



## Assessment on the Dissemination and Knowledge Translation of Medical Students and PhD Students' Theses in the Year 2006-2013

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### Abstract

**Objective:** The importance of research and its fundamental role in the country's growth and development is vital. Connecting research to knowledge translation is an essential component of research process and its production, management, and the maintenance of this process is the reason behind the survival of the national health research system. Knowledge translation is the process of disseminating knowledge into actual use, or simply application of knowledge.

**Materials and Methods:** This was a cross-sectional study conducted on 418 university students enrolled in medical universities throughout the country during the period from September 2006 to 2013.

**Results:** About 42.5% of respondents have expressed that results of dissertations will benefit the health care providers while 2.2% of respondents have expressed that research results can benefit the industrial sector, they further expressed that 11.4% of researchers and 32.2% of the general population can benefit from these researches. Furthermore, in order that results of students' dissertations will become useful to others 71.7% of the students have expressed that research results be published as an article in international indexed journals.

**Conclusion:** The results of this study showed that majority of students have selected the title of their research project based on their personal interest and then decided based on the opinion of their thesis mentor. The principles of accurate and relevant data management must be implemented in order that researches will be directed toward being more practical rather than theoretical. Hence, by performing more extensive researches, barriers as well as factors that promote researches will be identified and by emphasizing on knowledge translation a cultural environment aiming at presenting research results to users will be achieved and researches and dissertations that resulted to the solution of the problems of the community will be promoted.

**Keywords:** Assessment, Dissemination, Knowledge Translation, Medical Student These

### Introduction

The importance of research and its fundamental role in the country's growth and development is

vital. Connecting research to knowledge translation is an essential component of research process and its production, management and the maintenance

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of this process is the reason behind the survival of the national health research system (1). Knowledge translation is the process of disseminating knowledge into actual use, or simply application of knowledge (2). Knowledge translation and the use of evidence in research have been widely used globally for health policies and decision making processes (3,4). In developing countries, research topics and the appropriate management of adequate resources are considered the key role in speeding up an environment of development in all aspects. Indeed, research is a result of perception and perception is the guiding light and a tool for improving demands (5). In this context, the role of universities and research centers in strengthening basic researches is of vital importance. These centers with their fields of expertise can advance into the frontiers of knowledge and achieve a higher status for their innovations and inventions (6). In addition, the health sector aside from health care delivery and health education is also responsible for performing basic researches for the purpose of determining priorities and health care needs in order to increase productivity (7). Furthermore, improvement in the quality of education and its sustainability can be attained through the university's research environment. This matter can be resolved by identifying problems and hindrances of performing researches from the perspective of faculty members and by moving in this direction, these issues can be resolved (8). By looking back at the past, we can observe that through community improvements and the transition of the society from traditional to industrial, research process can progress towards an institutional and legal format in comparison to its former dispersed and various scopes (9). Other countries that aspire to compete in the global arena should remove existing barriers and bottlenecks that hinder research while creating attractions to promote research (10-14).

### Materials and Methods

This is a cross-sectional study conducted on 418 university students enrolled in medical universities throughout the country from September 2006 to 2012. Respondents were selected from the database of students who registered and granted fellowship by the Ministry of Health and Medical Education and had affixed their e-mail addresses upon registration. Of the 4000 students who were registered in this database, only 2000 have e-mail addresses therefore, an equal number of questionnaires were e-mailed to the respected students. Due to the fact that in the present study, questionnaires were sent to the respondents through e-mail, the numbers of respondents were lesser than expected in comparison to actual distribution of questionnaires. Hence, in order to reach the desired number respondents, an e-mail with an attached questionnaire were sent to all

students and students who have responded through e-mail were compared with those students who did not respond, results were correctly evaluated in order to prevent selection bias. Another e-mail was also sent for the purpose of assessing the reasons for students' failure to fill up the questionnaire and to ask for clarification on their dissatisfaction.

The method used in gathering the data in the present study was a questionnaire which was designed by the authors in order to investigate available tools to achieve the objectives. This is a close type of questionnaire and the following components has been taken into consideration: Factors affecting the choice of research topic, student's status in terms of identifying potential users of research results: activities used by students in order that results of their researches can be utilized, the influence of presenting results of dissertations to the target audience and percentage of students' cooperation to the users of the research project. After sending the questionnaire via e-mail and through the constant pursuit of the researcher, questionnaires were collected after 2 months. To evaluate repeatability of the questionnaire, the Kappa coefficient was used yielding a result of  $> 0.7$ . In order to confirm the validity of the questionnaire, opinions from experts and faculty members were employed. Due to the limitation of the study population and the probability that questionnaires will not be answered and also, the probability of low feedback through this method, all students present on the database were included in this study. Completed questionnaires were analyzed using the Excel software and then submitted to a statistician for final analysis. Data were analyzed using SPSS for Windows (version 17.0, SPSS Inc., Chicago, IL, USA) and ANOVA.

### Results

A total of 418 students completed the questionnaire of which 52.2% were females and 47.8 were males. Based on the students' view regarding the factors that influence the choice of topic for their dissertation 48.3% expressed that suggestion from their thesis mentors have influenced their choice of topic while a small percentage has expressed that their choice was based on the needs of policy makers, public and private organizations (Table 1).

Considering the previous researches conducted, 42.5% of respondents have expressed that results of dissertations will benefit the health care providers while 2.2% of respondents have expressed that research results can benefit the industrial sector, they further expressed that 11.4% of researchers and 32.2% of the general population can benefit from these researches.

Furthermore, in order that results of students' dissertations will become useful to others 71.7% of the students have expressed that research results be published as an article in international indexed journals (Table 2).

**Table 1.** The factors influencing the choice of dissertation topic

Factors influencing the choice of the dissertation topic	Frequency	Percentage
This research was my personal interest	165	40.5
This research was suggested by my professor	196	48.3
Reviewing previous researches has gained my interest in choosing this research again	55	13.5
This research was conducted in line to the questions raised on my previous researches	59	14.1
This research is a series of those researches conducted for the purpose of responding to a specific question	30	7.4
This research was chosen based on the necessity of governmental executive organizations	7	1.7
This research was chosen based on the necessity of non-governmental organizations or centers	2	0.5
This research was chosen based on my assessment on the needs of policymakers and managers	13	3.2
This research was chosen based on my assessment on the needs of clinicians and other health care providers in their decision making process	68	16.7

**Table 2.** The activities performed by students in order that outcome of their researches will benefit others

Which of the following activities have you performed regarding your doctoral dissertation	Frequency	Percentage
Published an article from this research in a local journal	212	52.5
Published an article from this research in international journal	289	71.7
Presentation of this research in conferences, seminars and meetings within the country	175	43.4
Presentation of this research in conferences, seminars and meetings internationally	129	32.0
Submission of full report of research project to users (managers, physicians and the general population)	60	14.9
Submission of a summary of research project to users (managers, physicians and the general population)	69	17.1
Publication of research result in a website	47	11.7
Submission of printed or electronic form of the article, complete or summary of research project to users (managers, physicians and the general population)	18	4.5
Arrange meetings with users in order to present research results	43	10.7
Documentation of research findings in different contents suitable to the specific types of users (patients, managers, clinicians, industrialist and students)	45	11.2
Publication of research results in non-academic journals such as (newspapers or magazines of general interests)	8	2.0
Presentation of research results to journalist, mass media for publication or interview	9	2.2

Results of the present study showed that 50.2% of the respondents have expressed that results of dissertations had influence their decision on conducting new research whereas 39.5% have expressed that results of dissertations had increased their knowledge regarding the subject of research. 12.5% have expressed that results had led to production of new products (drugs, laboratory materials and etc...) while 3.6% have expressed that results had not bring about any significant results.

The majority of the cooperation done by respondents to students in the implementation of research project was in designing research objectives and in formulating and implementing research while the least cooperation was in the transfer of research results through workshops and other methods.

## Discussion

The results of the present study showed that majority of students have chosen the title of their research project based on their personal interest and then decided based on the opinion of their thesis mentor. The main providers of clinical information in this study were the study population and the greatest amount of communication the students have with the users were on matters of formulating goals and methods of research and for the purpose of transferring knowledge, majority of articles written from research projects were submitted in local journals for publication. Furthermore, fellowship grants have led to an increase focus and have created an impact on the quality of selecting research topic

and in the quality or research work. Holding symposiums with faculty members acting as research mentors regarding fellowship allocation and attention to issues, which is of priority to the country is vital.

A study conducted by Joibari et al. showed that intimacy and empathy of instructors have played great impact on students learning while reproduction of same researches that is being useless to the society would result to hopelessness to young researchers therefore, it seems that the current culture in the strata of younger students need to be improved (12). Results of this study conducted in Washington D.C. showed that the advanced academic model having a broad perspective is consistent to the principles of knowledge translation. They believed that in today's world, the quest for science and demands for greater knowledge in terms of practicality is high and the academic community should take this matter seriously in order to achieve their academic goals and therefore, prevent from performing large and complex interactions with various constituent in their areas of work. Guidelines on students' theses and dissertations are actually a part of related complex activities of which research is linked to its application and brings about interaction of feedbacks and acceptance (15,16).

In order to assess the "Applicability of student's theses and dissertations," 71.7% have responded that students' articles, the outcome of their research projects should be publish in accredited international journals while another item that has been assessed "Presentation of research results to journalist, mass publication or interview" have earned the lowest

results. A study conducted by Sudsawad on knowledge translation has concluded that research does not necessarily lead to publication of scientific contents and or production of products; however, it might provide answers to the problem of a specific organization. Hence, a group of target audience desired that this large amount of researches should be able to answer the needs of the general public and should be reflected in the media. Therefore, the message gained from this research must be in accordance to the topic and also, must be applicable to specific channels in order that it can be transmitted to the targeted audience (17).

Michigan State University and the College of Community Medicine has also regularly and continuously published original and high quality researches in peer reviewed journals as a rule of promoting knowledge translation and has drawn significant attention (18). Publication of articles for the purpose of transferring knowledge was not adequate enough due to the following reasons; process of publication is time consuming therefore, there is the possibility that the readers' golden time has elapsed upon access to the publication, second, it cannot be ensure that results would reach to the person concerned and finally, results from the outcome of this research might not be completely explained (19).

Results of the present study only emphasized on the publication of content in the form research paper therefore, it is essential that interventions in the organizational level be implemented in order that knowledge translation will not only be limited to article presentation.

Although analysis was carried out in a systematic manner but one of the limitations incurred in this study is the lack of access to all registered members. Definitely, the greater the number of individuals participating in the study the more comprehensive the assessment would be. However of course, analysis and evaluation of knowledge translation resulting from Masters' degree and PhD degree programs must be further developed.

And because the country's initial step toward practical implementation and application of research results has been withdrawn and on the other side, the aim of research, which is knowledge production and considering that approximately 50% of students will publish the results of their performed researches in the local journals therefore, issue on knowledge translation must be given more consideration.

## Conclusion

In order to increase the use research findings, it is recommended that knowledge translation programs be strictly carried out at the university level. Also, the principles of accurate and relevant data management must be implemented in order that researches will be directed towards being more practical rather than theoretical. So, by performing more extensive researches, barriers as well as

factors that promote researches will be identified and by emphasizing on knowledge translation a cultural environment aiming at presenting research results to users will be achieved and researches and dissertations that resulted to the solution of the problems of the community will be promoted.

## Ethical issues

In this study was considered ethical issues and all the participant are not be identifiable in any way by a reader of the final report or dissertation.

## Conflict of interests

We declare that we have no conflict of interests.

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## References

1. Nuyens Y, Lansang MA. Knowledge translation: Linking the past to the future. *Bull World Health Organ* 2006; 84: 590.
2. Lenfant C. Shattuck lecture-clinical research to clinical practice--lost in translation? *N Engl J Med* 2003; 349: 868-74.
3. Lomas J. Words without action? The production, dissemination, and impact of consensus recommendations. *Annu Rev Public Health* 1991; 12: 41-65.
4. Utterback JM. Innovation in industry and the diffusion of technology. *Science* 1974; 183: 620-6.
5. Mostafavi sabzevari R. Research studies. *Peyke Noor Journal* 2007; 5: 146-50. [In Persian].
6. Shams N. Credit of the research institutes affiliated to the Ministry of Science, Research and Technology Development in the first and second 1989-1999. *Quarterly Journal of Research and Planning in Higher Education* 2001; 7: 135-72. [In Persian].
7. Anbari Z, Jamshidifar A, Setareh M. The viewpoints of faculty members about research activities problems in Arak University of Medical Sciences. *Iran J Med Educ* 2005; 5: 196-8. [In Persian].
8. 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. *Iran J Med Educ* 2002; 2: 60-79. [In Persian].
9. Rahmani M, Soltani B. Self-evaluation research institutes affiliated to the Ministry of Science, Research and Technology. *Rahyaft Journal* 2005; 35: 83-93. [In Persian].

10. Sohrabi Z, Farajolahi M. The study Problems from the perspective of the research faculty of the School of Medical Sciences. *J Med Counc I R Iran* 2009; 27: 175-8. [In Persian].
11. Darabi SH, Koozpaie AR, Yosefi MH, Komaili T, Ahmari H, Rahmani M. The Study of the Magnitude of the Research Problems before and after the Administrative and Management Interventions from the Faculty Members and Researchers' Viewpoint at Qom University of Medical Sciences , Qom, Iran, during 2004-2008. *Qom Univ Med Sci J* 2009; 3: 37-44. [In Persian].
12. Joibari L, Yosefipour O, Sanagoo A. A mechanism for increasing the performance of medical students. *J Qual Res Health Sci* 2012; 1: 59-69.
13. Kolahi AA, Farsar AR, Molavi M, Kolahi S, Malek Afzali H. Comparative quality of thesis's General practitioner in medical science universities during 1991-1992. *Hakim Res J* 2003; 6: 11-7.
14. Governmental Document for 20 years [Online]. [cited 2008]; Available from: URL: <http://www.dolat.ir/pdf/20years.pdf> [In Persian].
15. Diamond RM, Adam BE. The Disciplines Speak II: More Statements on Rewarding the Scholarly, Professional, and Creative Work of Faculty. Washington, DC: American Association for Higher Education; 2000.
16. Driscoll A, Lynton EA. Making outreach visible: a guide to documenting professional service and outreach. Washington, DC: American Association for Higher Education; 1999.
17. Sudsawad P. Knowledge translation: Introduction to models, strategies, and measures. New York, NY: The National Center for the Dissemination of Disability Research; 2007.
18. Michigan State University College of Human Medicine. Standards, Criteria and Guidelines for Reappointment, Promotion and Tenure in The College of Human Medicine and Addendum, Michigan State University-College of Human Medicine [Online]. [Cited 2009 Jul 11]; Available from: URL: <http://humanmedicine.msu.edu/>
19. Nedjat S, Majdzadeh R, Gholami J, Nedjat S, Maleki K, Qorbani M, et al. Knowledge transfer in Tehran University of Medical Sciences: an academic example of a developing country. *Implement Sci* 2008; 3: 39.

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