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Utilization of Medical Education research studies: A survey among participants in Iranian National Conference on Medical Education



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ABSTRACT

Introduction: Conferences and scientific meetings are valuable opportunities to transfer and exchange research findings. In Iran, National Conference on Medical Education is held annually, with more than 1500 participants from different disciplines. Participants' competency in utilizing research findings, research finding readiness for utilization, and perceived organizational support are three domains that contribute to the enhancement of research utilization in medical education. This study was conducted to assess the conference participants' own competency on research utilization, viewpoints about research readiness and perceived organizational support for research utilization in medical education.

Method: This is a survey study on a convenient sample of participants in the conference; researcher-designed, self-administered questionnaire was applied. It consisted of 19 items in four domains (baseline characteristics, scientific activities, Competency for research report utilization, Research findings readiness for utilization and, organizational support for research utilization). The face and content validity of the questionnaire was approved by experts in the field, and its reliability was

0.94. Data were analyzed by descriptive analysis, Pearson correlation, one way ANOVA and stepwise linear regression tests.

Results: 130 questionnaires were filled (response rate was 52%). 36% had a medical education degree. Faculty members rated their competency in the utilization of research report, viewpoint toward readiness of research report for utilization, and organizational support above the average. There was a statistically significant positive correlation between research utilization competency and the number scientific articles they had written, journal clubs participated and their work experience. The stepwise linear regression test revealed that journal club participation is the main factor of competency in research report utilization predictive model.

Conclusion: Participants' competency and viewpoint about research utilization were not desirable. The medical education must invest in training researchers and utilizers to earn essential competencies and change their mind about the important role of research findings in decision making. A limited study in this field implies the need to do more studies on research utilization in medical education.

Keywords: Medical Education, Translational Medical Research, Research Report, Conference, Iran.

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INTRODUCTION

There is a tendency to established educational decision making on the best evidence.¹ Research findings may provide evidence in medical education. Research findings' utilization is a relatively new concept in medical education. According to the literature, five types of research findings' utilization have been mentioned: Instrumental, Conceptual, Symbolic, Political, and Process utilization of research finding.²⁻⁴ Instrumental and conceptual utilization is the main research utilization types in medical education. Instrumental utilization refers to the use of research finding to change current behavior. Conceptual utilization is related to the change in the way of thinking of researchers and utilizers in the fields of medical education.⁵

According to the literature, three factors may promote research utilization: the competency of utilizers, perceived organizational support, and research finding readiness. Competency for

research report utilization was defined as essential skills for research utilization or research application such as searching for relevant research reports, critical appraisal of the reports, application to change behavior and evaluation of research utilization effectiveness; essential to be acquired by medical education researchers and research utilizers.

Research findings readiness means to produce research finding according to the utilizers' educational needs, as well as developing scientific knowledge body in medical education, bringing a new idea, changing attitudes towards research topics, and providing applicable suggestions in the field of practice.

Perceived organizational support is a main factor that enhances research utilization in medical education. Medical education research utilizers must have access to the research reports and related resources, administrative support for utilization

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of research finding in an organization and giving efficient authority for a behavioral change in the organization, giving incentives for application of research findings, promoting cooperation between researchers and utilizers to enhance research utilization in organization.

Studies on research utilization in medical education were limited. Most literature on research utilization is dealing with other areas, such as nursing practice, occupational therapy, social science and higher education.⁶⁻¹⁴

The main prerequisite in instrumental and conceptual research findings' utilization is to transfer and exchange research findings among researchers and utilizers. Research findings can be transmitted and exchanged through publication in scientific journals and presentations at academic meetings or conferences. In recent decades, there is a significant growth in the number of specialized scientific journals and the organized conferences in the field of medical education.^{15,16} The Internet is another means to disseminate research findings to the target audiences in a large scale.¹⁷

Organizing conferences, meetings, and other conventions are common ways to present research findings to the audiences.¹⁸ In Iran, National Conference on Medical Education is held annually, with more than 1500 participants from different disciplines interested in medical education research. Its objective is to present the latest research findings, promote and encourage researchers and research findings' utilizers' communication, and promote the utilization of research findings as evidence in medical education. Medical education conference participants may represent medical education community in Iran. Participants in the conference may also be considered as a stakeholder who could provide information about their own research utilization competencies, current research readiness and perceived organizational support for research utilization.

Research utilization is less attended in medical education literature. In this study, three contributing factors in research utilization (i.e., competency of researchers and utilizers, research readiness and organizational support) have been assessed according to the viewpoints of stakeholders attending the 17th Iranian National Conference on Medical Education.

METHOD

This is a survey study. The study population was all participants in the 17th National Conference on Medical Education in Iran (May 2016). Convenience sampling method is adopted. The participants

were informed about the confidentiality of the data and voluntarily completed the questionnaire. A researcher-designed self-administered questionnaire was used as the data collecting tool. The questionnaires were distributed by the researcher and completed by the participants at the conference registration desk on the first day of the conference, between 7 and 9 AM. This time was selected to prevent the effect of conference presentation on rating competencies and attitudes of participants.

At the first page of the questionnaire, we asked Five questions regarding demographic characteristics of the participants, consisting of gender, discipline, academic degrees, job position, and work experience (years). The questionnaire consisted of 19 items in 4 domains. The domains of the questionnaire included:

1. Eight items concerning the competency of the participants in research report utilization include: searching relevant research findings, reading papers in English, familiarity with medical education terminology, familiarity with research methodology, statistical interpretation, critical appraisal, application of research findings, and evaluation of research utilization effects. The rating was done in 5 point scale; within 1 (very low) and 5 (very high).
2. Five items on the participants' viewpoints were addressing the readiness of the recently studied research reports for utilization, including relevance of current researchs to the utilizer's needs, providing enough information about the research subject, bringing a new idea, changing attitudes towards research topics, providing applicable suggestions in the field of practice. Responses were scored on a five-point scale (from "none of them" as 1, to 'all of them' as 5)
3. Four items about perceived organizational support for utilization, including making access to the research reports and related resources, administrative support for utilization of research finding in organization, giving incentives for application of research findings, promoting cooperation between researchers and utilizers. Responses were rated on 5 point scale, within 1 (very low) and 5 (very high).
4. Three items about scientific activities of a participant in the preceding year: number of scientific articles the respondent has written and studied in the field of medical education, and frequency of participation at journal club session(s) or critical appraisal meetings.

The content validity of the questionnaire was approved by eight experts in the field of

medical education by calculating content validity ratio(CVR), content validity index(CVI) of each item. The reliability of the questionnaire was assessed and confirmed through Chronbach's Alpha coefficient. The total reliability of the first, second and third domain of questionnaire was 0.94. Data were analyzed by descriptive analysis of findings. Pearson correlation and The Stepwise linear regression test were also used for inferential statistics. The IBM SPSS for Windows versions 19.0 (IBM SPSS Inc., Chicago, IL) was applied for data analysis.

RESULTS

From 250 questionnaires distributed to the participants, 130 were filled and returned (52% response rate). 86.8% of the respondents were female.

Regarding the academic disciplines; 36% were in medical education as the main academic discipline, 20.6% nursing, 16.4% medicine, 5.5% dentistry, 1.5 % pharmacy and 20% miscellaneousparamedics. With regards to the job position of the participants, 27.2% were faculty members, 54.4% were students, and 18.4% were in the other positions. Among all participants, 24.3% held Ph.D. and 32.1% had MSc degree. Among the students, 32.4%were studying in MSc and 24.3% in Ph.D. programs. The faculty members' work experience was about 16.65 ± 7.51 years, and that of the students was 6.27 ± 4.55 years.

The descriptive analysis of scientific activities of participants in last year revealed that on average, they had read 6.46 ± 3.28 medical education articles; and had written 2.25 ± 2.21 medical education papers. About 39% of the participants did not participate in any journal club sessions on medical education within the last year, while 42.6% participated in 1 to 5 journal club sessions and 18.4% participated in 6 to 10 sessions.

Findings on the score of domains and items in the questionnaire were presented in [table 1](#). This result reveals that participants rated their competencies in research report utilization as moderate to high. The scores of readiness of the recently studied research reports for utilization and perceived organizational support for utilization get central tendency on the Likert scale.

The correlation coefficients between the competency of the participants in research report utilization, the readiness of the recently studied research reports for utilization, and perceived organizational support and continuous demographical variables such as work experience, scientific writing or reading, and journal club participation are tabulated in [table 2](#). There exists a robust correlation between research utilization' competencies and journal club participation.

There were no statistically significant differences in mean of the competency of the participants in

Table 1 Total Mean and SD of three domains and each item

Domain	Items	Mean	SD	Domain mean \pm SD
Competency of the participants in research report utilization	Searching relevant research findings	3.58	1.030	3.31 \pm 0.86
	Reading papers in English	3.63	1.017	
	Familiarity with medical education terminology	3.54	1.074	
	Familiarity with research methodology	3.38	.988	
	Statistical interpretation	3.10	1.049	
	Critical appraisal	3.13	1.101	
	Application of research findings	3.02	.915	
	Evaluation of research utilization effects.	3.07	.932	
Readiness of the recently studied research reports for utilization	Relevance of current researchs to the utilizer's needs	3.58	1.018	3.24 \pm 0.84
	Providing enough information about the research subject	3.47	1.101	
	Bringing new idea	3.16	.963	
	Changing attitudes towards research topics	3.06	.971	
	Providing applicable suggestions in the field of practice	2.95	.909	
Perceived organizational support for utilization	Providing access to the research reports and related resources	3.32	.805	3.16 \pm 0.70
	Administrative support for utilization of research finding in organization	3.07	.944	
	Giving incentives for application of research findings	3.13	.885	
	Promoting cooperation between researchers and utilizers	3.15	.891	

Table 2 Correlation coefficient between three Domains and Scientific activities items

Domains	Competency of the participants in research report utilization	Readiness of the recently studied research reports for utilization	Perceived organizational support for utilization	Scientific activities			
				Work experience	Writing scientific articles	Reading scientific articles	Frequency of participation at journal club session(s) or critical appraisal meetings
Competency of the participants in research report utilization	1	.678**	.679**	.707**	.768**	.757**	.813**
Readiness of the recently studied research reports for utilization		1	.560	.447	.496**	.444**	.573**
Perceived organizational support for utilization			1	.478**	.578**	.520**	.588
Continuous demographical variables	Work experience			1	.660**	.621**	.686**
	Writing scientific articles in the field of medical education				1	.805**	.730**
	Reading scientific articles in the field of medical education					1	.742
	Frequency of participation at journal club session(s) or critical appraisal meetings						1

Correlation is significant at the 0.01 level (2-tailed).

Table 3 One-way ANOVA test result for job position effects on the domain scores

Domains	Job position			One-Way ANOVA	
	Faculty members	students	Others	F	P value
Competency of the participants in research report utilization	32.22 ± 4.84	24.22 ± 6.27	23.24 ± 6.147	24.81	> 0.001
Readiness of the recently studied research reports for utilization	18.46 ± 3.21	15.26 ± 4.08	15.56 ± 4.74	8.19	> 0.001
Perceived organizational support for utilization	14.86 ± 2.29	14.86 ± 2.29	10.72 ± 2.51	24.16	> 0.001

Table 4 The Stepwise linear regression model for the competency of the participants in research report utilization

Model variables	Beta standardized coefficients	T-test	P-value
Constant	.802	4.873	<0.001
Frequency of participation at journal club session(s) or critical appraisal meetings	.319	4.892	<0.001
Writing scientific articles in the field of medical education	.232	3.791	<0.001
Readiness of the recently studied research reports for utilization	.215	4.212	<0.001
Perceived organizational support for utilization	.167	3.168	<0.001
Work experience	.161	2.857	<0.001

research report utilization, readiness of the recently studied research reports for utilization, and perceived organizational support between males and females. The One-way ANOVA and Tukey HSD test was used to find a significant difference between total score on each domain in categorical demographical variables such as discipline, academic degrees and job position. There were no statistically significant differences in three domains variance for discipline and academic degrees in the One-way ANOVA. The job position made a mean difference in three domains in the One-way ANOVA. Results of One-way ANOVA test is shown in [table 3](#). The Tukey HSD test indicated that faculty members were more competent than students and others. Faculty members had more positive viewpoints towards readiness of research and organizational support for research utilization. Students and other groups had a total mean lower than average in three domains.

The stepwise linear regression test is run in order to propose a predictive model for competency of the participants in research report utilization. All variables entered to the models, and according to the stepwise linear regression, non-significant variables were deleted and a model fitted by five variables for participant competency prediction (Adjusted R square = 0.80 And F test = 105.36, P value = >0.001). Results showed in [table 4](#). Results revealed that frequency of participation at journal club session(s) or critical appraisal meetings was the most effective variable (Beta=.319) to predict medical education competency in the utilization of research reports. Other variables also had a significant contribution to the model.

DISCUSSION

In this study the participants in the Iranian National Medical Education conference were surveyed about their competencies in research utilization, the readiness of the recently studied research reports for utilization, perceived organizational support and scientific activities. We were introducing a short tool for assessment of competencies, and viewpoint of researchers and utilizers about several domains of instrumental and conceptual research utilization in medical education. This study also focused on the conference participants, which were both researcher and utilizers simultaneously.

Findings revealed that most of the participants were formally trained in medical education. Above half of the participant were students in MSc or Ph.D. programs on medical education. Only faculty members rated their competency or viewpoint above the average of the scale. A previous study

revealed that the central tendency bias in self-assessment scale is common due to lack of knowledge of respondents to rate their attitude on the ordinal scale.¹⁹ The social desirability bias is also an important element in self-assessment questionnaires need to be considered.²⁰ It seems that the social desirability bias did not influence on the competency scoring because all participants did not rate their competency or viewpoint over the average

Based on the findings, there exists a significant positive correlation between viewpoints towards the research readiness for utilization and participants' research utilization competencies. The positive attitude of researchers and utilizers towards the value of research finding as the best evidence in educational decision increases tendencies to utilize research findings in their context.^{21,22}

Faculty members had more work experience than others. One-way ANOVA and Tukey HSD test results revealed that faculty members are more competent in research report utilization compared to others since they had written or read more scientific articles together with more positive viewpoint to the research utilization in medical education than other groups. Faculty members competency and positive viewpoint may be related to their explicit and tacit knowledge in research findings' utilization.²³

It is revealed that the correlation between participating in journal club sessions and research utilization competencies was more robust than other variables. According to the previous studies, participation in scientific journal club(s) increases the competency in critical appraisal of related articles. This robust correlation made journal club participation as the main factor in research utilization predictive model proposed in these articles. There are no papers to support readiness of research report and organizational support to correlate with competency in research report utilization. But previous studies claim that positive attitude toward research utilization could increase research utilization by users. More studies are needed to investigate the relationship between these variables.^{21,22}

CONCLUSION

Competency and viewpoints of participants about research utilization were not desirable. Faculty members' competency was above average. There should be more investment on the education of researchers and utilizers about essential competencies and role of research finding in decision making to improve utilization of research findings. Work experience, journal club participation and writing or reading scientific articles are correlated

with research utilization competencies among medical education community. Therefore it may be suggested to encourage scientific meetings and specifically, journal clubs on medical education.

ETHICAL CONSIDERATIONS

This study is performed in accordance with the Declaration of Helsinki and subsequent. Revisions are approved by the ethics committee of Isfahan University medical sciences department.

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DECLARATION OF INTEREST

There exists no conflict of interest.

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