Designing the Comprehensive Educational Faculty Development Program in Kerman University of Medical Sciences Based on Kern Planning Model

Mahla Salajegheh[1,2*] , **Ali Norouzi[3]**

[1] Health Services Management Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

[2] Department of Medical Education, Education development center, Kerman University of Medical Sciences, Kerman, Iran

[3] Education Development Center, Zanjan University of Medical Sciences, Zanjan, Iran

Abstract
Background: Educational development of faculty members requires the adoption of clear and coherent strategies that pave the way for achieving goals in this area.
Objectives: This study aimed to design a comprehensive educational faculty development program in Kerman University of Medical Sciences.
Methods: In the current descriptive study, we designed a comprehensive educational faculty development program based on four steps of Kern's curriculum planning model from problem identification and needs assessment to the development of educational strategies in 2020. To implement the steps of problem identification and needs assessment, four focus groups were held with faculty members and some students.
Results: The educational needs of faculty members were determined based on the specific characteristics of the program audiences. As a result of the needs assessment, the specific educational needs of each target group were determined in 19 areas and 32 skills. Then, the specific goals and educational strategies of the program were developed.
Conclusion: The research led to the development of an educational comprehensive faculty development program. These results can help localize the educational needs of faculty members of different medical universities and improve the faculty development in the country.

Keywords: Faculty Promotion, Faculty Members, Program Development, Kern, Needs Assessment

Background

Given the role and position of faculty members in the development of academic institutions, attention to the issue of development of faculty members to effectively play their roles is considered an inevitable necessity (1, 2). In medical universities, the development of faculty members in numerous dimensions is critical due to their important role in community health (3). In addition, evolutions in health care organizations, the increasing complexity of health care, and the changing meanings of medical education, such as new methods of training, assessment, and learning, have led to enhancing requests from the faculty members in the fields of education, research, leadership, management, etc. The ultimate goal is to have creative and beneficial faculty members, successful researchers, and capable physicians (4, 5). To meet these needs, faculty members should acquire new knowledge,

skills, and abilities; therefore, many medical universities in the world have planned and implemented educational programs to increase the competencies of faculty members (6, 7).

Development of faculty members means activities planned to prepare or assist faculty members to perform their roles in the fields of education, research, leadership, and management, leading to productivity, usefulness, efficiency, as well as personal and professional development to achieve the goals, perspectives, and missions of the organization (4, 7-11). In other words, development of faculty members is defined as a process that prepares them to play their various roles and strengthens them to be productive and up-to-date (12).

Faculty development programs usually are planned and implemented by focusing on different roles of faculty members such as educational, research, professional, and

individual roles. Accordingly, this study aimed to improve the educational skills of faculty members that ultimately leads to students' high-quality education and better learning (13). Development of faculty members in the educational dimension requires the adoption of clear and coherent strategies that pave the way for achieving goals in this area.

In a systematic review, Steinert *et al.* (2016) reported some of the results of faculty members' educational development programs at both the individual and organizational levels. In this article, researchers emphasized designing development programs according to the needs of the faculty (5). The results of another systematic review by Phuong *et al.* (2017) showed positive behavioral changes in the faculty members, including improved teaching skills, better leadership positions, and increased academic outputs (13). The results of Guraya *et al.* (2019) showed the effect of faculty development programs on strengthening the knowledge and professional capabilities of participants in these interventions (14). Piryani *et al.* (2018) concluded that faculty members' self-confidence in teaching significantly increased after participating in faculty development programs (15). In another study, Colella *et al.* (2019) showed the participants' satisfaction with holding the development programs and the acquired knowledge. The highest changes in professional behavior were reported regarding receiving and providing feedback, assigning and delegating responsibilities and duties, and improving communications (16). Saiki *et al.* (2019) showed the benefits of the faculty development programs, such as increasing knowledge about clinical education methods by focusing on respect and trust toward learners, increased self-confidence in teaching, and the positive role of group interactions in clinical education (17).

In Iran, some studies have also been conducted on educational faculty development programs in medical universities. In a study in 2015 at Shiraz University of Medical Sciences, Kojuri *et al.* found that positive changes occurred in faculty members' knowledge regarding teaching methods, providing feedback, student assessment, time management, and the use of this knowledge in the real environment (18). Dehghani *et al.* proceeded with designing, implementing, and assessing a medical education fellowship course at Kerman University of Medical Sciences in 2019. The results indicated that most faculty were satisfied with the overall quality, increased knowledge, positive attitude changes in faculty members, and the use of what was learned in teaching students (19).

This report well represent the value and position of educational faculty development programs. Despite valuable practices in the field of development of faculty members at Kerman University of Medical Sciences, no comprehensive program has been developed to include various aspects of this important activity so far. On the other hand, dealing with education needs going through various stages and requires practices called planning. In this regard, one of the educational planning models is

Kern's model, which is a six-step approach, including problem identification and needs assessment, needs assessment of the program's target group, identification of general and specific objectives, development of educational strategies, program implementation, and assessment (20). This comprehensive model has been designed for the development of an educational program to be used specifically in medical education (21). A study by Loyal *et al.* (2018) was a very valuable experience of designing educational courses for faculty members based on Kern's model. The program designed in this study was such that each of the new faculty members was trained in three ways: holding a professional development seminar, counseling session with peers, and holding an introduction session in the department (22). Therefore, since the present study aimed to design a comprehensive educational faculty development program in Kerman University of Medical Sciences, the planning of the initial four steps was based on Kern's model.

Objectives

This study aimed to design a comprehensive educational faculty development program in Kerman University of Medical Sciences.

Methods

In current descriptive research, we designed a comprehensive educational faculty development program in Kerman University of Medical Sciences in 2020 based on four steps of Kern's curriculum planning model from problem identification and needs assessment to the development of educational strategies. The research was approved by the Research Ethics Committee of Kerman University of Medical Sciences (code: IR.KMU.REC.1399.636). Participants entered the study voluntarily and were free to leave the study at any stage. Also, the research aims and ethical issues were explained to participants in written and oral forms. The participants were also assured of the confidentiality of their information, and they were explained that the results would be used only for research aims.

The first step of Kern's model is related to problem identification and needs assessment. In this research, a focus group was held to explain the problem and to study its dimensions in the university. An electronic invitation was sent to some faculty members and students to attend the meeting. The purpose of the invitation was announced to them, and if they agreed, they were included in the study. The reason for inviting students was to get their opinions on the educational skills required by faculty members to improve the teaching-learning process. The criterion for inviting individuals to this meeting was having management experience, holding faculty development programs, and students interested in participating in the university's educational development affairs. Attempts were also made to consider a variety of different educational groups among the invited individuals. In this virtual meeting, individuals' opinions were collected regarding the educational needs of faculty members, as well as the content and implementation

procedure of faculty members' development programs. On the day of organizing the focus group, the consent of each participant was obtained again, and they were allowed to record their voice.

The focus group meeting was started with the general question "In what areas do you think faculty members need educational skills?" by the chairperson and continued with specific questions such as "What programs are needed to provide these educations?", "What are the necessary facilities for educating faculty members?", and the like. The meeting lasted for about 90 minutes. The chairperson tried to engage all participants in the discussion and give everyone the opportunity to comment, explain, and interpret their experiences. All conversations were recorded, and notes were taken from the discussions and expressed points. At the end of the meeting, the researchers examined and analyzed the statements of the group members. Then, using the conventional content analysis method, which is originated from the inductive content analysis approach, important and key phrases regarding the educational needs of faculty members were extracted.

In the second step of Kern's model, the needs assessment of the target group is performed. In this study, based on the results of the first step and the information obtained from the review of texts, a list of educational needs of faculty members was prepared. Given that the program's target group is the faculty members as the main audiences of development programs, three focus group meetings (involving 15, 10, and 18 individuals) were held with some university faculty members. Prior to focus group meetings, a list of extracted needs in the previous step was prepared and emailed to participants. Each meeting lasted for approximately 45 minutes. In these meetings, an attempt was made to have a variety of different educational groups.

In the third step of Kern's planning model, the general and specific goals of the program are formulated. In this study, considering the results of needs assessment in the previous steps, the general and specific goals of the program were written and provided to four experts in the scientific committee of the faculty development unit of the university, and necessary corrections were made based on their opinions.

In the fourth step of Kern's planning model, the educational strategies required for the program are developed. In this research, based on the information obtained from the first and second steps, as well as the type of educational goals, the development of appropriate educational content and method were performed. The results were then submitted to four experts in the scientific committee of the faculty development unit of the university, and necessary corrections were made based on their opinions.

Also, for a more accurate review and to receive more opinions from experts in this field, a draft of the comprehensive educational faculty development program was sent to the officials of educational development offices of faculties and hospitals in the university (12 individuals). The opinions of all experts were then included in the

program, and necessary changes were made. Since the fifth (program implementation) and sixth (program assessment) steps of Kern's model were beyond the objectives of the present study, we ignored applying them in this study.

Results

A total of 15 experts participated in the focus group meeting held for problem identification and needs assessment in the university dimension. Of these, 10 individuals were faculty members (six from basic sciences and four from clinical sciences) and five individuals were students (three medical students, one pharmacy student, and one graduate student of anatomical sciences). According to the results of this step, the educational needs of faculty members were determined based on the characteristics of the audiences of educational faculty development programs. As a result of this step, the needs were identified in six categories, including the special needs of new faculty members, the special needs of faculty members applying for promotion from instructor to assistant professor or from assistant professor to associate professor, the special needs of faculty members applying for promotion from associate professor to professor, the special needs of faculty members applying for promoting specialized knowledge of medical education, the special needs of instructors of educational faculty development programs, and the special needs of future faculty members (PhD students and residents).

Based on the results of the focus group meetings held in the second step, the special educational needs of each target group were identified, which included 19 areas and 32 skills (Table 1). The basis for selecting the target groups in dividing the educational needs of faculty members was the executive instruction of educational faculty development programs for newly employed faculty members in the university and the quality criteria for mandatory educational faculty development programs for new faculty members announced by the Education Development Center of the Ministry of Health and Medical Education (23).

The goals formulated in the third step of Kern's model regarding the comprehensive educational faculty development program included the general goal and specific goals. While the general goal was promoting the educational capabilities of faculty members and improving the organization performance, the specific goals included preparing faculty members to play their role as a teacher in the university upon arrival, readiness to acquire more capabilities during the period of activity as a faculty member in the university, flexibility of courses according to the participants' conditions, attention to different levels of audiences, specializing training courses along with basic development, and strengthening the participation of the development offices of colleges and hospitals in the universities in the development programs.

In the fourth step, the educational strategies considered for the comprehensive educational faculty development program involved a wide range of long-term or short-

Table 1. The special educational needs of the target groups of faculty members

Target Group	Area/ Skill		Educational Strategy
New faculty members	Education	Introductory curriculum planning	Interactive lecture, e-learning
		Basic teaching methods	
		Preliminary student assessment	
	Research in education	Preliminary research method	Interactive lecture, counseling
	Scholarship	Preliminary scholarship	Interactive lecture, counseling
	Educational management and leadership	Preliminary educational management and leadership	Interactive lecture, e-learning
	Communication skills and professionalism	Basic communication skills	Interactive lecture, counseling, providing movies and scenarios
		Basic professionalism	
	University management and regulations	Basic university management and regulations	Interactive lecture, e-learning
Faculty members applying for promotion from instructor to assistant professor or from assistant professor to associate professor	Education	Intermediate curriculum planning	Interactive lecture, e-learning
		Intermediate teaching methods	
		Intermediate student assessment	
	Research in education	Intermediate research method	Interactive lecture, counseling
	Scholarship	Intermediate scholarship	Interactive lecture, counseling
	Educational management and leadership	Intermediate educational management and leadership	Interactive lecture, e-learning
	Communication skills and professionalism	Intermediate communication skills	Interactive lecture, counseling, providing movies and scenarios
		Intermediate professionalism	
Faculty members applying for promotion from assistant professor to professor	Education	Advanced curriculum planning	Interactive lecture, e-learning
		Advanced teaching methods	
		Advanced student assessment	
	Educational management and leadership	Advanced educational management and leadership	Interactive lecture, e-learning
Faculty members applying for promoting specialized knowledge of medical education	Education	Curriculum planning	Interactive lecture, e-learning
		Teaching methods	
		Plan/ student assessment	
	Educational management and leadership	Advanced educational management and leadership	Interactive lecture, e-learning
Instructors of educational empowerment courses for faculty members	Education	Teaching techniques in workshops, virtual education, and e-learning, principles of holding an interactive workshop	Interactive lecture, e-learning
	Communication skills and professionalism	Verbal and non-verbal communication techniques	Interactive lecture, counseling, providing movies and scenarios
Future faculty members (PhD students and assistants)	Education	Preliminary curriculum planning	Interactive lecture, e-learning
		Basic teaching methods (classroom and patient bedside)	
		Preliminary student assessment	
	Communication skills and professionalism	Basic communication skills	Interactive lecture, counseling, providing movies and scenarios
		Basic professionalism	

term, formal or informal, and individual or group activities including workshops, seminars, mentorships, e-learning, online learning, and longitudinal development programs.

Discussion

This study was conducted considering the need for a comprehensive educational faculty development program designed based on the specific characteristics and needs of different audiences. In this study, Kern's planning

model was used to design the comprehensive educational faculty development program in Kerman University of Medical Sciences. The specific educational needs of faculty members were determined in 19 areas and 32 skills and the specific goals and educational strategies of the program were developed.

Steinert *et al.* (2010) investigated the reasons for participation or non-participation of clinical faculty members in development programs; the most important factors for the attendance of faculty members at the mentioned courses were found to be providing a suitable environment for personal and professional growth, the proportion of the development programs' content to participants' needs, and a good opportunity to communicate with colleagues. Also, one of the most important obstacles for not participating in development programs was suggested to be the inconsistency of the goals and content of the course with the needs of faculty members. Finally, it was concluded that the use of comprehensive and codified programs for development courses would increase the acceptance and participation of faculty members (24). In 2016, in a systematic review to evaluate faculty members' development programs between 2002 and 2012, Steinert *et al.* emphasized designing the appropriate content of development courses associated with the needs of the audiences and using proper educational methods based on the principles of adult learning such as experimental learning (5). In a review study in 2019, Guraya *et al.* emphasized the necessity of needs assessment and designing development programs in response to the needs of faculty members (14).

Numerous studies have designed educational development courses for faculty members based on needs assessment using different methods such as questionnaires and interviews. The results of the present study are in line with the findings of Behar-Horenstein *et al.* (2014), indicating educational priorities for faculty development programs from the perspective of faculty members of the School of Dentistry in the fields of education, assessment, scholarship, and educational management and leadership. In the findings of this study, it was stated that designing a development program adjusted to the needs of faculty members before implementing the program would lead to promoting professional growth and ensuring that the provided services are adapted to the needs (25).

Dias *et al.* (2017) examined the factors and barriers effective in the success of faculty development courses and reviewed their educational needs in 22 nursing schools in Pakistan using a questionnaire. The results showed the educational needs in the fields of curriculum planning, teaching and learning, and research in education, even in faculty members with specialized qualifications and high work experience (26). Some of the findings of this research in the areas required for educational priorities are similar to the results of the present study.

The results of the present study are in line with the findings of the research by Shah *et al.* (2018), which along with designing the faculty development program,

determined the educational priorities of faculty members using a questionnaire and reported needs such as achieving more skills in the fields of educational capabilities, assessment, and educational management and leadership (27).

In 2018, Manzoor *et al.* examined the educational needs of faculty members of medical and dentistry schools for faculty development courses in Pakistan. The results showed the educational priorities in the fields of teaching and learning psychology, education and assessment skills, research in education, educational management and leadership, and professionalism, which in some cases were consistent with the results of the present study (28).

One of the strengths of this study, which distinguishes it from previous research, is the use of a logical, systematic, dynamic, and interactive approach to planning, which in addition to needs assessment, it addresses other critical stages of educational planning, including setting the goals and educational strategies of the program. These steps were considered in the comprehensive educational faculty development program in Kerman University of Medical Sciences at the design stage.

One of the limitations of this study was the lack of willingness and motivation in participants to collaborate in focus groups due to a busy work schedule and lack of time. To eliminate this limitation, an attempt was made to justify the faculty members about the role of this research in improving the quality of the development programs of faculty members and creating and promoting organizational development at Kerman University of Medical Sciences.

Conclusion

The results of this research led to the development of a comprehensive educational faculty development program in Kerman University of Medical Sciences. This program is undoubtedly rooted in the real educational needs of faculty members and meets the needs of specific audiences. Applying the results of this study can help localize the educational needs of faculty members of medical universities and improve the development programs of faculty members in the country.

Supplementary material(s): is available here [To read supplementary materials, please refer to the journal website and open PDF/HTML].

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Ethical Approvals: The research was approved by the

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