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Original Research

Educational Needs Assessment of Faculty Members of Tabriz University of Medical Sciences, Tabriz Iran

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Abstract

Introduction: The present study aimed to determine the educational and research needs of faculty members of Tabriz University of Medical Sciences, Tabriz, Iran so that educational priorities can be found and presented to the authorities for the purpose of educational planning.

Methods: This cross-sectional descriptive study was conducted in 2013 at aforementioned University. Overall, 250 faculty members were randomly selected from 10 faculties and recruited. Research tool, a researcher-made questionnaire whose validity had been confirmed by a number of experts, was distributed in person, and eventually 230 were completed. Data were analyzed in SPSS-21 software using descriptive statistical tests.

Results: Faculty members of the University declared student assessment as their first educational priority. They also considered the following as their educational needs: teaching and learning, writing scientific articles, educational needs assessment, research in education and health systems, teaching methods and techniques, educational planning, program evaluation, educational guidance and counseling, professional ethics, and computer application in education, respectively.

Conclusion: This study investigated the educational needs of faculty members in three areas and 50 subjects and prioritized these needs according to each area. Based on these needs, educational planning authorities of faculty members, by appropriate educational planning, can take an effective step in improving scientific knowledge of professors and play an important role in enhancing the overall quality of education.

Introduction

Nowadays, organizations, an inseparable part of the community, are responsible for giving services to people. Organizations should consider their employees as part of the community that the organization has been established to serve. Furthermore, it should consider them as sources to reach the objectives of the organization. Therefore, attention to improving their competence through recognizing their talents and transforming their capabilities, skills and attitudes is essential. Training is an effective way to achieve this goal. Therefore, staff training is the right of individuals, because it leads to their actualization in line with organizational objectives.[1] According to ISO 10015, competence means applying knowledge, skills and behaviors in performance; therefore, training staff is defined as the process to provide and develop knowledge, skills, and behaviors to realize the goals and meet the requirements, which necessitates accurate educational programs.[2]

The prime step in developing and executing an educational program is the right and realistic execution of the needs assessment process. This is because the goals, criteria and design of each educational program are based on needs assessment. Accurate needs assessment plays an effective role in developing educational goals, assessment criteria and design of the educational programs. Needs assessment is an essential process in educational programming such that it is repeatedly mentioned wherever developing an educational program is raised. The logical base of each program is the presence of a need or a set of needs. Educational planners have to find convincing reasons for developing educational programs. Needs assessment is the actual process of collecting and analyzing information based on the needs of individuals, groups, organizations and communities.[3] A study entitled "Appropriate patterns of needs assessment from health managers' and experts' perspective" mentions needs assessment as the first and most important step in healthcare planning.[4] They believe that determining the needs based on accurate patterns and techniques leads to the enhancement of efficacy and effectiveness of planning.[4]

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There are two approaches to educational needs assessment: reductionist (including analysis of occupation, analysis of the individual and survey), and holistic (including analysis of the organization). Each approach leads to recognition of a certain group of educational needs. Several experts like Mirsepasi, Doaie and Kazemi have mentioned analysis of the organization, occupations, individuals and survey as methods for needs assessment.[5-7] In analysis of occupations, needs assessment is performed on the occupation so that the manner the job is fulfilled, and the attitudes, information and skill required for the job and solving its related problems is considered. In analyzing the individual (employee), educational needs assessment is performed on their educational deficiencies and needs. Finally, when using surveys for educational needs assessment, tools like interviews, questionnaires, group discussions and more are used for learners or key managers in the organization in order to recognize the educational needs of employees. Considering the nature of these methods, we can categorize them as the reductionist approach.

When analyzing the organization, a holistic and systematic outlook is applied on the objectives, programs, missions and visions of the organization and employee's needs are determined accordingly.[1] Most organizations tend to use reductionist methods by surveying employees and managers or analyzing occupations and individuals. Dolan and Schuler studied the methods used by organizations for educational needs assessment and showed that only 16% used a holistic approach.[8] Hanon used questionnaires and semi structured interviews to study medical residents' educational needs.[9] Karimi used occupation analysis for needs assessment of employees at the Environment Preservation Organization.

The present study utilized a reductionist approach and survey for needs assessment.[10] This study is necessary because the Education Deputy of the Ministry of Health, Treatment and Medical Education approved the directive for faculty members' duties in six domains in 2003: education, research, individual development, executive activities, treatment, health enhancement, and specialty activities outside the university.[11] Relevant studies have paid little attention to the six domains based on educational needs assessment. Furthermore, faculty members are the most important asset higher education institutions. Their competence in teaching, research, educational planning, etc. leads to realization of the missions and extensive goals of the institute.[3] Usually, faculty members in medical universities begin teaching upon receiving their degree. Meanwhile, most of them are not adequately familiar with teaching methodology, educational planning and assessment—they are especially unfamiliar with research in education.[12,13]

The present study aimed to assess the educational and research needs of faculty members of Tabriz University of Medical Sciences, Tabriz, Iran, in order to determine educational priorities and provide the authorities with educational programs. It is expected that faculty members can meet their educational needs and consequently meet the educational requirements of the university.

Materials and Methods

In this cross-sectional descriptive study, first, using indicators obtained through opinion surveys, review of literature and native and foreign studies, and guidelines of the Ministry of Health and Medical Education, a questionnaire was made. Face validity was used to validate this questionnaire such that the questionnaire was issued to six lecturers and experts in medical education who were skilled in medical education and the directives and guidelines issued by the Ministry of Health in the field of improving medical education for faculty members. Then it was modified according to their comments and suggestions and its validity was confirmed.

We used the survey method to study the history of attending and the need to attend or re-attend educational workshops in different fields of medical education. Participants were requested to identify indicators according to their history of participation in the intended workshop (with or without history) and the need to take part in the workshop. Using the Cochran formula, a sample size of 250 people was determined. In this study, relative sampling technique was used, and samples were randomly selected from seven schools of Tabriz University of Medical Sciences. Overall, 250 questionnaires were distributed in person and by frequent follow-up and continuous monitoring over one and half months, 230 were completed. The SPSS-21 software was used for analysis of data with descriptive statistics.

Results

Faculty members of Tabriz University of Medical Sciences declared student assessment as their first educational priority. They also considered the following as their educational needs: principles of teaching and learning, writing scientific articles, educational needs assessment, research in education and health system, teaching methods and techniques, educational planning, program evaluation, educational guidance and counseling, professional ethics, and computer application in education respectively (Table 1). Details of educational needs in each area are presented in Tables 2,3,4,5.

Table 1. Mean percentage educational needs of faculty members of the university

Titles	Need for participation
Student assessment	60.66
Principles of teaching and learning	59.87
Scientific writing	59.65
Educational needs assessment	57.96
Research in education and health system	57.91
Teaching methods and techniques	57.35
Educational planning	55.96
Program evaluation	55.75
Educational guidance and counseling	54.75
Professional ethics	53.8
Application of computers in research	49.7
Personal development	34.74

Table 2. Educational needs of faculty members in three areas of education, research, and personal development according to priority

Area	Title	Need for participation	Mean rank of each in areas
Education	Student assessment	60.66	57.01
	Principles of teaching and learning	59.87	
	Educational needs assessment	57.96	
	Teaching methods and techniques	57.35	
	Educational planning	55.96	
	Program Evaluation	55.75	
	Educational guidance and counseling	54.75	
	Professional ethics	53.8	
Research	Scientific writing	59.65	55.75
	Research in education and health system	57.91	
	Application of computers in research	49.7	
Personal development	Application of computers in education	34.74	34.74

Discussion

In this study, we tried to determine the educational and research needs of faculty members of Tabriz University of Medical Sciences, Tabriz, Iran so that educational priorities can be detected and utilized for improvements the education level.

Needs assessment is considered one of the fundamental elements of the planning process. Needs assessment comes to the forefront quite often wherever developing a plan or adopting some educational policies are required, and the logical basis of any program is the existence of a need or needs. Educational planners worldwide and in the organizations which deal with education are required to have convincing reasons for developing their educational plans. Needs assessment, in fact, is the collection and analysis of data based on which needs of individuals, groups, organizations, and societies are identified.[14] All conducted studies provide evidence for the importance and the priority of education over other faculty members' duties and educational needs. A study titled "Reviewing the Indicators for the Assessment of Clinical Faculty Members and Offering a Suitable Model for the Assessment" showed that the existing criteria and indicators for the assessment of faculty members have failed to depict the quality of their work and their performance.[14] In these indicators, low weight has been attached to education, and research is utterly important. All conducted studies show the importance and priority of education over other faculty members' duties and educational needs. The educational activity of faculty members should be valued properly, and outstanding educational activities and individual innovations should receive adequate attention to encourage innovations and motivations in the field of education.[14] Our study showed that student assessment was the top priority of faculty members of the University in education. Accordingly, 39.3% of faculty members had no history of participation in student assessment workshops. However, our study showed that 60.6% had requested participation in this workshop. This begets further investigation into the quality of the workshop in terms of educational content, schedule, teaching technique, and other influencing indicators on the quality of education. The workshop of principles of teaching and learning was declared the second educational need of faculty members. It should be noted that unlike student assessment workshops, and despite having a history of participation, faculty members considered this workshop an educational priority. The main source of this consideration was a lack of history of participation in this workshop. This also applies to educational needs assessment and educational guidance and counseling.

Generally, by categorizing educational needs in three areas of education, research, and personal development, and by considering mean ranks of each area, education was declared the top priority. Next came research, and personal development was the third educational need. some studies confirm the importance and priority of education compared to other areas of job description of faculty members.[14,15] A study conducted in the University of Massachusetts Medical School in the U.S. showed that senior operational managers of the university considered the need to improve teaching performance as part of the educational priorities of professors.[16] Another study conducted to assess educational needs of professors in Golestan University of Medical Sciences showed a desperate need for teaching methodology workshops as their top priority.[17] Of course, there are studies in which education is not found to be the first priority of faculty members. In another study, education was found the

fourth priority in educational needs. In this study, the need for education in research was the second priority.[11]

Results of our study indicate that priorities of faculty members of Tabriz University of Medical Sciences were research in education as scientific writing, research in education and health systems, and use of computers in research. The most researched need in one study was the skill of statistical analysis of data and the least researched was effective methods to communicate with industrial centers.[11]In the present study, the most important educational need was student assessment and the least was professional ethics. Other studies indicate that in education, faculty members stated the most important need as the way to foster continuous self-learning of students, and the least important as the need for lesson preparation.[11]

Table 3. Data related to educational needs of faculty members in the area of education

Workshop	Specific course title	History of participation		Need to participate in workshop	
		Yes	No	Yes	No
Principles of teaching and learning	Philosophy, concept, definitions in medical sciences education	48.2	51.8	45.1	54.9
	Learning theories and models	55.2	44.8	57.2	42.8
	Teaching and learning approaches and styles	56.6	43.4	59	41
	Medical education development trend in Iran and worldwide	30.6	69.4	56.8	43.2
	Essential challenges in current education	33.5	66.5	60.3	39.7
	Modern strategies in medical education	40.2	59.8	70.5	29.5
	Faculty members main roles	39.4	60.6	60	40
	Methods to facilitate student learning	46.2	53.8	70.1	29.9
Educational programming	Definitions, approaches, and educational planning levels	49.4	50.6	56.9	43.1
	Models and essential steps in development of curriculum	52	48	63.1	36.9
	Design of courses and lesson sessions	62.3	37.7	56.1	43.9
	Comprehensive plan of educational curriculum	46.2	53.8	46.1	35.9
	Methods and tools for management of programs and education courses	40.6	59.4	57.6	42.4
Teaching methods and techniques	Teaching principles and methods	74.4	25.6	53.2	46.8
	Teaching techniques in large groups, classes, conferences...	67.8	32.2	55.4	44.6
	Teaching techniques in small groups	69.8	30.2	52.8	47.2
	Modern teaching methods-1 (CPC,PBL, integrated education, inter-disciplinary education)	59.1	40.9	64.5	35.5
	Modern teaching methods-2 (morning report, outpatient education, clinical round, social education)	63.8	36.2	58.9	41.1
	Methods and tools of recording and enhanced learning	48.5	51.5	59.3	40.7
Student assessment	Learning evaluation methods-1 (written, oral and practical tests)	72.2	28.8	58.7	41.3
	Learning evaluation methods-2 (OSCE, Minicex)	61.6	38.4	63.5	36.5
	Methods of evaluation and analysis of tests	62.6	37.8	59.8	40.2
Program evaluation	Educational programs approach and evaluation methods	49.7	50.3	56.2	43.8
	Internal assessment using operational steps and methods	49.1	50.9	53	47
	External assessment and education validity	47.6	52.4	54.3	45.7
	Development and execution of educational groups comprehensive identity	43	57	59.5	43.5
Educational needs assessment	Educational needs assessment methods, sources and areas	34.6	65.4	56.3	43.7
	Educational needs assessment models	32.1	67.9	57	43
	Development and execution of a comprehensive needs assessment plan	29.6	70.4	60.6	39.4
Educational guidance and counseling	Communication skills	37.2	62.8	59.3	40.7
	Guidance and counseling methods in medical education	38.8	61.2	54.3	45.7
	Specific counseling techniques in special cases	35.6	64.4	51.4	48.6
	Guide professor and methods of enhancing academic progress	43	57	54	46
Professional ethics	Planning and education methods in the area of professional ethics and behavior	45.5	54.5	53.8	46.2
	Practical points in medical and university ethics	51.6	48.4	53.8	46.2

Table 4. Data related to educational needs of faculty members in the area of research

Workshop	Specific course title	History of participation		Need to participate in workshop	
		Yes	No	Yes	No
Research in education and health system	Research methods in health system	50.6	49.4	60.1	39.9
	Development and execution of a research project	63	37	51.8	48.2
	Specific techniques in educational research	42	58	61	39
	Methods and techniques in development of a questionnaire and data collection tools	53.9	46.1	57.7	42.3
	Analysis of research data	56	44	59.3	40.7
	Presentation of results	53.6	46.4	57.6	42.4
Scientific writing	Writing Scientific articles	72.5	27.5	53.6	46.4
	Scientific reports and development of CV	54.7	54.3	65.3	34.7
Application of computer in research	Electronic reference search	79.5	20.5	43.5	56.5
	SPSS	70.3	29.7	55.9	44.1

Table 5. Data related to educational needs of faculty members in the area of personal development

Workshop	Specific course title	History of participation		Need to participate in workshop	
		Yes	No	Yes	No
Personal development	Use of common educational software: Word	77	23	23.5	76.5
	Office	74.4	25.7	24.6	75.4
	Power point	76.6	23.4	22.6	77.4
	Excel	67.1	32.9	49.3	50.7
	Electronic education methods	64.6	35.4	53.7	46.3

Conclusion

To achieve effective and useful educational planning, observing the following appears necessary:

- A needs assessment committee within the Medical Education Research and Development Center, monitored by the medical sciences education group, should be established.
- The needs assessment committee can be one of the educational sub-committees of the center, holding meetings at least quarterly, and reviewed at least once a year.
- Given the results of needs assessment and priorities obtained, with the cooperation of the medical sciences education group, this committee should develop short, middle, and long-term educational programs for faculty members.
- To assess the effects of education and priority changes, an evaluation program must be developed and implemented.

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Ethical Issues

Participants' information was kept confidential.

Competing interests

The authors declare that there is no conflict of interests.

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