 0.76
Lack of communication of research centers with local and foreign researchers	33 (37.5)	39 (44.3)	14 (15.9)	2 (2.3)	1.82 ± 0.77

SD: Standard deviation

Table 3. Research challenges in Tabriz University of Medical Sciences (TUMS) from the viewpoints of the student

Research challenges	Totally agree	Agree	Disagree	Totally disagree	Mean ± SD
	n (%)	n (%)	n (%)	n (%)	
Lack of co-operations of administrative centers with researchers	179 (58.3)	94 (30.6)	33 (10.7)	0 (0)	2.06 ± 0.73
Lack of cooperation of health centers, particularly hospitals, with researchers	136 (44.3)	113 (36.8)	56 (18.2)	1 (0.3)	2.15 ± 0.72
Existence of cumbersome rules	122 (39.7)	129 (42.0)	55 (17.9)	0 (0)	1.93 ± 0.72
Not being familiar enough with the principles of research methodology and statistical methods	102 (33.2)	187 (60.9)	15 (4.9)	2 (0.7)	2.20 ± 0.68
Low revenue from research activities	135 (44.0)	156 (50.8)	14 (4.6)	1 (0.3)	1.89 ± 0.78
Lack of time and the full-time work	106 (34.5)	169 (55.0)	23 (7.5)	8 (2.6)	1.71 ± 0.78
Low of budget of research projects	141 (45.9)	153 (49.8)	12 (3.9)	0 (0)	1.57 ± 0.56
Unavailability to useful databases	109 (35.5)	124 (40.4)	71 (23.1)	2 (0.7)	1.88 ± 0.77
Lack of financial support in time for the implementation of research project	118 (38.4)	154 (50.2)	34 (11.1)	0 (0)	1.72 ± 0.65
Effect less of research results in decision making among managers/lack of using research results	126 (41.0)	165 (53.7)	14 (4.6)	0 (0)	1.63 ± 0.57
Lack of necessary facilities and equipment	104 (33.9)	141 (45.9)	60 (19.5)	1 (0.3)	1.86 ± 0.72
Lack of research priorities educational groups	84 (27.4)	149 (48.5)	71 (23.1)	2 (0.7)	1.97 ± 0.73
lack of motivation in researchers from authorities	134 (43.6)	155 (50.5)	16 (5.2)	1 (0.3)	1.62 ± 0.60
Unavailability of the advisers in the research	145 (47.2)	140 (45.6)	19 (6.2)	2 (0.7)	1.60 ± 0.63
Lack of sufficient proficiency in other languages, especially English	123 (40.1)	169 (55.0)	12 (3.9)	2 (0.7)	1.65 ± 0.58
Low revenue from research activities	124 (40.4)	151 (49.2)	29 (9.4)	2 (0.7)	1.70 ± 0.66
Parallelism and the repetition of similar studies	1.4 (33.9)	154 (50.2)	46 (15.0)	2 (0.7)	1.82 ± 0.69
Length of approvals in procedures of research project	124 (40.4)	170 (55.4)	12 (3.9)	0 (0)	1.78 ± 0.63
No need for performing of research with faculty members and students	111 (36.2)	148 (48.2)	44 (14.3)	3 (10.0)	1.80 ± 0.71
Lack of professors' support from students in research projects	129 (42.0)	139 (45.3)	36 (11.7)	2 (0.7)	1.70 ± 0.69
Multiplicity of decision centers	122 (39.7)	149 (38.5)	34 (11.1)	1 (0.3)	1.71 ± 0.66
Lack of education and attention to the study of research from the lower sections	124 (40.4)	163 (53.1)	15 (4.9)	3 (10.0)	1.66 ± 0.61
Personalizing of research	108 (35.2)	156 (50.8)	38 (12.4)	4 (1.3)	1.79 ± 0.69
Lack of attention to the quality of research	102 (33.2)	174 (56.7)	30 (9.8)	0 (0)	1.76 ± 0.61
Forcing for usage from a specific methodology and framework	114 (37.1)	154 (50.2)	35 (11.4)	3 (10.0)	1.55 ± 0.59
Lack of communication of research centers with local and foreign researchers	152 (49.5)	138 (45.5)	16 (5.2)	0 (0)	1.76 ± 0.68

SD: Standard deviation

As it could be considered from the table 4, from the perspective of managers and research staff, the most important research challenges in TUMS include: lack of attention to the quality of research, lack of education, and attention to the study of research from the lower sections, the effect less of research results in decision making among managers, the lack of using research results, parallelism and the repetition of similar studies.

The important proposed solutions for the elimination of research challenges from the

attitudes of the members of faculty board, students, administrators and research staff at the TUMS were shown in table 5.

The results of prioritizing the most important research challenges from the attitudes of the members of faculty board, students, administrators, and research staff at the TUMS were shown in table 6.

Table 4. Research challenges in Tabriz University of Medical Sciences (TUMS) from the viewpoints of the research managers' and staff's

Research challenges	Totally agree	Agree	Disagree	Totally disagree	Mean ± SD
	n (%)	n (%)	n (%)	n (%)	
Lack of co-operations of administrative centers with researchers	3 (15.0)	6 (30.0)	9 (45.0)	2 (10.0)	2.50 ± 0.88
Lack of cooperation of health centers, particularly hospitals, with researchers	2 (10.0)	10 (50.0)	7 (35.0)	1 (5.0)	2.35 ± 0.74
Existence of cumbersome rules	5 (25.0)	11 (55.0)	2 (10.0)	2 (10.0)	2.05 ± 0.88
Not being familiar enough with the principles of research methodology and statistical methods	5 (25.0)	8 (40.0)	6 (30.0)	1 (5.0)	2.15 ± 0.87
Low revenue from research activities	1 (5.0)	11 (55.0)	3 (15.0)	5 (25.0)	2.60 ± 0.94
Lack of time and the full-time work	3 (15.0)	9 (45.0)	5 (25.0)	3 (15.0)	2.40 ± 0.94
Low of budget of research projects	1 (5.0)	11 (55.0)	5 (25.0)	3 (15.0)	2.50 ± 0.82
Unavailability to useful databases	4 (20.0)	7 (35.0)	6 (30.0)	3 (15.0)	2.40 ± 0.99
Lack of financial support in time for the implementation of research project	6 (30.0)	8 (40.0)	3 (15.0)	3 (15.0)	2.15 ± 1.03
Effect less of research results in decision making among managers/lack of using research results	9 (45.0)	7 (35.0)	4 (20.0)	0 (0)	1.75 ± 0.78
Lack of necessary facilities and equipment	5 (25.0)	9 (45.0)	5 (25.0)	1 (5.0)	2.10 ± 0.85
Lack of research priorities educational groups	7 (35.0)	7 (35.0)	5 (25.0)	1 (5.0)	2.0 ± 0.91
Lack of motivation in researchers from authorities	6 (30.0)	10 (50.0)	3 (15.0)	1 (5.0)	1.95 ± 0.85
Unavailability of the advisers in the research	4 (20.0)	7 (35.0)	5 (25.0)	4 (20.0)	2.45 ± 1.05
Lack of sufficient proficiency in other languages, especially English	(30.0)	11 (55.0)	3 (15.0)	0 (0)	1.85 ± 0.67
Low revenue from research activities	4 (20.0)	11 (55.0)	5 (25.0)	0 (0)	2.05 ± 0.68
Parallelism and the repetition of similar studies	5 (25.0)	13 (65.0)	2 (10.0)	0 (0)	1.85 ± 0.58
Length of approvals in procedures of research project	7 (35.0)	10 (50.0)	3 (15.0)	0 (0)	1.80 ± 0.69
No need for performing of research with faculty members and students	4 (20.0)	6 (30.0)	8 (40.0)	2 (10.0)	2.40 ± 0.94
Lack of professors' support from students in research projects	3 (15.0)	7 (35.0)	9 (45.0)	1 (5.0)	2.40 ± 0.82
Multiplicity of decision centers	5 (25.0)	12 (60.0)	2 (10.0)	1 (5.0)	1.95 ± 0.75
Lack of education and attention to the study of research from the lower sections	10 (50.0)	8 (40.0)	1 (5.0)	1 (5.0)	1.65 ± 0.81
Personalizing of research	6 (30.0)	12 (60.0)	2 (10.0)	0 (0)	1.80 ± 0.61
Lack of attention to the quality of research	13 (65.0)	6 (30.0)	1 (5.0)	0 (0)	1.40 ± 0.59
Forcing for usage from a specific methodology and framework	7 (35.0)	6 (30.0)	6 (30.0)	1 (5.0)	2.05 ± 0.94
Lack of communication of research centers with local and foreign researchers	5 (25.0)	9 (45.0)	5 (25.0)	1 (5.0)	2.10 ± 0.85

SD: Standard deviation

Table 5. Suggested solutions to eliminate the research challenges in Tabriz University of Medical Sciences (TUMS) by the faculty members, students, managers and research staff

Participants	Solutions
Faculty of members	Elimination of cumbersome rules
	Creating of motivation in staff and students
	Attention to quality of research
	Promoting of morale of teamwork
	Identifying and prioritizing of university research issues
	Using the results of research work to solve the problems of society and production of science
	Dedicating of research work
	Activating of similar units RDCC for all faculties
Students	Facilitating of accessibility of researchers to required data
	Involving and engaging of students in the lower grades in research work
	Timely payment of required fees
	Forming of the research student scores of and support them
Managers and research staff	Creating of positive viewpoint and attitude toward of improvement of research systems
	Selecting of managers and administrators based on their competencies and capabilities
	Stability of management

RDCC: Research Development Coordinating Committee

Table 6. The prioritizing matrix of the main research challenges in Tabriz University of Medical Sciences (TUMS) mentioned by faculty members, students, managers and research staff

Challenges	Criteria and their score				Total score
	Importance*	Improvability**	Cost-effectiveness***	Urgency†	
	Score from 1 to 4††	Score from 1 to 4	Score from 1 to 4	Score from 1 to 4	
Lack of co-operations of administrative centers with researchers	5	5	4	4	18
Lack of communication of research centers with local and foreign researchers	4	3	4	2	13
Affectless of research results in decision making among managers	5	5	4	3	17
Lack of using research results	5	5	5	4	18
Low of budget of research projects	4	5	4	2	15
Length of approvals in procedures of research project	3	5	4	4	16
Low revenue from research activities	5	5	4	3	17
Parallelism and the repetition of similar studies	5	5	5	4	19
Existence of cumbersome rules	4	4	5	4	17
Lack of motivation in researchers from authorities	4	4	3	3	14
Unavailability of the advisers in the research	5	5	5	4	19
Lack of attention to the quality of research	4	3	4	1	12
Lack of sufficient proficiency in other languages, especially English	5	5	5	3	18

*Solving of this barrier how much is important or necessary and we must act to fix it?; **Solving of this barrier how much is easy and feasible?; ***Solving of this barrier how much is economical?; †Solving of this barrier how much is emergencies? And is there urgency to fix it?; ††1 (low priority) → 4 (high priority)

As it could be considered from the table 6, from the perspective of managers and research staff, the most important research challenges in TUMS include: lack of attention to the quality of research, cumbersome regulations, lack of administrative co-operation with researchers, low budget of research projects, being not familiar enough with the principles of research methodology and statistical methods, the effect less of research results in decision making among managers, the lack of using research results, parallelism and the repetition of similar studies, lack of motivation by officials in researchers, particularly students.

Discussion

The results showed us that, lack of co-operation with researchers by administrative, and the existence of cumbersome rules, were the most important challenges in TUMS. These two issues were identified as of the most important research challenges in many similar previous studies.[36-41]

One of the main important reasons of lack of co-operation with researchers by administrative could be as the existence of cumbersome rules. So by deleting or changing some of the cumbersome rules, perhaps we could enhance the rate of co-operation of administrative with researchers. Furthermore, one of the other reasons of lack of co-operation with researchers by administrative could be negative attitudes of staff and managers of administrative units, because as well as the proposals have been presented, during data collection in this study, it considered that many of the employees and managers of the administrative had a negative attitude and point of view to research, and they mentioned that it was worthless and luxury. Changing laws and attitudes of managers and employees need the correct and principled management in this area, that by using these correct method of management, do all the rules successfully.

In this way, in addition, to have the skills and ability of management in individuals, and to officials who want to remove these challenges, having strong commitment and a positive attitude in these people was necessary and inevitable, that unfortunately sometimes the neglect of these vital rules could be raised.

One of the most challenging points from the view of faculty board, students and staff was lack of time and busy working of people, that reasons such as the high number of educational courses, having the responsibilities in execution of work, family, and society could justify this lack of time and busy working of people. The results of research by Whelan and Markless[42] in London, that have assessed the research challenges in qualitative way from the perspective of faculty members, showed us that the lack of time and busy working of people was one of the most important challenges in research fulfillment.

Furthermore, the results of other similar studies expressed us that lack of time and busy working of people was one of the major research challenges.[43,44] Since as it could be seen that some parts of the problem of lack of time could be the lack of skills of time management among individuals, you could partly solved the problem of lack of time, by learning time management principles to these people. One could also diminish the occupation issues of individuals, by enhancing human resources and the division of labor among people and provide the opportunity for people to do research work. In this regard, the results of research by Ghojazadeh et al.[45] in Tabriz, that by training the students in the area of research, the role of faculty fellowship was given to them, has tried by this research that with the help of professors in some cases, the workload of professors got reduced, and professors have a more time on important research work and education issues, and they could increase their quality of work. This issue could also be of the interest to the authorities and policymakers.

Lack of motivation of faculty members and students for research work was one of the most challenging points of view of the participants in this study. The reason for this

lack of motivation could be a shortage of revenues in research activities. The attraction of most activities could be the more educational and clinical activities, the difficulty and sensitivity of research. In this regard, the results of studies by Guelich et al.[8] and Curtis et al.[9] showed us that, despite the growing number of research centers, but the number of researchers in the field of medical science has shown little increase. Researchers have concluded that income and appeal of the more clinical activities in the field of medical sciences could be a factor of lack of interest among members of faculty board and students to research activities.

The results of some other studies had confirmed the adverse impact of clinical research activities.[46,47] In this regard, in the United States of America, it was tried to merge the research with clinical practice, that means, more research have taken place in clinical practice by clinicians and people working in these sectors.[4] However in Iran, lots of research work was done away from clinical sectors by faculty members in academic and training environments. Hence, by the policy of integration between clinical and research activities, we could rather fix this problem. Moreover by increasing the research fees of researchers, and showing the attractiveness of research activities, we could provide the favorable basis for research activities.

Lack of funds for research, and low fees of research activities for researchers were noted as the main challenges from the perspective of the participants that have the compatibility by the results of previous studies carried out in this area.[48,49] Finance and funding and facilities for the effective and proper investigation were necessary and inevitable. In the field of medical science, the most of studies were experimental and interventional and require laboratory instruments and materials, laboratory animals and volunteers in experimental studies that were very expensive and costly. To increase financial resources in research basis and making the research attractive to people, the reasonable relationship of research by industry, and making the research results applicable, could have a significant impact.[50-56] Because of reasonable communication with industry and appropriate transfer of knowledge while removing obstacles to the use of research results; it could remove the difficulties of the budget deficit, and low revenue from research work to the researchers.

One of the major challenges that it has been mentioned in studies repeatedly was the lack of individual skills in the field of research methods. Among the most important of these skills, we could mention to how to choose a subject for study, statistical analysis, lack of proficiency and fluency to other languages, and the way of searching the sources. The results of Hamilton[57] research also showed us that, poor interpersonal skills with people were the major challenges in the field of research. Results of previous studies done in this area reported similar results.[58,59] Hence, it seems that, the disposal of workshops, developing special training courses for research activities, training professional individuals to specialize in research activities, the recruitment and use of proficient and fluent individuals to other languages in universities, and providing appropriate resources for research in this way could increase the skills and capabilities of individuals and could be effective in solving the problems in this area.

One of the main challenges that were extracted from the perspective of the participants was the lack of attention to the quality of the research. Unlike other challenges, in the past similar studies it has not been mentioned about this challenge. This could be concern and warning to officials of TUMS that it was not mentioned in other universities, but just it mentioned in this university. The reason for this could be due to the quantity of articles and research projects in evaluating the performance, that it must be cared to the quality of research designs instead of their quantity by changing the attitudes and criteria of assessment.

The challenges referred to in this text were divided into two main categories: Challenges of individual and organizational challenges.

By inspecting the contexts and the results of studies that has been done, we could deduce that despite the impact of both individual and organizational challenges in research, it seems to be that organizational challenges have a more negative impact than individual challenges. In one of the research of Karimi et al.[19] in Zahedan University of Medical Sciences, Iran, the members of faculty board had declared that individual challenges have not too much impact on the research, and they described the organizational challenges very important. In this way, Royle et al.,[60] in Canada have the belief that organizational challenges have the greater impact compared with individual challenges in lack of doing effective research.

Other studies have also noted the importance of organizational challenges rather than individual challenges.[61] Hence probably focusing more on the organizational challenges to remove the challenges involved in research and have more impact and better results. Because some of the individual challenges could affect from their organizational challenges, and in this case, by removing the organizational challenges, we could diminish the individual challenges to some extent.

One of the main limitations of this study was the limitation of the applicability of the results to TUMS. At last, the practical and applied proposal that could be offered to the authorities and policymakers in the field of study in TUMS was that this study has proceeded only for identifying and prioritizing the most important challenges of research at this university.

Conclusion

The most important research challenges in TUMS from the perspective of the members of faculty board, students, administrators, and research staff of the university were: lack of attention to the quality of research, the cumbersome rules, lack of administrative co-operation with researchers, the low of budget of research projects, not being familiar enough with the principles of research methodology and statistical methods, the effect less of research results in managers decision-making, the lack of using research results, parallelism and the repetition of the same studies, lack of motivation by officials in researchers, particularly students.

Conflict of Interests

Authors have no conflict of interest.

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