

A REVIEW OF BARRIERS TO RESEARCH IN UNIVERSITIES OF MEDICAL SCIENCES IN IRAN

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ABSTRACT: Universities have two main roles: education and research. There must be an interaction and balance between these two roles so that the university can progress. It is of great importance to study the research obstacles in all fields of study. The researchers in these fields have the responsibility of understanding these obstacles. This survey was conducted in 2014. A search was conducted in available scientific databases in Iran such as SID, IranMedex, Medlib, Google Scholar and Pubmed. The following keywords were used in the searching process: professor, professors, faculty, student, students, nurse, obstetrician, employee, medicine, medical sciences, research, study, research project, obstacles, deterrent and Iran. 34 papers were found, six of which were eliminated in the end. Organizational barriers had the most impact on professors' reluctance toward research. Among the students, nurses and obstetricians, both organizational and personal issues played a role. Although, in this limited research, organizational factors were more dominant. There is a need for more research on this topic in other universities of the country as well, without the restrictions of the previous studies.

Keywords: Research; Barriers; Academic Medical Centers; Iran

INTRODUCTION

Universities have two main roles: education and research. The educational role is more involved in consuming science rather than producing it. On the other hand, the research task is generally in pursuit of producing science and the required information and solving the problems in the society. Universities, as the most important research centers in every country, play a major role in the progress of research in a country. The desired development can be achieved through research in accordance with the requirements of the society. Thus, there must be an interaction and balance between these two roles so that the university can progress (1) (2).

One of the problems in the research system of our country is a lack of correspondence between research activities of the professors and their other activities, especially the educational ones (3). The more the faculty members from various scientific areas in a country can provide their services with better quality, the faster that country will progress and develop (1). In Iran there are no faculty members and professors assigned exclusively to education or research and the research activities of faculty members are

overwhelmed by their educational activities, causing a decrease in the amount of such activities (4).

In different studies in Iran, academic ability of the professors and having access to research facilities are mentioned as factors influencing the students' inclination for research (5).

Some studies point out the increase in the amount of paper submission and science production of the professors and the universities in Iran in various reputable journals during the past years. (6) (7) Iran had the largest growth in science production in the world in 2012 and in total, it ranked 17th in science production (8). However, there are still numerous organizational or personal restrictions in the research in Iran. (9) (10) (11) (12)

It is of great importance to study the research obstacles in all fields of study. Researchers are required to use their and other researchers' experiences to uncover the weaknesses and shortcomings of their field of study and help with its progress (13). Many obstacles are known to have caused the lack of research in some of the universities of the country. In general, they fall into two categories: organizational and personal barriers (14).

In other countries, the studies mention many reasons for lack of research among the faculty such as lack of time, professional occupations, low income, unfamiliarity with statistical methods, small financial support, limited access to workshops and etc. (15)

This paper illustrates the study conducted in Iran on faculty member and students' reluctance to do research.

Research Methods

This survey was conducted in 2014. A search was conducted in available scientific databases in Iran such as SID, IranMedex, Medlib, Google Scholar and Pubmed. The following keywords were used in the searching process: professor, professors, faculty, student, students, nurse, obstetrician, employee, medicine, medical sciences, research, study, research project, obstacles, deterrent and Iran. The studies included in this survey were conducted between 2001 and 2014. All of the studies that discussed research obstacles in medical science universities (professors, students, staff and students) were included in the survey. The studies with no specific results or only general results were eliminated from the survey. At first, 34 papers were included, six of which were eliminated in the end. The studies had used questionnaires for data collection.

1- Professors

Mohsen Rezaeiyan et al. conducted a study in Rafsanjan University of Medical Sciences and concluded that organizational and administrative factors played the most important role in doing or not doing research. Personal issues (lack of time, having many occupations, feeling indifferent about research) ranked next. The professors of this university suggested removing the administrative obstacles in order to encourage research (11).

Monireh Sereshti et al. conducted a study in Shahrekord University among the professors and the staff and concluded that personal issues such as not motivating the researchers, lack of time, having many occupations, cumbersome administrative requirements, not applying research results, inability to translate Persian papers into other languages had the highest impact. Inability to use computers and uselessness of the research for the patients were considered to have the least impact. In general, the impact of organizational barriers were higher than individual ones (16).

Mehralizade et al. studied the attitude of the professors of Semnan University of Medical Sciences toward research and student research. They defined low material worth of research, high teaching hours, working in personal offices, having managerial jobs, long administrative procedures of research and not allocating the budget on time as the most important detected obstacles in student research, in decreasing order (17).

In Lorestan University of Medical Sciences, Badrizadeh et al. concluded that among individual factors, lack of time due to heavy teaching load and social and executive responsibilities prevented research the most. Lack of skill in writing paper and editing proposal causes the least prevention. Among organizational factors, the following have the highest impact: strictness in granting approval to the projects the researcher is interested in and cumbersome administrative requirements, long procedure of granting approvals to research projects and not enough privileges for researchers. The problems regarding statistical result extraction, moral restrictions of research and requiring the researcher to apply a specific method and framework have the least impact (18).

Alamdari et al. studied research obstacles in the universities of Yasooj. The professors of the University of Medical Sciences composed 55.2% of the participants of this research. Among personal factors, lack of time and having many occupations had the most impact and indifference toward research had the least impact. Among organizational and administrative factors, lack of required facilities and equipment and cumbersome administrative requirements on doing research had the most impact and moral barriers and having access to sample had the least impact. In general, the impact of organizational obstacles were higher than individual and personal ones (19).

In Urmia University of Medical Sciences, Salemsafy et al. concluded that organizational obstacles prevented researching more than personal ones. Among personal research obstacles, higher priority of treatment of patients compared to research, lack of time, heavy teaching load and lack of research skill had the most impact and lack of English knowledge, social occupations outside of the university, indifference toward research and domestic occupations had the least impact. Among organizational obstacles, lack of research-oriented courses, lack of access to consultants, lack of facilities and equipment had the most

impact and lack of research-assisting experts, receiving the project budget step by step and low income had the least impact (20).

In Hamedan, Mahjoob et al. concluded that among the fundamental sciences professors, lack of English knowledge is the major reason for lack of research. Among the clinical studies professors, having many educational, teaching or treatment occupations is the major reason for lack of research. Lack of required collaboration between members of clinical studies and fundamental sciences in doing research jointly is one of the factors that prevent researching. It is clear that personal obstacles have more impact on lack of research than organizational ones (9).

In Gilan University of Medical Sciences, Farmanbar et al. concluded that organizational and administrative obstacles have higher impact on reluctance toward research than individual obstacles. However, among assistant professors and higher, organizational obstacles had higher impact and among lecturers, personal obstacles such as low motivation had higher impact (21).

In Shiraz, Karimian et al. concluded that financial and scientific obstacles were the most and least important reasons of professors' reluctance toward research, respectively (22).

In North Khorasan, Hejazi et al. concluded that organizational factors such as digital information resources and research rules and requirements were among the reasons of lack of research and that personal obstacles were of less importance. Finally, they determined that the professors' attitude resulted from the newly established university (23).

In Zahedan, Karimi et al. concluded that personal factors were not very important in preventing research and organizational factors (the procedures for reviewing and approving the research projects), economic-financial, facilities and equipment and social had an impact on reluctance toward research in decreasing order (24).

In a research conducted in Iran University of Medical Sciences, Zohur et al. concluded that organizational obstacles had more impact than personal ones. Among organizational factors, lengthy procedure of reviewing projects was the most important factor (25).

In Isfahan University of Medical Sciences, regarding research obstacles among the managers, faculty and experts, Kianipour et al. concluded that the following factors had an impact on reluctance toward research in decreasing order: little communication between the

researchers, faculty's lack of time due to educational occupations, lack of research assistance policies and lack of research budget (26).

In another research, Hajisalehi et al. studied research obstacles from the viewpoint of faculty members of Isfahan University of Medical Sciences. Lack of time and having many job-related occupations (personal obstacles), cumbersome administrative requirements, lack of optimal application of research results, lengthy procedure of approving research projects (organizational and administrative obstacles) were considered as the most important reasons of lack of research (27).

In Kerman, Sabzevari et al. studied the factors affecting lack of research from the viewpoint of the faculty of the universities in Kerman including Kerman University of Medical Sciences. They concluded that personal obstacles were more important than organizational and administrative ones (10).

In Hormozgan University of Medical Sciences, Abedini et al. concluded that personal obstacles (lack of time and having many occupations) had more impact on reluctance toward research than organizational obstacles (teaching many courses, lack of facilities and equipment and cumbersome administrative requirements regarding research projects) (28).

In the state of Ardabil and among its universities including University of Medical Sciences, Dadkhah et al. concluded that among personal obstacles, job-related occupations had the most impact and among organizational obstacles, low research income compared to the time spent and lack of required research facilities and equipment were the major reasons causing organizational obstacles. (29)

In Qom, Darabi et al. concluded that from the viewpoint of the faculty members and researchers of Qom University of Medical Sciences, administrative requirements, lack of research budget, heavy workload, lack of motivation and individual skills were the major reasons for lack of research. Organizational obstacles played a stronger role in preventing research than personal ones (30).

In the study of Kourki et al. in Hamedan, having many educational, teaching or treatment occupations were considered among the main reasons and obstacles ahead of original research projects, reporting the results as papers and long period between submitting a paper and its printing in Persian scientific journals ranked next.

They finally concluded that a combination of personal and organizational obstacles led to reluctance toward research (12).

2- Nurses and Obstetricians

In teaching hospitals of Shiraz, Hoseininasab et al. concluded that among individual obstacles, lack of time and having many occupations had the highest impact, and lack of English knowledge had the least impact. Among organizational obstacles, not being motivated by the officials and moral restrictions had the most and least impact on reluctance toward research, respectively. They determined that the impact of individual and organizational obstacles was equal (31).

In a study on the nurses and obstetricians of Shahrekord hospitals, Sereshti et al. concluded that lack of time and having many occupations, lack of facilities and equipment, and lack of access to consultant were the most important reasons and indifference toward research and uselessness of research were of the least importance. In general, organizational obstacles had more impact on reluctance toward research than the individual ones (32).

Regarding nurses' reluctance toward research in Kerman hospitals, Sharifi concluded that in general, nurses have little inclination for research. Factors such as heavy workload of the nurses due to lack of enough human resources and not allocating official time for research activities prevented research (33).

In Tabriz, Valizadeh et al. concluded that lack of enough facilities for realizing research findings, lack of cooperation from the doctors in employing the results of nursing research and nurses' lack of time to study previous research were among the reasons for lack of research. In general, the impact of organizational obstacles were more than the individual ones (34).

3- Students

Changizi Ashtiani et al. studied the research obstacles from the viewpoint of ordinary and talented students in Arak University of Medical Sciences. They concluded that lack of English knowledge and lack of access to appropriate research consultants were among reasons for reluctance toward research. They suggested increasing the financial support and removing the organizational obstacles such as requirements (35).

In Arak University of Medical Sciences, Anbari et al. studied the reasons for lack of research from the viewpoint of researching and non-researching

students and concluded that lack of educated research assistants, lack of application of research results in the society, unfamiliarity of the students with digital libraries were the most important reasons for lack of research. Researching and non-researching students considered organizational and personal obstacles as the major factors in reluctance toward research, respectively (36).

Nikrooz et al. studied the factors preventing execution of student research projects from the viewpoint of the students of Yasouj University of Medical Sciences. Regarding personal obstacles, lack of skill and knowledge of research methodology were the most frequent. Among organizational obstacles, lack of access to consultants, weak consultants and lack of facilities and equipment were the most important reasons. In this research, personal obstacles were more important than the organizational ones (37).

Regarding the attitude of students toward research in Qazvin University of Medical Sciences, Javadian concluded that from their viewpoint, mismanagement, lack of research budget, lack of motivation and lack of facilities consisted the most problems of educational system research area (38).

Mazloomi Mahmoodabad et al. conducted a study in Yazd, in which the average score for organizational obstacles regarding lack of research was higher than the personal ones. Personal obstacles were more common among women compared to the men (39).

Discussion

In general, in the studies conducted on the professors, the studies, which considered the impact of organizational obstacles was higher, were more frequent than studies that considered the impact of individual obstacles was higher. Among personal obstacles, lack of time and having many occupations were considered as the most important factors and among organizational factors, cumbersome administrative requirements and financial support were the most important ones. Lack of financial resources is considered as one of the personal obstacles for providing a part of costs of living or increasing the income of the studied individuals specially the doctors. It seems that research centers must increase the financial support of the researchers.

In India, Alamdari et al. consider lack of time and clinical occupations as factors influencing professors' reluctance toward research (15). In Pakistan, Sabzwari et al. consider lack of learning

and research education as factors influencing professors' reluctance toward research. (40)

Among the students, and the nurses and obstetricians, both organizational and personal obstacles were involved. In these limited studies, organizational factors had a more important role. Regarding the students, it must be remarked that either they are not aware of the advantages of education or they do not pay attention to them. (letter to the editor) Among other reasons between the students specially the top ones, being occupied with the curriculum can be mentioned.

In Sweden, Bostrom et al. defined not being close to individuals skilled in research and some organizational obstacles such as lack of facilities as influencing factors (41). In China, Wang et al. considered lack of research knowledge as the most important reason for the nurses' reluctance toward research (42).

There might be a relationship between obstacles and gender. Since although in some of the studies, organizational obstacles had a higher impact, individual obstacles had more impact among the females (39).

In some cases, university type, that is inclusion of tuition (like international units) or exclusion of tuition (public units) had an impact on the inclination for research (29). In addition, moral obstacles have little impact on reluctance toward research.

Some of the studies mentioned having many educational occupations or lack of a research unit in the educational system. One suggestion is including the research-oriented courses in educational curriculum in the university in order to involve both the professors and students in research. Research education methods such as student mentorship programs and many other ones can be used to promote the research culture. In general, it is recommended to develop a new idea to determine the educational and research responsibilities of the academics.

Some of the studies discuss the lack of knowledge regarding the various research stages as a reason for reluctance toward research. It is recommended to establish an institute in universities for activities such as research and statistical consultation for paper writing and consultation regarding paper publication. In medical sciences, all stages of research must be considered, for example, the problem of technical translation which is apparent among academics. Having access to information resources is one of the requirements of a proper research that must be facilitated.

Some of the studies consider lack of communication among different parts of the university as one of the reasons for lack of research. It is recommended to establish a research relationship between various groups such as doctors, nurses, the staff, students and etc., which might result in the progress of Medical Sciences.

Regarding reluctance toward science production and research, it is important and must be considered that lack of science production in each field will destroy it or decrease its progress rate (31). It points out that each field must realize and resolve its own obstacles and requirements.

Not being able to study the situation of the professors, students, nurses and obstetricians in all universities of the country was one of the restrictions of this research. The professors in other universities of the country must be studied as well in order to provide comprehensive results. The research was also limited regarding the students, nurses and obstetricians. The studies must be conducted at a broader level in order to emphasize the results in the country.

In the studies conducted on the professors, fundamental sciences professors were neglected and mostly clinical professors were considered. The professors in other fields were rarely discussed. Since some studies were conducted on all of the universities in a state and they have not studied the universities of Medical Sciences exclusively, their results are not reliable for the universities of Medical Sciences.

REFERENCES

- Foroughi F, Kharrazi H. Faculty Members' Scientific Productivity in Kermanshah Medical Sciences University. *Iranian Journal of Medical Education*. 2005;5(2):181-7.
- valizadeh I, ghiasvandian S, Abedi HA, zamanzadeh V. Challenges and Solutions of MSc Education in Nursing: A Qualitative Study. *Iranian Journal of Medical Education*. 2012;11(8):1010-23.
- Afshari P, Haidarpour S. Is "teaching" an obstacle to "research"? *Iranian Journal of Medical Education*. 2002;2(0):9-.
- Kourki M, Mahjoub H, Sheykh N. Study of the Academic Members Attitude about Main Factors of Not Approaching to Scientific Writing in Hamadan University of Medical Sciences. *Scientific Journal of Hamadan*

- University of Medical Science. 2007;14(4):59-63.
- Faely S PRG, Chizari M. The Survey of Effective Factors on Students' Contribution in Research Activities and Scientific Production. Quarterly journal of Research and Planning in Higher Education. 2007;12 (4) :93-124.
- Moin M, Mahmoudi M, Rezaei N. Scientific output of Iran at the threshold of the 21st century. Scientometrics. 2005;62(2):239-48.
- Aminpour F, Kabiri P. Science production in Iran: the scenario of Iranian medical journals. Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences. 2009;14(5):313.
- Akhondzadeh S. Iranian science shows world's fastest growth: ranks 17th in science production in 2012. Avicenna journal of medical biotechnology. 2013;5(3):139.
- Mahjub H, Koorki M, Sheikh N. A Comparative Study of Factors Affecting Reluctance to Scientific Writing from The Viewpoints of Basic and Clinical Sciences Faculty Members in Hamedan University of Medical Sciences in 2006. Iranian Journal of Medical Education. 2008;8(1):158-63.
- Sabzevari S, Mohammad-Alizadeh S, Azizzadeh Frozi M. The view point of faculty members of Kerman universities about barriers to research activities. Journal of Shahid Sadoughi University of Medical Sciences. 2000;8(2):18-27.
- Rezaeian M, Asadpour M, Hadavi M. Research Barriers from the Perspective of Academic Members and Strategies for Confronting with These Barriers in Rafsanjan University of Medical Sciences, Iran. J Health Syst Res 2013; 9(3): 269-76.
- Kourki M, Mahjoub H, Sheykh N. Study of the Academic Members Attitude about Main Factors of Not Approaching to Scientific Writing in Hamadan University of Medical Sciences Journal Hamadan University of Medical Sciences. 2008;14(4):59-63.
- Malekzadeh R, Mokri A, Azarmina P. Medical science and research in Iran. Arch Iran Med. 2001;4(1):27-39.
- Zinaloo A, Mohammadi M, Geranmayeh M, Farsaam H, Khakbazan Z. Research perspective at Tehran University of Medical Sciences from the viewpoint of the faculty members. Iranian Journal of Medical Education. 2002;2(0):60-.
- Alamdari A, Venkatesh S, Roozbehi A, Kannan A. Health research barriers in the faculties of two medical institutions in India. Journal of multidisciplinary healthcare. 2012;5:187.
- Sereshti M. KA, Daris F. . Research barriers from the viewpoint of faculty members and employees of Shahrekord University of Medical Sciences. Bimonthly of Education Strategies in Medical Sciences. 2010: 3 (2) :51-57.
- Mehr Alizadeh S, Vakili A, Pour Hoseyni SM. View of academics of Faculty of Medicine of Semnan University of Medical Sciences towards student research. The Journal of Medical Education and Development. 2012;6(1):11-6.
- Badrizadeh a, Gholami y, Birjandi m, Beiranvand g, Mahooti f. Barriers to research from viewpoint of faculty members of Lorestan university of medical sciences. Yafteh. 2009;11(3):93-100.
- Alamdari A, Afshoon E. The view point of faculty members on research barriers at Yasuj Universities. Armaghan Danesh. 2003.
- Salem Safy R, Ashraf Rezaei N, Sadatian R, Moshirie Z, Sheikhy N, Baniadam A. R Salem Safy ,MA BN Ashraf Rezaei ,?BSc R Sadatian , MSc Z Moshirie , MSc N Sheikhy , A Baniadam , MSc. Journal of Nursing and Midwifery Urmia University of Medical Sciences. 2009;7(3):0-.
- Farmanbar R, Asgari F. Study of Constraining Factors of Research from the Viewpoint of Faculty Members in Guilan University of Medical Sciences. Journal of Guilan University of Medical Sciences. 2005;14(54):84-91.
- Karimian Z, Sabbaghian Z, Saleh Sedghpour B, Lotfi F. Internal Obstacles in Research Activities: Faculty Members' Viewpoints in Shiraz University of Medical Sciences. Iranian Journal of Medical Education. 2012;11(7):750-63.
- Hejazi A, Khankalabi M, Ataei M. Survey of Obstacle in Research from the View Point of Academic Members at the North Khorasan University of Medical Sciences during 2007-2008. Journal of Northern Khorasan University of Medical Sciences. 2008;1(1):41-6.
- Karimi A, Mehdipour Y, Mohammadpour A, Pirozanfar S. The view point of faculty members on research barriers in Zahedan University of Medical Sciences. Health

- Information Management of Journal. 2011;7(1):467-74.
- Zohor A, Fekri A. The barriers of research: Views of faculty members in Iran university of medical sciences. *Payesh Quarterly*. 2003;2(2):113-20.
- Kianpour M, Arti S, Naji H. Survey of research problems from the viewpoints of managers, scientific staffs and research experts in Isfahan University of Medical Sciences. *Iranian Journal of Nursing and Midwifery Research*. 2010;10(3).
- Hajsalehi E SR, Sharifirad Gh. Research barriers from the viewpoint of faculty members Isfahan University of Medical Sciences. *J Health Syst Res* 2014; 10(1): 98-105.
- Abedini S, Abedini S, Kamalzadeh H, Momeni E, Zare S. Barriers to research from viewpoint of Hormozgan University of Medical Sciences faculty members. *Journal of Dena*. 2009;1-2(14):51-9.
- Dadkhah B, Mohammadi M, Poornaseri S, Mozaffari N, Adham D. View of Ardabil Province Universities Scientific Members' about research and its Limitations. *Journal of Ardabil University of Medical Sciences*. 2008;8(1):37-44.
- Darabi S, Kohpayi A, Yousefi M, Komeili Movahed T, Ahmadi Tehran H, Rahmani M. Evaluate of the severity of the research problems before and after intervention and management from the perspective of faculty members and researchers Qom University of Medical Sciences. *Journal of Qom University of Medical Sciences*. 2009;3(3):37-44.
- Hosseininasab A, Alidousti Shahraki K, Noohi E, Kamali M. The Barriers of Research from the View Point of Nurses and Midwives working at Shiraz Teaching Hospitals, in 2009. *Journal of Health & Development*. 2013;2(2):149-56.
- M S. Barriers of Research Performances in the View of Nurses. *journal of ilam university of medical sciences*. 2007;15(2):7-13.
- Sharifi S, Mohamad-Alizadeh S. Attitudes and Perceived Barriers to Carry Out Research among Hospital Nurse Administrator. *Iran Journal of Nursing*. 2009;22(59):51-9.
- Vali Zadeh L, Zaman Zadeh V, Fathi Azar A, Safaeian A. Barriers and facilitators of research utilization among nurses working in teaching hospitals in Tabriz. *Hayat*. 2002;8(2):32-42.
- Changizi Ashtyani S, Shamsi M. Comparison of barriers to research activities form the point of view of normal and talented students at Arak University of Medical Sciences. *Edu R Med*. 2012;1(1):26-32.
- Anbari Z, Jadidi RA. Comparing of Barriers to Research Activities among Students of Arak University of Medical Sciences, and Appropriate Strategies for Student Research Management. *Iranian Journal of Medical Education*. 2013;13(5):435-48.
- Nikrooz L, Rouzitalab M, Rayegan Shirazi AR, Naghizadeh MM, Taghavi F. Student Research Projects Inhibiting Factors from the Students Perspective. *Journal of Fasa University of Medical Sciences*. 2012;2(2):113-9.
- Javadian Y. Relationship between facilities and manpower of basic sciences departments and academic achievement of medical students in Kerman. *The Journal of Qazvin University of Medical Sciences*. 2002;6(2):64-7.
- Mazloomi Mahmoodabad s, Hosseini p, Abbasi Shuvazi m, Mirzaei Alavijeh m, Rezaei f. A Survey of Shahid Sadoughi University of Medical Sciences Students' Opinions about Research Barriers during University Training. *Journal of Medical Education Development*. 2013;6(10):63-70.
- Sabzwari S, Kauser S, Khuwaja AK. Experiences, attitudes and barriers towards research amongst junior faculty of Pakistani medical universities. *BMC medical education*. 2009;9(1):68.
- Bostrom A-M, Kajermo KN, Nordstrom G, Wallin L. Barriers to research utilization and research use among registered nurses working in the care of older people: Does the BARRIERS Scale discriminate between research users and non-research users on perceptions of barriers. *Implementation Science*. 2008;3(1):24.
- Wang L-P, Jiang X-L, Wang L, Wang G-R, Bai Y-J. Barriers to and Facilitators of Research Utilization: A Survey of Registered Nurses in China. *PloS one*. 2013;8(11).