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FACULTY DEVELOPMENT IN MEDICAL EDUCATION: A COMPREHENSIVE APPROACH

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**It goes without saying that no man can teach
successfully who is not at the same time a student.**

Sir William Osler

TO

All medical teachers and health professionals who
train good doctors and healthcare staff to serve for
the well-being of humans

ABSTRACT

The functioning and success of all medical universities and schools depends almost entirely on faculty members, on how well these individuals teach, the quality of the clinical services and healthcare they provide, and their contributions to scholarly activities. If faculty members are to be able to fulfill the mission and multiple roles of their institutions, besides having skills in clinical practice and healthcare delivery, they need diverse proficiencies in areas such as education and leadership. Unfortunately, they seldom develop competence in those areas during their formal training, and thus questions arise regarding what strategies are most suitable to prepare faculty members for their diverse tasks and how the performance of those professionals should be evaluated. Faculty development programs represent a highly valuable approach in this context, because they can promote the success of both individual faculty members and entire institutions.

The aim of the present project was to use new and existing knowledge about faculty development to explore and enhance such activities in Iranian medical schools. To reveal various aspects of the integrated healthcare-education context of those institutions we applied a mixed qualitative-quantitative research design. Our survey studies revealed comparatively high levels of role stress among faculty. This was most noticeable for the dimensions of role overload, inter-role distance, resource inadequacy, and role-expectation conflict where stress levels were the highest. Considering faculty rank and department, relatively lower levels were found among full professors and faculty members affiliated with basic sciences departments. To elucidate the Iranian faculty development system, we devised an instrument that used a new and broader approach to assessment of faculty development activities. This tool could guide administrators in their efforts to construct and identify effective faculty development programs and also to map the existing situation. Using this instrument, we evaluated managerial and pedagogical aspects of faculty development to help administrators understand faculty and program requirements, and this work identified strategies that could improve faculty productivity in Iranian medical schools.

The success of any faculty development initiative depends on several key factors: identification of the specific needs of faculty members, early involvement of faculty, introduction of programs such as faculty-oriented partnership, and securing the continuity of programs. Above all, faculty development is a necessary corollary to faculty evaluation. We investigated faculty evaluation systems with the aim of

achieving comprehensive faculty development. We adapted the Personnel Evaluation Standards checklist to fit the context of Iranian medical universities, which gave us an instrument that could address the diverse roles given by the faculty members. Our results demonstrate that the four principles of utility, feasibility, propriety, and accuracy were occasionally or frequently met in all of the faculty members' roles. Mean scores were highest for evaluation of teaching and research, and they were lowest for clinical and healthcare services, institutional administration, and self-development.

Although faculty evaluation and faculty development should be two sides of the same coin, our most striking observation was dissociation between those two systems. Despite the merging of two major missions (medical education and provision of healthcare) in Iranian medical universities, a challenge remains because some components of the organizations have not actually been completely integrated. We hope that the findings of our studies will further encourage medical universities in general and medical schools in particular, to give faculty development a central role in the strategic planning, management, and leadership of those institutions.

Key words: medical education; healthcare; faculty development; faculty evaluation; integration; reform; multiple roles.

LIST OF PUBLICATIONS

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LIST OF ABBREVIATIONS

MoHME	Ministry of Health and Medical Education
EDC	Educational Development Center
EDO	Educational Development Office
ORSS	Organizational Role Stress Scale
PES	The Personnel Evaluation Standards
FDP	Faculty Development Program
FD	Faculty Development
FE	Faculty Evaluation

1 . INTRODUCTION

In 1985, the healthcare services and medical education in Iran were integrated, and the Ministry of Health and Medical Education (MoHME) was established to lead the new organization. Since that time, many major changes and improvements have been made at the levels of management, medical education, and healthcare, but there has not been any appropriate system for monitoring, evaluating, and documenting that process.

One response to the mentioned reform has been to take faculty development into consideration. The roles and expectations of faculty members and the missions of the medical schools have changed. Inasmuch as the human capital of every university consists of the academic staff, spending time and resources on energizing faculty members can provide a return on the investment in the form of creativity, productivity, higher morale, and self-revitalization.

Therefore, after two decades, I realized that it was time to review one of the most important resources of any medical school, that is, its faculty members. I decided to investigate how development activities had been established to address the multiple roles of those professionals. Moreover, I wanted to study the exciting situation and effectiveness of the faculty development programs that were delivered, with the objective of finding suitable ways to solve problems and perhaps also enhance the activities that are currently in progress. To achieve that goal, I embarked on an empirical and conceptual analysis of faculty development activities in Iranian medical schools.

The first study of my doctoral research explored medical school faculty members with regard to personal aspects and their multiple roles and responsibilities. The second and third studies dealt with organizational aspects of faculty development and activities. Finally, the fourth study addressed faculty evaluation systems and the relationship between faculty evaluation and development activities.

2 BACKGROUND

2.1 Current trends in medical education

We live in a momentous time, and the future calls for new paths and fundamental changes in medical education. The major trends in that context consist of the aspects and driving forces underlying the changes that occur, including: demographic transformations, shortage of workforces, which is especially acute in certain regions and specialties; the emphasis on clinical quality and patient safety; financial challenges, such as rising demands and uncertainty in reimbursement and revenue collection; the pursuit of excellence; and the pressure to adopt information technology. In addition, the structure of medical schools has been influenced by an exponential increase in medical knowledge and changes in healthcare delivery, doctor availability and workload, patient expectations, and the needs and requirements related to students. To keep pace with changes, quality improvement and innovations in medical education are now being addressed by many important global associations and organizations, among them the World Federation for Medical Education (WFME), the Institute for International Medical Education (IIME), the American Medical Association (AMA), the Association for Medical Education in Europe (AMEE), the Canadian Association for Medical Education (CAME), the Association for the Study of Medical Education (ASME), the Association of American Medical Colleges (AAMC), the Accreditation Council for Graduate Medical Education (ACGME), the Australian Medical Association (AMA), and the Asia Pacific Medical Education Conference (APMEC). It is clear that a new vision is needed to address the challenges of medical education.

There is also a need for a new model to shape the minds and hearts of future healthcare professionals. This requires adoption of new curricula, novel pedagogies, and innovative forms of assessment, and, of course, even well-developed faculty members, since those individuals represent one of the most important assets of an academic institution [1].

2.2 Medical education as a context

To understand the importance of faculty members and their role in medical education, it is helpful to consider the relevant context. In general, but not exhaustively, medical education comprises three main components:

1. A curriculum
2. An educational environment
3. Teachers/Faculty members

The curriculum concerns what is learned, how it is learned, how it is assessed, and how learning is structured. Students need to become aware of the curriculum they will follow, and that can be ensured by applying various explicit means, such as course syllabi, classes to be attended, and examinations to be prepared for. The teachers produce the course documentation in a process that includes discussing and learning together with other faculty members—a community of practice.

The educational environment or climate has also been highlighted as a key aspect in this context [2-4], and both students and teachers are aware of that aspect of their university. Is the teaching and learning environment very competitive? Is it authoritarian? Is the atmosphere in classes and field placements relaxed or in some ways stressful? These are all key questions in determining the nature of the learning experience [4]. It has been suggested that the content studied and the teaching methods or examinations that are used are more tangible than the educational environment [5]. Despite that, the importance of the environment should not be underestimated, and the interest in studying learning environments in health professions such as medicine has increased in recent years. One reason for that may be the growing diversity of both the student population and the student requirements.

Faculty members constitute the third major component of medical education, not only due to their direct influence on the teaching and learning process, but also because they play an important role in shaping the other two components (i.e., curriculum and environment).

Each of these three components has an important function in medical education, and, in combination, they can affect student achievements as well as the quality of the instruction provided, and hence they are also associated with the issue of patient safety [6,7]. However, this thesis deals primarily with one of the three components, namely,

faculty members. To maintain the quality of medical education, academic institutions must invest in development activities that are intended to enhance the performance of individual faculty members. In light of the complexity of the challenges facing modern medical schools, this commitment has never before been as strategically important as it is today. Therefore, academic institutions in general, and medical schools in particular, have responsibilities towards their faculties.

2.3 The responsibilities of medical schools towards faculty members

In most countries today, society is demanding that medical schools participate in solving the pressing problems of national and community healthcare, and this obligation is particularly apparent for community-based medical schools. In Iran, such institutions of learning are directly responsible for delivery of healthcare, and they are extensively involved in organizing the healthcare system. Accordingly, medical schools are not only highly responsible for improvement and provision of healthcare, they also play an important role in improving medical education and ensuring that the graduates meet certain standards of professionalism. Besides these public expectations, medical schools also have obligations towards the faculty members, and those responsibilities can be divided into six categories:

1. Recruitment (hiring of faculty should be based on subject knowledge, ability to perform and obtain funding for research, clinical expertise, and teaching competence)
2. Retainment (faculty members should be assigned appropriate roles)
3. Re-energization (faculty members should be kept enthusiastic and up-to-date)
4. Recognition (faculty should be given recognition for good teaching)
5. Rewards (e.g., faculty should be rewarded for good teaching)
6. Respect (faculty members should be respected)

If a medical school is to succeed, it has to accept these responsibilities. Spending time and resources on faculty development will have positive effects on things like creativity, productivity, morale, and self-revitalization [8]. The crucial role of faculty development activities and initiatives implemented at medical schools is clearly illustrated by this alarming statement made by Professor Ronald M. Harden [6]: “*There is no such thing as curriculum development, only staff development.*” Thus faculty development is essential for ensuring and better addressing the obligations that medical schools have towards their faculties. Unfortunately, planning and introducing a faculty development program is not an easy task [7].

2.4 Faculty development

Discussion of the term “faculty development” can be initiated by raising some questions: How is this term defined? Why is such development important? What are common formats of faculty development programs? [9,10]. What makes faculty development programs effective, and what steps must be taken to design such activities?

2.5 Definitions of faculty development

Faculty development is defined in different ways in the literature. The terms instructional development, staff development, faculty development, academic development, and educational development are all used in higher education systems in different parts of the world. Although these designations have slightly different meanings, they have a common core in that they refer to the work conducted by developers to study and enhance the professional performance of university academics [11]. In this thesis, I use only the term faculty development, because it is often applied in the field of medical education [12].

The definition of faculty development has evolved and been expanded over the past few decades, and various definitions have been used in higher education. In 1975, Gaff [13] referred to faculty development as the “activities that help teachers improve their instructional skills, design better curricula, and/or improve the organizational climate for education,” and, at about the same time, Centra [14,15] described it as the broad range of activities used by institutions to renew or assist faculty members in undertaking their expected roles. A decade later, Bland and Stritter [16] broadened the definition by mentioning a shift in the focus of faculty development from the individual teacher to the needs of departments and institutions. Obviously, the role of a faculty member is not limited to teaching, and Bland et al. [10,17] subsequently stated the following: “Faculty development is a planned program or set of programs designed to prepare institutions and faculty members for their various roles”. This broader and more inclusive definition has become generally accepted by the medical education community [18].

The concept of faculty development was further expanded after consideration was given to the academic base of institutions. In 1998, Wilkerson and Irby [19] used a

comprehensive approach to faculty development by saying that it is “a tool for improving the educational vitality of our institutions through attention to the competencies needed by the individual teachers and to the institutional policies required to promote academic excellence”. Also, Sheets and Schwenk [20] defined faculty development as “Any planned activity to improve an individual’s knowledge and skills in areas considered essential to the performance of a faculty member in a department or a residency program (e.g. teaching skills, administrative skills, research skills, clinical skills)”.

Steinert and Mann [10] took into account the institutional academic context and wrote the following: “In many ways, faculty development programs aim to help faculty members acquire the skills relevant to their institutional and faculty positions and to sustain their vitality, both now and in future”. Another comprehensive definition of faculty development at the institutional level was provided by McLean et al. [7]: “The personal and professional development of teachers, clinicians, researchers and administrators to meet the goals, vision and mission of the institution in terms of its social and moral responsibility to the communities it serves.”

These are but a few of the contemporary definitions of faculty development. To summarize, let us consider the importance of such development and its areas of involvement, which has been described as follows by Steinert [12]:

Faculty development, or staff development as it is often called, has become an increasingly important component of medical education. Staff development activities have been designed to improve teacher effectiveness at all levels of the educational continuum (e.g. undergraduate, postgraduate and continuing medical education) and diverse programs have been offered to health care professionals in many settings.

2.6 The importance of faculty development

After pondering the definitions presented above, it is of interest to explore why faculty development is necessary. Over the last few years, faculty development has become a very popular term in the lexicon of higher education [7] in general and medical education in particular. This section discusses in detail the changing roles of faculty members and the diversity of those roles, and the expectations and accountability that are built into most of them.

It has been emphasized that medical school faculty members are trained in the roles of their discipline (e.g., clinical duties and healthcare delivery) but are essentially not taught to succeed as educators, researchers, scholarly writers, or administrators. In most cases, they do not learn academic skills related to curriculum development, instruction, evaluation, research, scientific production, or administration [7,18]. Very few faculty members are trained to manage their roles as teachers [9]. In addition, new tasks, as well as advances in medicine and new instructional techniques, often mean that old skills may be inapplicable or insufficient. On the other hand, the faculty members of today must acquire new competencies in areas such as information technology, evidence-based medicine, professionalism, problem-based learning, interdisciplinary teaching, web-based instruction, and new teaching strategies [18,21].

But how should these skills and competencies be learned? If we reanalyze the above-mentioned definitions of faculty development, it appears that the purpose of such endeavors is to prepare faculty members for their roles by teaching them the skills they need to manage their institutional settings and positions, and to sustain their current and future activities [7,18,19]. Thus, in response to the question that was posed above, it is clear that faculty development is important because it is an effective approach. Such development is essential for the success of both individual faculty members and the institution as a whole [22]. Furthermore, it is a central strategy for ensuring and complying with institutional missions, since it involves the design and implementation of a system that appropriately aids faculty members in acquiring the skills and competencies they need to manage their multiple roles and expectations.

2.7 Common formats of faculty development programs

Faculty development has been expanded over the past few years in order to strengthen the academic base of institutions of higher learning. This has been done by providing different programs, which can be divided into those with the most common formats and those with alternative formats [12]. The most common formats include workshops and seminars, short courses, sabbaticals, and fellowships, and the alternative formats comprise integrated longitudinal programs, decentralized activities, peer coaching, mentoring, self-directed learning, and computer-aided instruction.

Workshops represent the most popular format, because they can apply a variety of teaching methods, such as interactive lectures, small-group discussions and exercises,

role-playing and simulations, and experiential learning, and thus offer inherent flexibility and promote active learning. Nevertheless, given the changing needs and priorities of healthcare professionals working in medical schools, alternative formats should also be considered [9,12]. The context of each academic institution is unique, and therefore there is no wide-ranging or “quick-fix” model for faculty development [7]. The specific institutional settings in which the development occurs and the needs of faculty members under those particular conditions should be taken into consideration when determining the appropriate formats and contents of the implemented programs.

2.8 Designing effective faculty development programs

In recent years, much emphasis has been placed on the importance of focusing faculty development programs not only on the needs of the targeted individuals, but also on organizational aspects. Although improvement of the individual is undoubtedly a vital aspect, it is sometimes regarded as being less consequential compared to institutional growth. Hence, in reality, faculty development often actually entails making the personnel fit the purpose of the institution [23]. According to Bland [17,24,25], faculty development activities are designed to improve faculty members with respect to their commitment to their work and their ability to achieve both their own goals and the objectives of the institution. With that in mind, it was concluded that effective faculty development has two important features: first, a broad perspective that continuously searches for and tries to address all the aspects that impact faculty success; second, systematic and rigorous attention given to each of the steps in the faculty development process. Therefore, when designing and implementing faculty development programs, it has been proposed that it is important to understand not only the objectives of individual faculty members, but the goals of the organization as well. If that is indeed the most suitable approach, then, from the standpoint of the organization, it will make sense to support development programs focused on individual faculty members, because that will help accomplish the missions of the organization.

There is also another reason why the organization should be taken into consideration in faculty development efforts. In order to succeed, faculty members should share the vision and values of the organization so that they can apply the skills they learn. This means that the organization should have special characteristics that facilitate faculty success, including clear organizational goals, equitable personal policies, effective reward structures, and a supportive climate [26]. Thus the goals of individual faculty

members, the objectives of the institution, the levels of ability of the individuals, and the characteristics of the institution are all essential parts of creating an effective faculty development program. Steinert and Mann [10] have declared that faculty development activities should link individual and organizational needs, and also pair organizational development with development of individual skills.

In addition to the aspects mentioned above, other important characteristics of an effective faculty development program are as follows: it should have a clearly stated and readily perceived mission; it should be systematically designed to target specific sub-groups; it should cover a range of skills, not just teaching, and it should teach theory and practical applications, and also comprise work practice; the personnel running the program should maintain contact with the participants; trainers should be committed to the program and be knowledgeable about content areas related to the disciplines of the participants; the participants should attend program activities in groups from the same institution; support should be available to participants who are “back home” [17]. Three other important features can be added to the list: faculty member should be involved in the process of designing and implementing their own program; faculty assessment should be used as an initial step; changes should be made in the institutional environment [27].

The ten practical guidelines listed here can help academic institutions design and evaluate effective faculty development programs [10,12,21]:

1. Understand the institutional/organizational culture
2. Determine appropriate goals and priorities
3. Conduct needs assessments to ensure relevant programming
4. Develop different programs to accommodate diverse needs
5. Incorporate principles of adult learning and instructional design
6. Offer a diversity of educational methods
7. Effectively promote “buy-in” and market
8. Work to overcome commonly encountered challenges
9. Prepare staff developers
10. Evaluate—and demonstrate—effectiveness

2.9 The role and responsibility of faculty members

After this discussion of faculty development programs and their capacity to address different roles and expectations of faculty members, let us now examine the roles of those professionals in this context. Faculty members have different functions and responsibilities that are determined by the mission of their academic institutions, their academic disciplines and rank, and whether they hold administrative or leadership positions. Their academic role can include teaching, research, practical services (clinical and healthcare duties), administration, and external professional activities.

The complexity and challenges in modern academic medical centers have led to dramatic changes in the roles and responsibilities of faculty members. For example, we can consider the teaching role, or, in the words of Harden and Joy [28], the *medical teacher*. Those authors conducted an in-depth investigation aimed at elucidating the characteristics of the *good medical teacher* and identifying the different roles of such a professional, and they discussed their findings in the context of the changes that have occurred in medical education. It has been argued that there are three main reasons for those transformations [28]. First, it seems that the major changes have been associated with the introduction of *integrated teaching*, *problem-based learning*, *community-based learning*, and a more systematic approach to *curriculum planning*. In addition, new assessment and evaluation methods with increased emphasis on *performance assessment* have been applied, and novel clinical assessment techniques such as the *objective structured clinical examination* have been established, and *standardized patients*, *logbooks*, *portfolio assessment*, and *self-assessment* are now in use as well. Second, there is increased emphasis on the student, and the shift from a teacher- to a student-centered approach has resulted in replacement of the terms “teacher” and “teaching” with “learner” and “learning.” Third, considering the changing role of the teacher, observations highlight the more complex demands that are now being placed on faculty members and the varying nature of their tasks, which include new academic roles and the diversification of existing ones. One question comes to mind at this point: Do faculty members appreciate these changes and new expectations? Personally, I say no, they do not! I give that answer because I believe that they have been slow to embrace and identify themselves with the new roles that they are expected to fulfill.

Thus, according to Harden and Crosby [28], the medical teacher plays twelve roles in six areas of activity, as shown in Table 1. This gives a clearer indication of the different

views that are associated with the tasks performed by such teachers. Although the various roles are interconnected and closely related to one another, even a good teacher does not need to be competent in all twelve. Nonetheless, the guide published by Harden and Crosby gives an idea of the complex picture of the teaching role, and it underlines the need for rigorous enquiry when developing faculty development programs.

Table 1. The twelve roles of the medical teacher* and other non-teaching roles of medical faculty members

TEACHING	
Areas of activity of the teacher	Teacher's role
1. As an information provider	(1) Lecturer in classroom setting
	(2) Instructor in clinical or practical class setting
2. As a role model	(3) On-the-job role model (e.g., in clinics, ward rounds)
	(4) Role model in the teaching setting
3. As a facilitator	(5) Mentor, personal adviser, or tutor for a student or group of students
	(6) Learning facilitator, e.g., supporting students in problem-based-learning conducted in small groups in the laboratory, in integrated practical class sessions, or in the clinical setting
4. As an assessor (examiner)	(7) Planner of or participant in formal examinations of students
	(8) Curriculum evaluator, responsible for evaluating the teaching program and the teachers
5. As a planner	(9) Curriculum planner, participating in overall design and planning of the curriculum
	(10) Course organizer, responsible for planning and implementing a specific course within the curriculum.
6. As a resource developer	(11) Production of study guides to support the student learning in the course
	(12) Developing learning resource materials in the form of computer programs, videotapes, or printed material that can be used as adjuncts to lectures and other sessions
RESEARCH	
CLINICAL/HEALTH SERVICES	
ADMINISTRATIVE SERVICES	
EXTERIOR ACTIVITIES	

*Adapted from AMEE guide no. 20 published by Harden and Crosby [28]

2.10 An overview of medical faculty roles and related stress

2.10.1 Faculty roles, role conflict, and role stress

To begin with, it is necessary to define the concepts that are related to “role,” such as role overload, role conflicts, and organizational role stress. Role refers to a set of

expectations about behaviors in a social structure and as an area-defining feature of groups and teams [29]. Conceptually, a role can be a pattern of behaviors perceived by an employee [30]. On the other hand, role is a key element in understanding how any individual functions in any system; it is through his or her role that a person interacts with and is integrated into a system. Role has been defined in several ways, but here the term is used to refer to any position that is held by a person in an organization and that is delineated by the expectations of various significant people in relation to that position [31].

Stress is the result of a transaction between a person and his or her situation, and the amount of stress experienced depends on the adequacy of the individual's personal resources and coping strategies in relation to dealing with the situation at hand [32]. Stress has been defined as a process that causes or precipitates individuals to believe they are unable to cope with the situation facing them, and the feelings of anxiety, tension, frustration, and anger which result from the recognition that they are failing in some way and the situation is getting out of their control [32]. Sustained stress may lead to anxiety and depressive reactions, as well as physical health problems [32,33].

Organizational stress originates in demands that the organization makes on the individual. Stress is built up in the concept of role, which is conceived as the position a person occupies in a system. Kahn et al. [31, 34] were the first to draw attention to organizational stress in general and role stress in particular, and have suggested that an organization can be defined as a system of roles. Three categories of roll stress have been identified (role ambiguity, role conflict, and role overload), and such classification has been used by many other researchers. However, from the perspective of individuals, each role is also a system of functions, and thus two aspects of a role are most important: role set, the system within the organization to which roles belong and by which individual roles are defined; and role space, the roles people occupy and perform. The organizational context is especially important, because the concept of role is inextricably linked to expectations.

Role conflict occurs when a person is forced to take on two different and incompatible roles at the same time [34]. In other words, it arises when two or more sets of role pressures exist in an individual's workspace, and the compliance with any one of these pressures impedes the accomplishment of another [33]. Kahn et al. [35] found that high

levels of role conflict are related to the following: (a) low levels of job satisfaction, (b) a high degree of job related tension, and, most importantly, (c) low confidence in the organization.

Obviously, conflict is a process in which one person perceives that his/her interests are being opposed or negatively affected by another party (or parties), and hence it comprises causes, a core interaction, and effects. Some effects can be fed back to become or generate new causes or to enhance previous causes. Over time, a conflict can lead to low commitment to implement decisions, as well as increased absenteeism, more grievances, and reduced productivity [36].

Role stress is a very extensive topic in research, including aspects ranging from the sources and effects of stress, to ways of managing and reducing such strain or tension. Organizations need to recognize stress as a problem and decide whether to act upon it. The Organizational Role Stress Scale [34] can be used to gather data about individuals' role stress and forms of conflict within an organization. Among faculty, it is important to understand the causes of role stress, as well as the relationships between role stress, role conflict, and burnout.

Stress, burnout, and job dissatisfaction are important issues for healthcare professionals, because they have been shown to represent significant risks to the health and well-being of physicians, and they are also associated with reduced quality of healthcare, attrition, and decreased commitment to the practice [37]. Research performed by Gmelch et al. [38] demonstrated that over half of the faculty members at an American university felt stressed, and that stress was related mainly to the following: reward and recognition, time constraints, departmental influence, professional identity, and student interaction. However, those investigators emphasized that the causes of stress are closely associated with the social environment and organizational management, and the conditions of the individual's work and life environments.

It is obvious that university faculty members are not exempt from problems associated with role stress and burnout [39]. In a study conducted in India in 2001 [40], the cited authors examined organizational role stress in relation to job burnout among university teachers, and the results indicated a significant correlation between those two factors for all ranks of faculty members. Furthermore, it was observed that the sources of the

stress included excessively high self-expectations, pressure to secure research funding, insufficient time to keep up with developments in the field, inadequate salary, manuscript preparation, role overload, conflicting job demands, slow progress or career advancement, frequent interruptions, and long meetings [38,41]. Studies of the roles of faculty members have indicated the existence of a multifaceted complex of strains and stress on those individuals. Therefore, it has been widely emphasized that research is needed to explore role-related subjects in academic life in order to find appropriate coping strategies for sustaining faculty and university vitality. Thus far, the results obtained in that area suggest that faculty development is a possible solution.

2.11 Approaches to faculty development

Faculty development is an institutional process aimed at modifying the attitudes, skills, and behavior of faculty members as a means of increasing the competence and effectiveness of those individuals in meeting the needs of their students, their own needs, and the needs of the institution or organization. This strategy is typical of the efforts made to conceptualize faculty development in a comprehensive way and with a theoretical base. A comprehensive approach advocated by Bergquist and Phillips [13] indicates that faculty members often seek to achieve personal, instructional, and organizational improvement, and they do so through interpersonal skill training, counseling, and personal growth workshops. Instructional development includes curriculum planning and also involves activities connected with teaching and learning, such as micro-teaching, classroom diagnosis, and educational methodologies. Organizational development covers departmental management, team-building, conflict management, and decision making.

On the other hand, Bland [26,42] has categorized three comprehensive approaches to devising faculty development programs, which are defined to include the following: the attitude of the people who perform the work (i.e., their goals, values, morale, culture, expectation, and dreams), the processes used to perform the work (teaching, research, writing, advising, patient care, and administration), and the structure designed to facilitate work (reward structures, lines of authority, procedures, functional units). The three broad approaches of personal, functional, and organizational development address the needs that exist in these key aspects of an organization.

Wilkerson and Irby [19] have introduced a broad model for faculty development activities that is based on the literature concerning the variety of strategies for teaching and learning and methods for dealing with the needs of faculty members. This model classifies faculty members into three groups according to the levels of needs that should be addressed by development initiatives: the entry level, the second or mid level, and the third level. This model also includes four domains and ranges of activities aimed at developing and sustaining the work performed by the faculty within the different levels of needs: professional development, instructional development, leadership development (educational scholarship and supervision), and organizational development. The work of Wilkerson and Irby focused primarily on teaching and learning matters. Thus, *professional development* aims to promote scholarship and academic success by covering and providing orientation to faculty roles, responsibilities, values, norms, and expectations of the university, and by mentoring and improving clinical and research domains. To provide teaching enhancement opportunities, *instructional development* involves basic and advanced teacher development through mentoring, peer coaching, workshops, and consultations. The activities in this domain are often best applied in the context of entry-level faculty to cover their orientation programs. The domain of *leadership development* deals with the enhancement of skills for curricular planning and change by orientation to leadership roles, preparation of effective leaders who understand formal and informal leadership styles, the ability to use various tools and techniques such as continuous quality improvement, change management, and consensus-building. *Organizational development* is the uppermost level, which aims to influence policies, procedures and the culture of education in the institution. This entails creating an effective organizational climate that values and rewards education and research, fosters continual learning, commits resources to faculty development programs, and formulates policies and procedures that shape educational excellence and guide faculty behaviors.

Accordingly, it is apparent that a comprehensive approach can provide a rational foundation for selecting a combination of individual and organizational activities that may have a greater influence than the separate activities on both individuals and the organization as a whole. Research has shown that broad development initiatives can actually empower faculty members so that they can excel and create energetic academic communities [17,19,43-45].

2.12 Faculty evaluation

“The purpose of evaluation is not to prove, but to improve.”

Dr. Guba

At this point, it is necessary to explain how faculty performance and activities are evaluated. The field of assessment and evaluation, like all other specialized disciplines, has developed many important concepts, principles, and methods to guide such work. Arreola [46] has described evaluation as “the process of interpreting measurement data by means of a specific value construct to determine the degree to which the data represent a desirable condition”. To clarify the relationship between measurement and evaluation, Arreola, defined measurement as “the process of systematically assigning numbers to the individual members of a set of objects or persons for the purpose of indicating differences among them in the degree to which they possess the characteristics being measured”. According to this view, evaluation uses measurement data on faculty members, administrators, trustees, and others. In a broad perspective, faculty evaluation entails the gathering of information with the purpose of understanding, improving, and judging the quality of faculty performance. Faculty evaluation can be carried out in a reliable and valid manner, and the data can be used to make decisions related to tenure, promotion, re-appointment, and salary, or for personal growth and improvement.

More recently, concerns expressed by government officials and experts about the quality of medical education have drawn attention to the competence, performance, and accountability of members of medical school faculty members. Consequently, faculty evaluation has become a core component of ongoing quality improvement in medical schools [47], and many of those institutions are now searching for ways to effectively and constructively achieve such assessments. In the words of Bland [48], “[they are struggling] with how to recruit and maintain vital faculty and how to fairly evaluate and recognize faculty members, particularly in these times of diminishing resources”.

Developing and implementing effective faculty evaluation systems is a challenging task [46,49,50], and a variety of approaches exist to that end. For instance, a goal-based strategy can be used in which faculty members annually prepare a list of objectives, and the rate of accomplishment is evaluated at the end of the year [51]. Applying a comprehensive institution-wide system for faculty assessment is another method [52].

Arreola [49] pointed out four key elements in the design of a faculty evaluation system: (i) establishing a good fit between the system and the environment; (ii) securing strong faculty involvement; (iii) providing feedback on faculty performance; (iv) developing opportunities to improve future faculty performance. Thus, a comprehensive approach to faculty assessment should have a multi-dimensional perspective in which information is provided by students, colleagues, academic administrators, and the faculty members themselves as self-evaluators [53-56]. A number of reasons for the difficulties in developing and implementing effective faculty evaluation programs have been identified in the literature [57], and two of those were found to have a major impact: faculty resistance and the apathy of administrators.

To summarize, in general it is important to develop, maintain, and properly use comprehensive faculty evaluation systems, and to ensure that those strategies incorporate the policy, the process, and the human resources that are required for efficient and effective data management. Such systems can regularly assess the operation, stability, and accuracy of the process itself [57], and hence they are based on a common understanding and acceptance of the essential ingredients. This means that the following conditions must exist: there are underlying institutionally and individually relevant reasons for evaluation; the roles and goals of evaluation are appropriate; the methods used to meet the administrative and data requirements of the process are valid; the functions of the system are not punitive; the people involved are trustworthy. This implies that effective faculty evaluation is the core of improving the quality and value of medical education. Medical schools must have well-designed and comprehensive faculty evaluation systems in order to achieve their goals and also to select, retain, and develop qualified faculty members.

2.13 THE CONTEXT OF IRAN

Of all the countries in the Middle East, Iran is the most populous (70 million inhabitants), and it has the second largest economy. This nation has a large network of private, public, and state-affiliated universities that offer degrees [58]. In the state-run universities, non-medical fields are under the direct supervision of the Ministry of Science, Research and Technology, and health-allied fields are managed by the MoHME. According to recent statistics compiled by the Ministry of Science, Research and Technology [59], there are currently 54 universities and 38 medical universities

managed by the state, and there is also one major private university with 289 branches nationwide.

Student enrollment increased rapidly during the development phase of the reform in higher education in Iran (1988–2004). Per 100,000 inhabitants, 9.1% were students in 1989, but the rate had rapidly increased to 34.9% by 1997 and was 45.6% in 2004. In 1985, the government passed an act that led to a major restructuring of medical education that involved separation from the Ministry of Science, Research and Technology and establishment of a new integrated department called the Ministry of Health and Medical Education [59].

2.14 Integration of medical education into healthcare services

Legislation calling for a reform in medical education was passed by the Parliament of the Islamic Republic of Iran in 1985, and thereafter the universities of medical sciences and the Ministry of Health were gradually integrated [60-63]. As a result, the MoHME was established, which had a new framework consisting of six main divisions headed by deputy ministers who were directly responsible to the head of the Ministry (Figure 1). At each provincial level, one university of medical sciences and health services was established (Tehran being the exception, with three major medical universities), and thus these state-run medical universities are under the direct supervision of the MoHME. The integration of medical education and the healthcare system in Iran was done for two reasons [60-64]: (1) to upgrade the quality of the training of health personnel in general and medical education in particular, by changing from a traditional, theory-driven, academic form of education to more community-oriented education; (2) to make the country self-sufficient with regard to meeting the demands for healthcare personnel. There were some other objectives as well, which concerned achieving the following: education based on community needs, sufficient development of task-based healthcare manpower, and broadening learning/teaching and research facilities for more effective health and medical education.

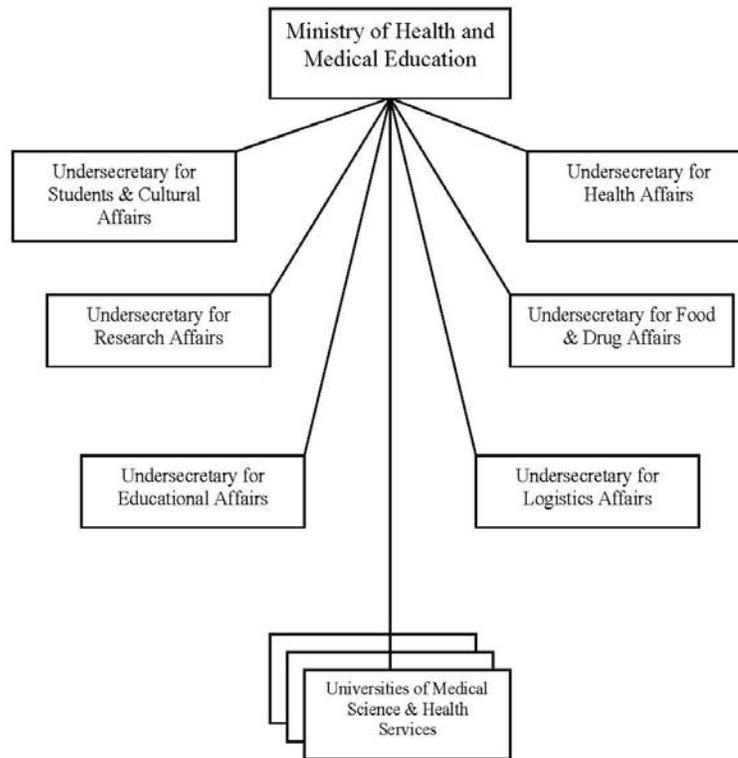


Figure 1. Organization of the Ministry of Health and Medical Education.

In recent years, many of the medical schools in Iran have undergone changes that have involved implementation of student-centered learning, revamping of student assessment, and increasing the emphasis on staff development. These dynamic and versatile conditions have created an interesting challenge for medical educators to record the existing status and intended future directions of these schools, along with the processes of change and the struggles and opportunities they are currently facing.

This integration has led to the opening of new medical schools and expansion of almost all the new training programs [60]. Considering indicators of the quantity of medical education, the number of medical institutions has risen from 10 to 44, student admissions to medical science programs have grown from 1,387 to 18,141 and medical student admissions from 632 to 3,630, and the number of faculty members has increased from 1,573 to more than 9,000 [59].

Based on national ranking, the medical schools are categorized as large, mid-sized, and small institutions. The criteria for this ranking take the following into consideration: the number of faculty members; the number of students enrolled; existence of postgraduate programs, residencies, and fellowship or subspecialty programs; resources allocated and other educational indicators.

The establishment of the Educational Development Centers (EDCs) at all the medical universities might also be regarded as a product of the reform process. The advantage of introducing the EDCs is that they allocate resources to faculty development, and educational expertise becomes available to the faculty members [65].

2.15 Reason for establishing the EDCs

After the complete national integration of medical education into the healthcare delivery system, the EDCs were established at all the reorganized medical universities with the goal of improving the education systems and their quality. These centers plan and implement faculty development initiatives, and prepare faculty members for their new and diverse roles and responsibilities. In addition, the EDCs work towards securing the academic performance and success of faculty members, and thus the need for faculty development programs has been repeatedly expressed.

2.16 Administrative structure of the EDCs

The EDCs provide services at the university level to anyone enrolled at the medical universities and schools in areas such as medicine, nursing and midwifery, dentistry, allied health/public health, and pharmacy, which are subject to the priorities proposed by the director and the advisory council in consultation with the dean of education. The EDCs are governed by the MoHME's EDC director at the ministry level and by a vice-chancellor for education at the university level (Figure 2). Based on priorities, available resources, and size, each medical university also has an Educational Development Office (EDO). The EDO serves the educational needs of the school by enhancing the curriculum, supporting and developing faculty, and defining and implementing institutional structures that support and improve the education system and its quality. Notably, in addition to EDC faculty development activities, there have been some parallel development programs organized by vice chancellors for research, but those endeavors have focused primarily on research competencies, scientific writing skills, and publication performance of faculty members.

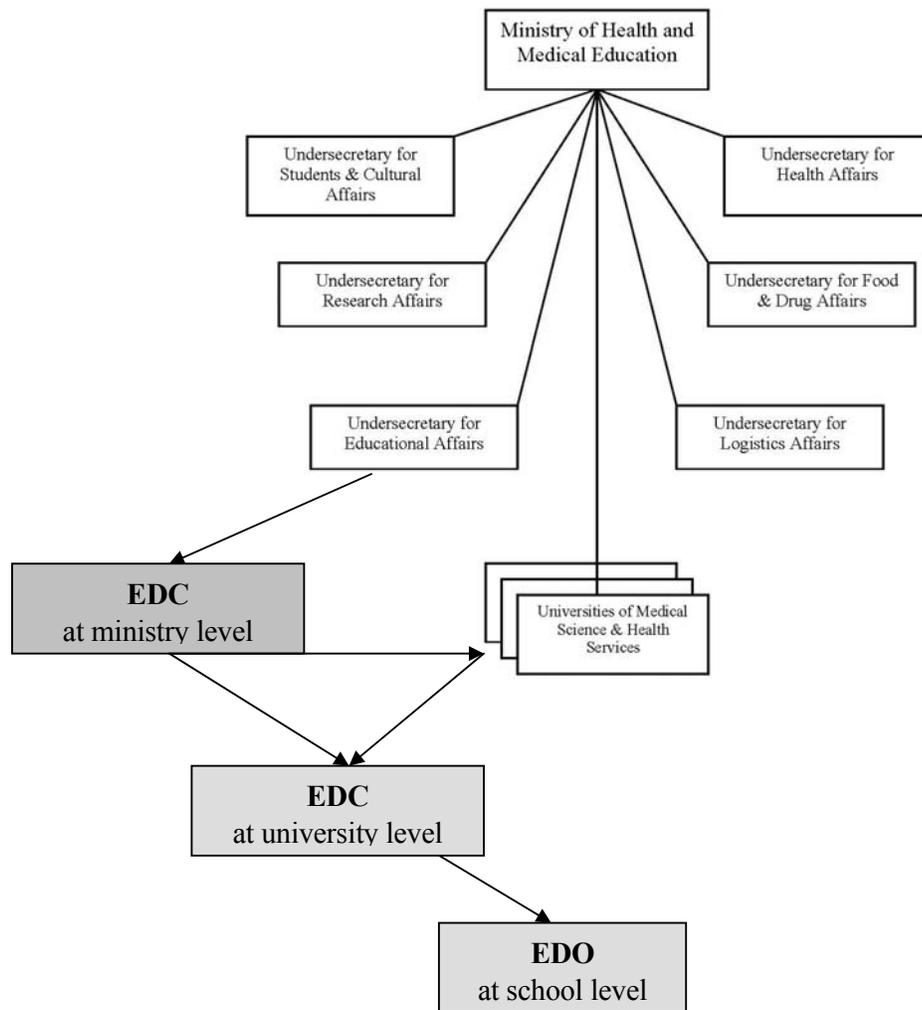


Figure 2. The hierarchical administrative structure related to the EDCs.

2.17 Activities of the EDCs

Based on their own mission statements, the EDCs aim their activities at all four of the domains of professional, instructional, leadership, and organizational development. These centers are expected to design and implement well-organized and effective faculty development programs, and they also offer multidisciplinary programs of that type in the most popular formats of basic and advanced workshops and semi-courses. Each year, the MoHME usually collects and analyzes data on the quantitative aspects of medical university faculty development activities, and the results of those assessments indicate that workshops constitute more than 75% of such efforts.

2.18 The faculty evaluation system at Iranian medical universities

Besides the faculty development system, Iranian medical schools have another parallel system that deals with faculty evaluation. The latter system primarily comprises end-of-course questionnaires that contain items addressing the quantity and quality of teaching in the learning environment, and it also relies heavily on students' opinions. In contrast, decisions related to faculty members' careers (e.g., regarding promotion and tenure) depend mainly on the quantity and quality of their scientific publications. So, it seems that other important components and responsibilities of faculty are relatively neglected or weighted differently [51,66,67], as for instance the performance of clinical and community healthcare delivery [61,68]. How to address these multiple roles in faculty evaluation and development remains an open question. However, very recently the faculty evaluation system has undergone major changes. The government has introduced new regulations for faculty evaluation, and although that has led to improvements, there are still problems similar to those that previously existed.

2.19 Curriculum change and faculty development in Iran

The Iranian government is currently implementing some reforms to improve the quality of medical education and to direct the new perspective and strategies towards teaching and learning in that context. One of the recent reform projects entails curriculum re-design or revisions that are being performed by medical schools and emphasize horizontal and vertical integration of the medical curricula. A discussion of the objectives and other aspects of that project is clearly outside the scope of this thesis, although the relationship between curricula revision and faculty development is of interest here. In short, it is important to understand how leaders can best handle their task of leadership to facilitate curricular change [69]. Faculty members are central to

successful application of any alterations made in a curriculum, and yet many of the impediments to such changes are also likely to be found within the faculty itself. A prerequisite of achieving major curricular transformations is that institutional leaders define a new vision and allocate sufficient resources to support the efforts of the faculty. It has been stressed that little can be accomplished in this area, unless extensive consideration is given to the issue of faculty development [70-75].

2.20 Internal and external forces that drive Iranian medical education

The efforts that have been aimed at developing medical education in Iran have been rather quantitative in the sense that they have led to the establishment of many new medical schools and educational programs. Some of the driving forces underlying the pressure for change have been international in nature, including things like advances in medicine, provision of health services, public expectations, and the emergence of novel and modern educational strategies and new educational thinking. Other driving factors have been on a national level and are exemplified by the following: a dramatic increase in the number of students in medical and allied medical sciences, decreased motivation among students and faculty members, limited resources, logical expectations emerging from trainees and educational audiences, implementation of new methods in education, and introduction of innovative concepts in medical education. That situation gives rise to the following questions: How can leadership dedicated to offering opportunities for continuous professional development of faculty take advantage of the mentioned driving forces? How can faculty development be a useful or valid approach to achieving the potential of the integration of healthcare delivery and medical education in Iran?

3 RATIONALE FOR THE PROJECT

The academic success of a medical school depends on the faculty members, considering how well they teach, the quality of the clinical services and healthcare they provide, and their contributions to scholarly activities. Educational, administrative, and organizational skills are usually underestimated, albeit necessary, for leaders in medical fields, but, unfortunately, they are not often developed during undergraduate or graduate medical education. Consequently, faculty members can be asked to perform duties for which they have not received formal training, and hence they are sometimes criticized for shortcomings in their multiple roles. By spending more time and resources on energizing faculty through special development programs, academic institutions might be able to reap the benefits of their investments in terms of creativity, productivity, and bolstered morale.

The integration of medical education and health services in Iran has led to the opening of new medical schools and the expansion of new training programs through the establishment of EDCs at all medical universities. This has provided a unique opportunity to focus on the quality of the medical education that is offered, addressing the following questions: How do the medical school faculty members meet the challenges, as well as the opportunities, created by the present circumstances? Have medical schools succeeded in balancing the diverse roles of faculty members in the critical processes that those professionals must perform, or, in other words, have they satisfactorily accomplished faculty evaluation and development?

After two decades of integration, it is time to review the results of the delivered faculty development programs, with the aim of finding suitable ways to solve any problems that have arisen and possibly also to enhance the activities currently in progress. An empirical and conceptual analysis of the development activities is needed to achieve that objective, and thus the present studies were designed and implemented at Iranian medical schools in collaboration with Karolinska Institutet, the National Public Health Management Center (NPMC) at Tabriz University of Medical Sciences, and the Medical Education Research Center (MERC) at Isfahan University of Medical Sciences.

4 THE RESEARCH QUESTION AND GENERAL AND SPECIFIC OBJECTIVES

4.1 The research question

To what extent is contemporary knowledge on faculty development applicable in developing countries, and how might faculty development further enhance faculty performance in one such setting—Iran?

4.2 General objective

The general objective of the research underlying this thesis was to explore and enhance faculty development in the setting of a developing country and thereby contribute to such development elsewhere in the world as well.

4.3 Specific objectives

The specific aims of the four studies were as follows:

1. To investigate the level and sources of job-related stress among faculty members at Iranian medical schools (Study I).
2. To develop and validate an instrument for assessing faculty development programs from a managerial and pedagogical perspective (Study II).
3. To study the potential benefits and limitations of faculty development activities from the perspective of faculty members with leadership and managerial positions (Study III).
4. To develop a foundation for a comprehensive national approach to a faculty evaluation system in Iranian medical schools (Study IV).

5 MATERIALS AND METHODS

5.1 STUDY SETTING

The present project was conducted at Iranian medical universities during the period 2005–2008, and a few issues concerning the context of the studies need to be explained. The population we investigated consisted of faculty members that had different levels of responsibilities and held various positions, as heads of departments, deans and associate deans of medical schools, directors of EDCs, vice-chancellors for research and education, and administrators and deputy ministers of education and research. As already mentioned, after the integration reform, 43 universities of medical sciences and health services were gradually established in 30 provinces, and all activities related to research, education, and healthcare delivery were assigned to those institutions. Based on size, each medical university may have affiliated state-run schools in areas such as medicine, dentistry, nursing and midwifery, and pharmacy, and they all have at least one school of medicine. It was those schools of medicine and the relevant administrative levels of the universities and ministries that were the focus of my research.

5.2 OVERALL STUDY DESIGN

The mixed-method research design of the studies used a combination of various data sources and methods of data collection and analysis. Qualitative and quantitative techniques were applied to gather the data in order to reveal different aspects of the contextual reality. That approach enabled triangulation of methods, based on the rationale that no single data collection method can adequately resolve the problem of rival causal factors.

Using the qualitative methods, we obtained an innovative perspective of knowledge and an in-depth understanding of the meaning of phenomena in their real context. In Studies II, III, and IV, interviews were conducted to capture qualitative data. The interviews were semi-structured so that we could make changes in the sequence of the questions in the interview guide, reformulate questions, and probe the participants to gain a better understanding of the subject of interest. Purposive sampling was

performed to select experts or information-rich cases of senior faculty leaders with different academic and administrative positions. Such sampling allows the researchers to choose participants with specific attributes and expertise. We also reviewed internal documents belonging to departments, medical schools, universities, and the MoHME.

The data from both the interviews and the documents were subjected to content thematic analysis to develop codes and categories. Furthermore, we applied qualitative content analysis to develop concepts and insight, and to create meaning from the data. The qualitative methods are described in detail in subsequent sections and in the articles included in this thesis.

The quantitative data were captured via surveys. Data were collected by questionnaires during the period 2005–2008. For Study I we used a standard and validated instrument. For Studies III and IV, we developed our instruments via an iterative process based on the results of the qualitative study, a review of the extensive literature on faculty development and faculty evaluation, and staff development principles (Study III) and adaptation of the published checklist of the Personnel Evaluation Standards (Study IV). Development of the instruments is described in detail in subsequent sections.

5.3 OVERVIEW OF THE FOUR STUDIES

Figure 3 presents a schematic diagram illustrating the relationships between the four studies. In the figure, the factors that were found to play an important role in faculty development are divided into two groups, respectively considering the individual and the organization. The organization includes the system of faculty development and the system of faculty evaluation; the individual comprises various specific characteristics, such as psychological aspects (e.g., stress and the source of stress), employment, and selection of faculty.

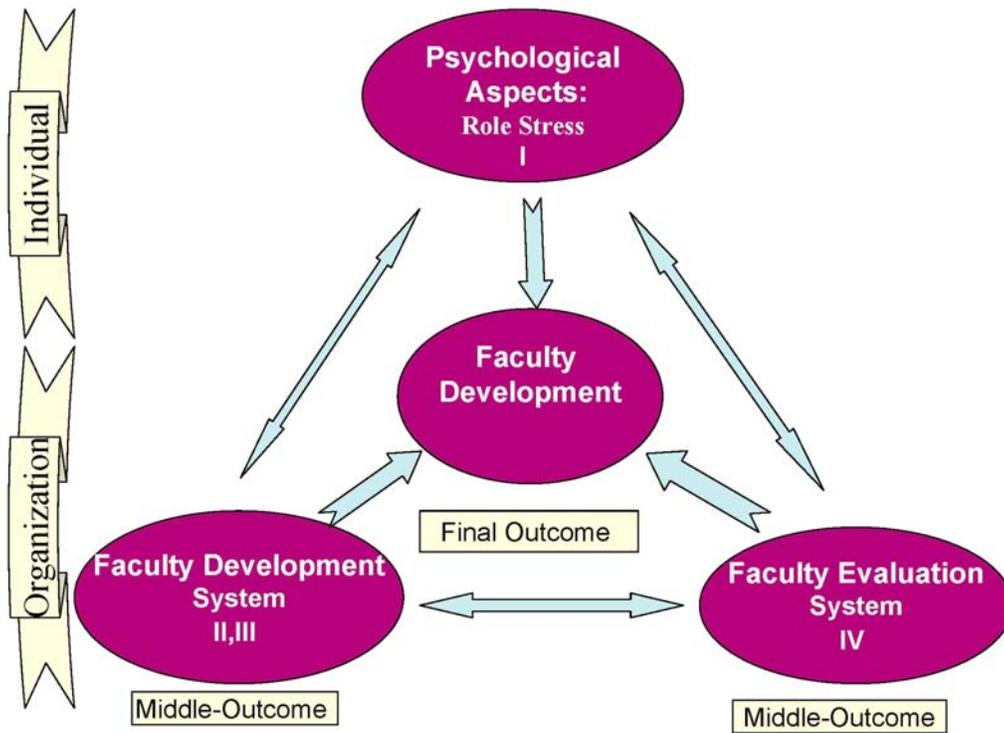


Figure 3. An overview of the four studies.

5.4 STUDY I

The aim of Study I was to investigate the level and the source of job-related stress among faculty members at Iranian medical schools. For that purpose, a survey was conducted at three different medical schools, which were classified as small, medium sized, and large, respectively, according to the national size ranking of the MoHME explained earlier.

Participants

The participants were members of the medical school faculties, and they differed with regard to their departmental affiliations (basic sciences, medical clinical services, and medical surgical services) and their professional ranks (professor, associate professor, assistant professor, and instructor).

Instrument for data collection

The Organizational Role Stress Scale (ORSS) was used to gather data and measure the role stress of individuals and several forms of conflict within the organization. The reliability and validity of the ORSS instrument have been confirmed in other investigations [31,34]. This scale comprises the ten dimensions of role stress indicated in Figure 4, which are defined in Annex 1. The ORSS has two parts, the first of which collects basic demographic data (on gender, age, academic rank, department of affiliation, and length of service). The second part consists of the actual survey, which includes fifty statements that are rated on a five-point Likert scale regarding role stress, anchored by the following: “If you never or rarely feel that way”, “If you occasionally feel that way”, “If you sometimes feel that way”, “If you frequently feel that way”, and “If you always feel that way”.

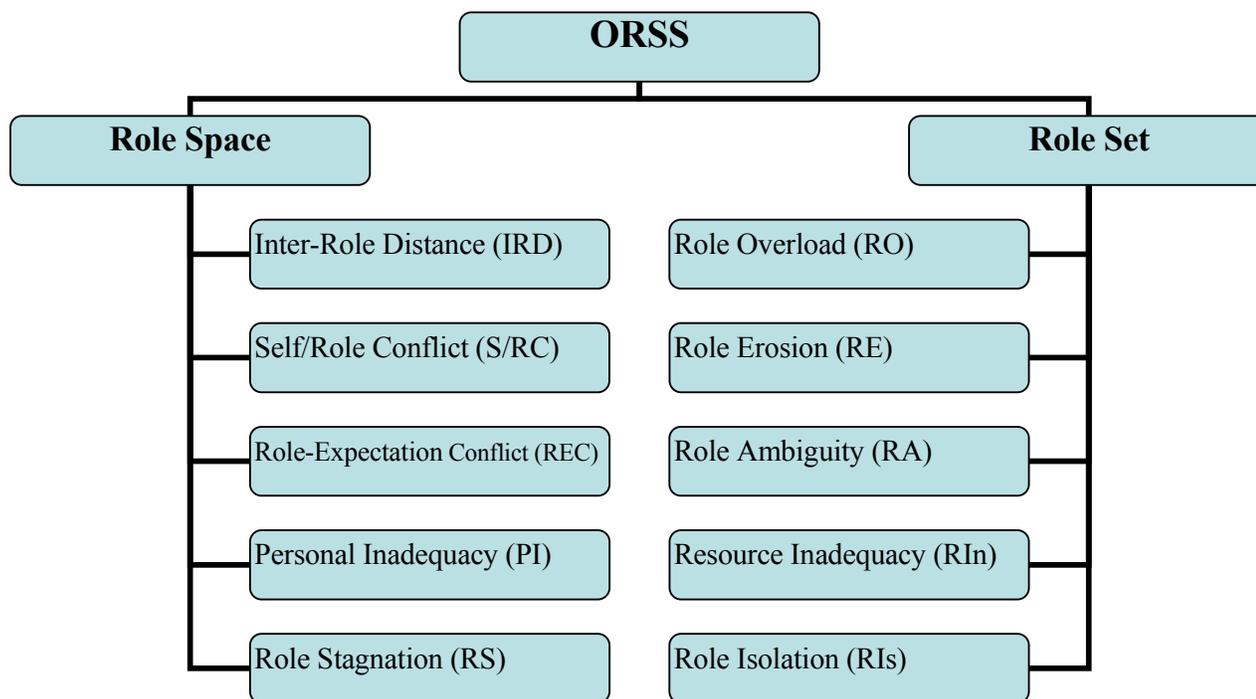


Figure 4. Two related aspects of “role” and the dimensions of role conflict.

Data analysis

Data were analyzed using Statistical Package for the Social Sciences (SPSS, version 11.5). Based on the type of variables, a variety of statistical methods were used, including t-test, Pearson’s product-moment correlation, analysis of variances, and multiple linear regression analysis.

5.5 STUDY II

The aim of this study was to develop and validate an instrument for assessing faculty development programs from a comprehensive perspective. The instrument was tested for content validity (how adequately the questions match the concept being measured) and internal consistency (the degree to which items within a scale are related), and in the latter case we used Cronbach’s alpha.

Psychometric testing procedures

A three-phase study format was utilized:

- First phase: defining and developing the content of the instrument
- Second phase: pilot testing of the preliminary instrument
- Third phase: developing categories and indicators

More precisely, the first phase entailed performing a review of the literature on faculty development in order to identify the relevant concepts and define the content of the survey instrument. This was followed by a series of interviews with experts who had extensive knowledge and experience in performing faculty development activities. In the second phase, we conducted a pilot test of the preliminary instrument in order to validate and prioritize the generated questions into an organized, focused instrument. Thereafter, we summarized and then identified categories and indicators. Finally, a factor analysis was conducted and the number of factors extracted.

Participants

Participants were recruited by purposive sampling, and a series of semi-structured interviews were held with key informants: deans and vice deans of medical schools, departmental chairs, vice chancellors for research and education, directors of EDCs, and other leading medical educators. The number of interviewees was determined by data saturation.

Analysis

The qualitative data were analyzed using qualitative content analysis, and the results and the content validity of the instrument were confirmed through expert group discussions. The experts were people who had extensive knowledge and experience in performing faculty development activities. In this study, we described the steps we undertook in the course of the development of the instrument by highlighting psychometric terms and concepts.

5.6 STUDY III

The objective of Study III was to understand the potential benefits and limitations of faculty development activities from the comprehensive perspective of faculty members

in leadership and managerial positions. To address those issues, we utilized the instrument developed in the previous study (Study II).

Design

Qualitative and quantitative methods were used for data collection. In the qualitative phase, a group discussion and semi-structured interviews were conducted to gather information from a representative sample of key informants. Maximum variation sampling was accomplished by selecting interviewees with varying responsibilities and degrees of expertise at different levels within medical schools and the MoHME. In the quantitative phase, we conducted a survey using our newly developed questionnaire.

Participants

A stratified random sampling technique was used to select 11 of the 40 public medical schools in Iran. Three of those institutions were considered to be large, four medium-sized, and four small. As respondents, we chose academic staff with leadership and managerial positions, including departmental chairs, deans, vice chancellors, and EDC directors, because they were expected to have sufficient contact with faculty development activities.

Analysis

The main categories and indicators were assessed by descriptive data analysis. ANOVA was also performed to calculate mean scores and significant differences between categories and indicators, and that was done using SPSS (version 11.5).

5.7 STUDY IV

Study IV was performed to develop a foundation to design a comprehensive national approach to medical faculty evaluation in Iran. That goal was achieved by doing the following: (i) investigating faculty members in managerial and leadership positions at the medical universities with regard to their views on faculty evaluation; (ii) considering which areas and components of faculty work should be evaluated; (iii) ascertaining whether adaptation of the Personnel Evaluation Standards (PES) would enable evaluation that addresses all roles and responsibilities of faculty members.

Design

Qualitative and quantitative data collection techniques were part of the research design. Semi-structured interviews and a decision-making group discussion were performed in the qualitative approach. To conduct the interviews, a guide was developed using a number of questions designed to allow the respondents to focus on the topics and issues that they considered most important in relation to their experiences with faculty evaluation. Maximal variation sampling was done to select interviewees with different responsibilities and levels of expertise at the medical universities and the MoHME.

The purpose of the decision-making group was to present and discuss the different views raised by the interviewees, and subsequently reach consensus on which statements in the PES fit the interview data. Thereafter, we adapted the published PES to fit the Iranian medical universities by considering the diverse roles of the faculty members at those institutions. The adapted instrument was then administered to faculty at twelve of the Iranian medical schools.

Quantitative method (survey)

The survey instrument contained 21 adapted checklists of the PES, comprising 27 statements. Each statement was expected to provide information in five separate areas of faculty efforts, including teaching, research and scholarly activities, clinical and healthcare services, institutional administration, and self-development. The PES provides a systematically developed and widely endorsed basis for evaluation of staff evaluation systems [76-80], and that instrument has been used in a number of studies to investigate the qualifications and performance of teachers and other educators [80-82]. The PES is organized to address four basic principles of sound evaluation: utility, feasibility, propriety, and accuracy [76,78].

As a representative sample of all 40 public Iranian medical schools, we surveyed 345 faculty members with different leadership and administrative positions at twelve schools of different sizes. The sample selection was stratified according to the size of the schools, with four schools in each stratum. The respondents were heads of departments and faculty members who had sufficient contact with faculty evaluation systems. Survey packages were mailed to the participants. The questionnaire responses were anonymous but were grouped according to school so that we would know where we needed more surveys to fulfill our study sampling criteria.

Data entry and analysis

Data from the questionnaire were manually entered into a spreadsheet and thereafter checked for accuracy. The data were analyzed using SPSS (version 11.5), and one-way ANOVA was applied to identify differences. Duncan's post hoc analysis was used when appropriate, and one-way ANOVA was also employed to determine differences in relation to rank, roles of faculty, and sizes of the medical schools.

6 ETHICAL CONSIDERATIONS

The present research was approved by the Iranian National Ethics Committee and was conducted solely at Iranian medical schools. We protected the participants' anonymity and confidentiality. The number of survey responses sent to and received from each school was tracked to ensure adequate response rates, but there were no data that could identify the individuals who completed the questionnaires. Moreover, the respondents were advised in a cover letter that participation was voluntary and that informed consent was implied by completion and return of the survey instruments. Concerning interviews, the participants (interviewees) were informed of the purpose of the study and that the findings were to be published in peer-reviewed journals. They were also assured that their participation was confidential and voluntary, and that they could withdraw at any time. The interviews were tape-recorded after approval by the interviewees. The identities of the interviewees were removed from the transcripts to guarantee confidentiality.

7 MAIN FINDINGS

7.1 STUDY I

Demographic characteristics showed that the majority of the participants were tenured assistant professors with less than 10 years of work experience (Table 2).

Table 2. Demographic characteristic of the investigated faculty members

Characteristic	No. (%)	Characteristic	No. (%)
Medical school		Work experience (years)	
Small	211 (63.4)	< 10	149 (44.7)
Mid-size	67 (20.1)	10–15	134 (40.2)
Large	55 (16.5)	> 15	50 (15)
Gender		Employment status	
Male	261 (78.4)	Tenure	251 (75.4)
Female	72 (16.5)	Probationary	56 (16.8)
Academic rank		Non-tenure	26 (7.8)
Professor	19 (5.7)	Department affiliation	
Associate professor	53 (15.9)	Internal	145 (43.5)
Assistant professor	231 (69.4)	Surgical	116 (34.8)
Instructor	30 (9)	Basic medical sciences	72 (21.6)
Total respondents	333 (64)		

Key findings of Study I:

1. The mean ORSS scores indicate comparatively high levels of role stress among faculty members at all three different sizes of Iranian medical schools (see Table 3).
2. There were no significant differences between the medical schools of various sizes with regard to the means of ORSS dimensions or the total scores (Table 3).
3. Analysis of stress levels in relation to department affiliation gave significantly lower mean IRD, RS, REC, RO, S/RC, and RA scores and total ORSS scores

for faculty members in basic medical sciences compared to those working at medical clinical and surgical departments (Table 3).

4. The scores for all dimensions of role conflicts were lowest for the faculty members associated with basic medical sciences, as compared to those with other departmental affiliations.
5. Considering stress levels in relation to academic rank, the mean S/RC, RI, PI, IRD, RS, RIn, and RA scores and the total ORSS score for professors differed significantly from the corresponding results for associate and assistant professors and instructors.
6. Compared to all other ranks, professors had the lowest scores for the majority of the dimensions of role conflicts.
7. Stepwise regression analyses revealed that experience of and affiliation with a basic medical sciences department were the best predictors of all dimensions of role stress, which means that the level of role conflict decreases the longer faculty members work in or are connected with basic medical sciences.

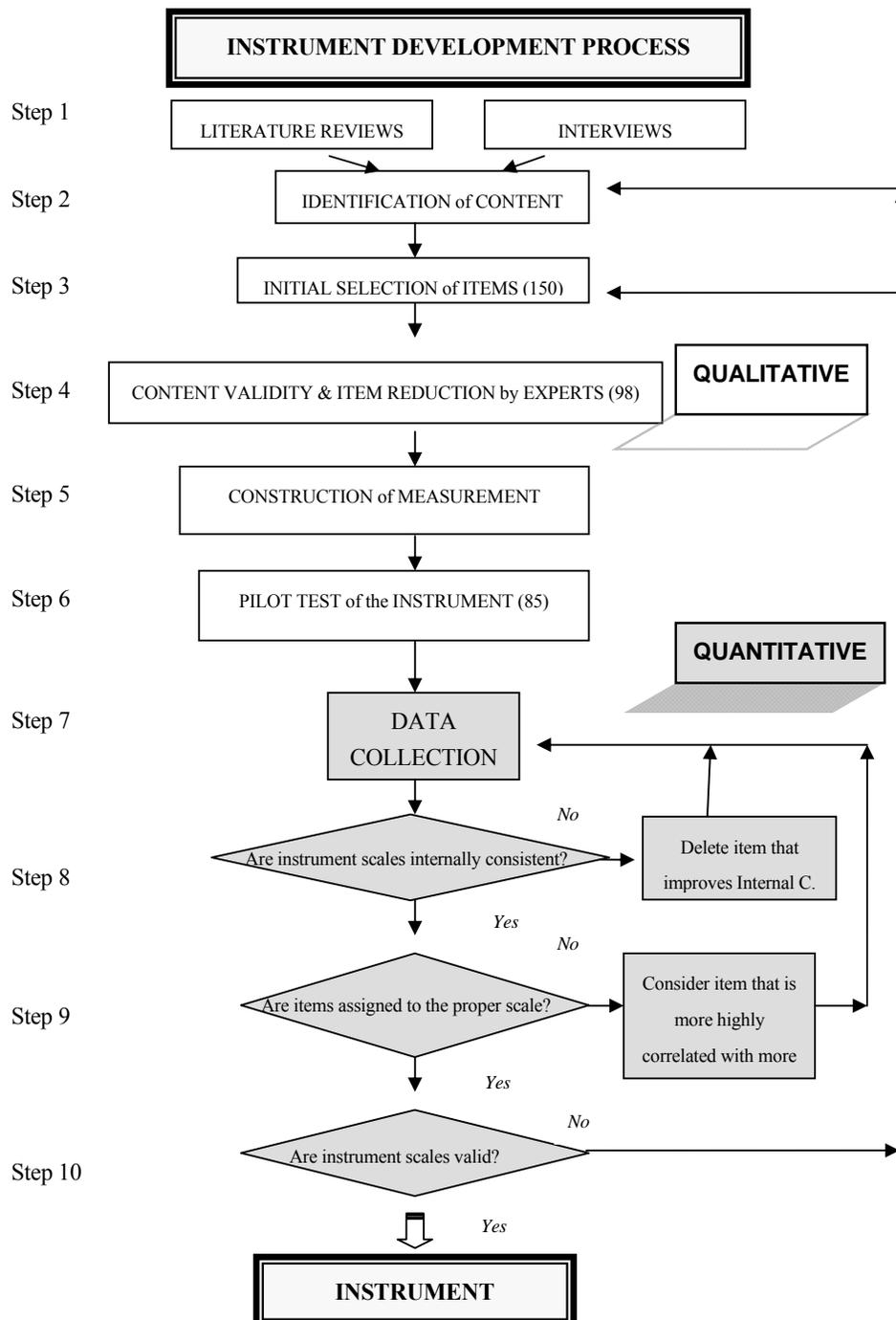
Table 3. Summary of one-way ANOVA of the different dimensions of role stress

<i>Role stress Dimension</i>	<i>Medical school</i>			<i>Department</i>			<i>Academic rank</i>			<i>Employment position</i>		
	<i>Mean</i>	<i>F</i>	<i>p</i>	<i>Mean</i>	<i>F</i>	<i>p</i>	<i>Mean</i>	<i>F</i>	<i>p</i>	<i>Mean</i>	<i>F</i>	<i>p</i>
IRD	8.7	2.2	.*	8.9	7.9	.001	8.9	2.4	.006	8.9	4.1	.01
RS	7.9	.15	-	7.9	3.39	.03	7.9	4.3	.005	7.9	1.3	-
REC	8.6	1.8	-	8.6	4.9	.008	8.6	1.9	-	8.6	2.6	-
RE	7.8	.69	-	7.8	.32	-	7.8	1.2	-	7.8	2.7	-
RO	7.0	.09	-	7.0	6.5	.002	7.0	1.9	-	7.0	2.4	-
RI s	9.1	.8	-	9.1	1.9	-	9.1	4.0	.008	9.1	.30	-
PI	5.4	1.5	-	5.4	2.2	-	5.4	4.7	.003	5.4	.56	-
SRC	4.8	.21	-	4.8	4.1	.01	4.8	4.8	.003	4.8	1.4	-
RA	5.2	.85	-	5.2	5.7	.004	5.2	3.8	.01	5.2	.16	-
RIn	8.1	1.1	-	8.1	.11	-	8.1	3.3	.003	8.1	.81	-
Total	73.0	.04	-	73.0	4.2	.01	73.0	4.6	.003	73.0	.79	-

* Not significant

7.2 STUDY II

The three phases of instrument development in the present research are summarized in the schematic diagram presented in Figure 5. During the first phase, the concepts and contents of the instrument were defined and developed through literature reviews and interviews, based upon which 150 items were annotated. The final instrument contained 85 items and had 16 indicators for the first four categories and 15 indicators for the last two (Appendix II).



As shown in Table 4, six categories and thirty-one indicators were identified based on qualitative content analysis of semi-structured interviews with a representative sample of key informants: deans and vice deans of medical schools, departmental chairs, vice chancellors for research and education, and other leading medical educators.

Table 4. Categories and indicators identified in qualitative content analysis

Category	Indicator
Input	Performing needs assessment
	Partnership in needs assessment
	Using diverse sources of information
	Addressing diverse needs
	Appropriateness of resources
	Diversity of contents and topics
Process	Diversity of implementation methods
	Access to programs
	Using active teaching and learning strategies
	Continuity of programs
	Incentives
Output	Obtained skills and abilities
	Satisfaction
	Achievement of objectives
Evaluation	Program evaluation
	Feedback system
Obstacles & Challenges	Inadequacy of managerial and/or organizational support
	Inadequacy of department and school support
	Inadequacy of faculty partnership in decision making
	Fragmented and parallel structures dealing with faculty development activities
	Instability of management in the decision making process
	Resistance to change
	Lack of follow-up activities
	Lack of standards for faculty training
	Lack of systematic approach to the faculty training process
Faculty Roles Addressed in Programs	Teaching
	Research
	Practice (clinical/allied health)
	Administrative roles
	Personal development
	Professional community services

7.3 STUDY III

Qualitative findings

To identify the needs of faculty development programs at the medical schools, interviewees were asked to prioritize certain content areas. Table 5 presents selected results regarding the most frequently reported comments and needs. The potential factors that guided the selection of content for faculty development programs were as follows:

- Faculty interests and concerns
- Priorities of administrators (e.g., head of department, dean and associate dean of the school)
- Immediate issues, concerns, or problems of the school

Table 5. Faculty development needs specified by the interviewees

Area in which skills are needed	Perceived needs (topic or content)
Education (Instruction)	Teaching-related skills in class management, effective student assessment, class presentation, questioning and all aspects of design and presentation, feedback, program design, evaluation of quality and outcomes of teaching programs, curriculum design, active learning, problem-based learning, clinical teaching, community-oriented medical education, assessment of student learning outcomes, integrating information technology into teaching and learning settings
Professional development	Ethics in medical education, scholarly activity, conducting research, presenting at conferences, writing for grants and getting published, supervisory skills, assistance in career planning and preparing for promotion, education research, mentoring, career planning, new faculty assistance and orientation towards understanding academia
Personal development	Self-management, interpersonal skills, stress management, programs that address the well-being of the individual, effective communication (how to communicate).
Leadership	Skills in these areas: curriculum planning; managing curriculum change; teamwork; assisting colleagues to become better teachers; time management; administrative development for department chairs, deans, and other decision makers; adapting to and managing changes; departmental leadership/management; administrative work

To identify the most common programs and their formats, the annual EDC reports to MoHME in 2007 were also analyzed. Workshops constituted the most frequently applied format of faculty development programs (Table 6).

Table 6. Statistics on and the most common formats of faculty development activities in Iranian medical schools

Format or type of FDP*	No. of EDCs* conducting the FDP	Proportion(%) engaged in the activities	Target audience		Remarks
			Faculty	Health profess.*	
Workshop Short (1–2 days) Long (a few weekdays or weekends)	35	80%	√	-	1. Participation in program voluntary 2. No priorities or obligations 3. Some centers have a specific faculty development committee 4. More than 80% had recruited at least one person to be responsible for FDP* 5. The content and methods used varied but almost all activities focused on scientific writing, research skills, teaching skills, instructional design, and student assessment 6. A sabbatical is a leave of absence, often with pay, usually granted every fifth year to faculty members. 7. Master’s program has written and interview-based entrance exam, and faculty members have priority for admittance. 8. No available statistics on the rate of faculty participation 9. All departments and schools given the opportunity to participate in the FDP.
Seminar series (half-day)	35	5	√	√	
Short course	8	2	√	-	
Sabbatical	35	6	√	-	
Conference	35	7	√	√	
Orientation course for new faculty	4		√	-	
Longitudinal program	-	-	√	-	
Fellowship (part-time for approx. 3 mos.)	1	-	√	-	
Master’s degree in Med. Educ.	6	-	√	√	
Distance Med. Educ.	3	-	√	√	

*FDP, faculty development program; EDC, Educational Development Center.

*Health professionals

Key survey findings

These are the major findings concerning the situation identified in relation to the faculty development activities performed at Iranian medical schools:

1. More than half of the respondents reported that “performing needs assessment” had been partially fulfilled, but the low mean score for that aspect (0.80 ± 0.48) indicated that it was not done properly. It was also pointed out that there was a lack of appropriate attention given to the other indicators associated with needs assessment, including “using diverse sources of information” and “partnership in needs assessment”.
2. The success of faculty development activities to some extent depended on several key factors. One of those concerned securing the continuity of programs, although that particular process indicator had the lowest score.
3. The achievement of goals was essential for the success of faculty development programs, but that aspect had a low mean score, indicating that the implemented programs did not achieve the intended objectives.
4. The system for program evaluation was insufficient so that the end-of-session questionnaire usually constituted the only method of assessment, and there were insufficient follow-up activities.
5. Concerning the faculty roles that were addressed in programs, more attention (indicated by the highest mean scores) was paid to teaching, research, and practice, whereas less consideration (lower mean scores) was given to administrative roles, personal development, and professional community services.
6. Several obstacles and challenges impacted the success of programs: inadequacy of managerial and/or organizational support; inadequacy of department and school support; inadequacy of faculty partnership in decision making; fragmented and parallel structures dealing with faculty development activities at schools; instability of management in the decision-making process; resistance to change; lack of follow-up activities.

7.4 STUDY IV

Qualitative findings

The semi-structured interviews served two purposes: first, they provided the background and insights used to construct an instrument mapped against the PES; second, they constituted the source of the data that we analyzed to be able to discern any themes and important aspects of faculty members' experiences that might not be addressed in the PES. Qualitative content analysis methods were used to investigate interview data from senior faculty leaders who had extensive knowledge and experience in performing faculty evaluations. Short descriptions of meaning units (named codes) and four main categories were developed during the iterative process of analysis.

Category 1. Purpose and objectives of evaluation

Descriptions:

- It has relatively minimal effect on mission achievement
- Evaluation exists in isolation from development
- Evaluation has not provided enough opportunity for promotion, retention, and tenure decisions
- Faculty members do not recognize the benefit of evaluation
- Faculty evaluation process has not been perfectly designed to assist the institution in attracting faculty members, helping them reach their potential, and rewarding their proficiency

Category 2. Criteria and standards of evaluation

Descriptions:

- The designed guidelines do not always comply with standards
- Criteria and standards for evaluation are lacking

- There was no differentiation between competent and incompetent faculty members
- Objectives agreed upon are changed, so that they do not become the basis for the criteria to be applied in subsequent reviews

Category 3. Area of faculty evaluation

Descriptions:

- There is no multiple role approach in evaluation, so that faculty are not evaluated for all components that influence their performance
- Little weight is given to clinical and community healthcare service
- Over-reliance on student evaluation of classroom teaching evoked negative responses from faculty (student-centered evaluation)
- Despite potential advantages of program integration, there has been no demand for applying these opportunities
- Scholarship goals are neither specific nor fairly measurable
- There is wide disagreement within institutions and departments concerning the importance given to teaching, research, and clinical and administrative services

Category 4. Administration and procedures of faculty evaluation

Descriptions:

- Due to faculty resistance, evaluation somehow fails.
- Faculty members resist evaluation because they do not trust the underlying reasoning
- The tools for gathering faculty work data are not standardized
- There are possibilities for subjective evaluation
- Faculty members have not been treated fairly in the evaluation process

- The evaluation process is in some ways unclear and non-directive
- Departments are not involved
- Faculty members are frustrated because evaluations take time but yield little benefit
- The system does not provide adequate incentives (merit) for excellent performers
- Due to some insufficiency in the evaluation system, feedback is not provided to faculty members

In the open-ended questions used in the survey, more than 78% of the respondents stated that performance of faculty evaluation is not related to faculty development. Also, around 80% of the respondents pointed out that criteria and standards for faculty evaluation are lacking, and many criticized the over-reliance on student opinion and the absence of a multiple-roles approach during evaluation.

Quantitative findings

The instrument was developed by applying the qualitative inquiries described above to adapt the PES to the context of medical schools in Iran. The instrument covered 21 standard measures comprising 27 statements.

Key survey findings

Standards for the principle of propriety

Forty percent of the respondents reported that *service orientation* was frequently achieved, whereas 35% indicated that that it was never accomplished. About 41% stated that *appropriate policies and procedures* were frequently or always evaluated, while about 47% meant that those aspects were never or only occasionally assessed. Also, according to more than half of the respondents, *balanced evaluation* was never or only occasionally performed.

Standards for the principle of utility

Concerning *constructive orientation*, responses were equally split between the options of frequently, always, and occasionally/never achieved. In addition, more than a quarter

of the respondents stated that *professional development* was often fulfilled, whereas 16% indicated that it was never accomplished.

Standards for the principle of accuracy

More than half of the faculty members reported that *validity orientation* was never or only occasionally achieved. On the other hand, more than half stated that *systematic data control* was frequently or always performed.

Standards of sound evaluation

The mean scores for the four basic principles of sound evaluation in the five domains of faculty members' roles indicate that those roles were never or only occasionally fulfilled. None of the participants had chosen the "frequently" or the "always" response option. However, within this range, teaching and research efforts had the highest mean scores, while clinical and healthcare services, institutional administration, and self-development activities were least likely to be evaluated.

8 DISCUSSION

The main purpose of the present research was to gain knowledge about faculty development, using a comprehensive approach focused on the existing development activities at Iranian medical schools. The idea was that our findings could subsequently be applied to help the faculty members and administrators at those institutions to fulfill their multiple roles and to better organize and implement development initiatives. Faculty members represent one of the most important resources at any institution of higher education. The academic success of medical schools depends on the performance of the faculty members—how well they manage their numerous roles and tasks, and how much they contribute to scholarship and innovative activities. Thus academic excellence requires work in the areas of clinical practice, teaching, research, and various types of services [83].

There are internal and external driving forces in Iranian medical schools that challenge the traditional academic triad of teaching, research, and service. Some of these forces are global, for instance the procurement of innovative knowledge, expectations of new students, emergence of novel technologies, and new demands from society [18]. Peculiar to Iran are the challenges caused by the integration of healthcare and medical education, which consist of multiple faculty roles that complicate the professional responsibility sphere. For example, a *clinical academic staff member* in Iran has to perform a wide range of daily tasks, such as the following: teaching and training students in a variety of settings, from a lecture auditorium to community healthcare centers, clinical education in ambulatory situations, patient rounds at hospitals, and operating rooms; assessing and judging performance of students and residents in clinical fields; acting as a supervisor and/or mentor; designing and implementing clinical training curricula; handling administrative positions at different levels (department, school, university, or country); participating in research projects and getting the results published in international peer-reviewed journals. The workload can vary depending on whether the professional in question holds a full-time or a part-time position and his/her discipline or department affiliation.

8.1 Multiple roles of faculty members

In the first study in the present research project, we found that faculty members at Iranian medical schools of different sizes experienced a relatively high level of role

stress. Mean scores were higher for *role overload*, *role-expectation conflict*, *inter-role distance*, *resource inadequacy*, and *role isolation* than for other dimensions of role stress. High *role overload* is expected in Iran, because the investigated faculty members felt that they had too many responsibilities or that too much was expected of them in relation to their available time, resources, skills, and abilities [84,85]. The same applied to *role-expectation conflict* due to the many contradictory demands placed on faculty members. We also found a relatively high level of *personal inadequacy* among faculty, which implies that those individuals felt that they were not sufficiently skilful, competent, and trained to meet the demands of their role. *Inter-role distance*, another dimension of role stress, was high as well, indicating stress due to the multiple roles that had to be performed. In this regard, faculty members may face conflicts between their academic role as teacher/clinician/researcher and their social role. However, such inter-role conflicts are quite common in modern societies, where individuals occupy multiple roles within and outside their organizations [40,84-86]. The dimension *resource inadequacy* was also at a significantly high level among the faculty members in our study. It seemed that they would be more efficient in their organizations, if they had had the self-sufficiency to select tasks and ensure that adequate facilities were available for the jobs at hand, and also to create opportunities to learn new skills [84,85]. This observation reveals problems like deficiencies in terms of institutional and administrative support, and limited resources and time.

Faculty members in Iranian medical schools are sometimes criticized for shortcomings in the way they perform their multiple roles. Notably, our results regarding role stress indicate that the education-healthcare reorganization may be the cause of that problem, since it is plausible that the mentioned deficiencies have arisen because the new system requires the academic staff to handle additional challenging and conflicting roles. The ongoing concern is how to provide social and organizational support for those individuals, and at the same time give them better resources and opportunities. It might be possible to achieve those objectives by implementing development initiatives aimed at extending collaborative relationships among faculty members at different levels and departments, but also by developing appropriate coping strategies and eventually other forms of interventions that are considered suitable. How do existing development activities enable faculty members to address their individual goals as teachers, researchers, scholars, and leaders, as well as their institutional goals?

8.2 Faculty development

The first part of our research project focused on individual aspects of faculty members, but later a more comprehensive definition of “faculty development” was adopted to include individual and professional aspects of faculty development as well as instructional, leadership, and organizational elements. It was necessary to consider how capacity and opportunity are promoted by reform initiatives, because we felt that a comprehensive approach that could facilitate exploration of managerial and pedagogical features of faculty development would help us elucidate such activities in Iran. Accordingly, we developed a questionnaire that can assess faculty development programs from a much broader perspective comprising individual, professional, instructional, leadership, and organizational aspects.

The results of the validity analysis support the questionnaire items with regard to their objectivity in assessing faculty development activities from a comprehensive managerial and pedagogical perspective. In addition, the scope of the instrument covers faculty development activities in its broadest context, including teaching, research, administration, leadership and self-development.

The findings of the survey study highlight some important issues. Failure to conduct needs assessment is a deficiency in current faculty development programs in Iran. In the literature, needs assessment has been recognized as a key element in the planning of faculty development opportunities [27,87,88]. *Lack of faculty partnership* and *underutilization of diverse sources of information* are also factors that affect the Iranian development programs. To address these problems, the EDCs should conduct needs assessments that use a variety of information sources. Such an approach will increase the probability of achieving relevant and realistic learning opportunities, and it will also facilitate the outlining of content areas and skills recognized as necessary for faculty members in different disciplines [88] and even “promote early *buy-in* and interest” [7,21]. Partnership in faculty development programs is another important matter. In short, involving faculty in the conception and elaboration of programs can promote a sense of ownership that can affect the success of a program [88-90]. This challenges Iranian medical schools to apply appropriate approaches to ensure faculty and management partnership in development programs.

The present findings indicate that the situation in Iran is far from optimal for the elements included in the process category of the instrument (i.e., diversity of implementation methods, using active teaching and learning strategies, incentives, and continuity of programs). This means that active participation of faculty members and quality and outcomes of programs are problematic in Iran. Motivating faculty members to participate in faculty development programs is a challenge faced by the professionals who are responsible for such measures, both in Iran and worldwide [10,91].

Continuity of programs is very important. There is evidence that medical schools that offer the greatest support for continued faculty development programs can warrant the success and stability of organizational and personal improvement [92,93]. Continuity in providing sustained and appropriate levels of service, scholarship, and leadership may depend on the long-term viability of faculty development activities in medical schools. In our study, this *process* indicator had the lowest score.

The *output* category includes the following indicators of measurable products of a faculty development system: *obtained skills and abilities*, *satisfaction*, and *achievement of objectives*. We found low mean scores for all these indicators, which implies that the objectives of planned programs are not realized, and that situation may be related to the low scores observed for the *input* and *process* factors. In addition, it was obvious that Iranian medical faculty members are not completely satisfied with the current programs. This is a very important issue that requires consideration, because satisfaction has a direct impact on faculty members' motivation and consequently also their participation in development activities. This observation is in contrast to what has been established in the literature, namely, that even though participation in faculty development programs is voluntary, the overall satisfaction of those who participate is high [88].

Program evaluation may represent a suitable strategy to improve the quality of faculty development initiatives and to reveal how efficiently the system performs in various settings. It is important that comprehensive evaluation is linked to meaningful and measurable outcomes, so that faculty development programs can take advantage of the evaluation results to provide immediate feedback, undertake delineated professional development, and finally achieve the objectives and outcomes. Our results show that evaluation methods used at Iranian medical schools are mainly limited to summative

end-of-session questionnaires and participant self-assessments, and they do not provide feedback from peers or other faculty members. Indeed, faculty development programs should be systematically and soundly appraised in order to ensure that they are sustainable and can guide future efforts across programs. However, in the literature, few faculty development programs have been described that include a comprehensive evaluation to determine the impact on faculty members as learners [10].

8.3 Challenges and obstacles to faculty development systems

We also considered challenges and obstacles that are expected to influence the success of faculty development programs, some of which are common in other scientific contexts as well, for example, balancing individual and organizational needs, choosing appropriate methods and formats, coping with limited resources, and dealing with inadequacy of managerial and/or organizational support, resistance to change, and lack of follow-up activities. Notwithstanding, the following aspects may not be found in contexts other than Iranian medical schools: inadequacy of faculty partnership in decision making, lack of systematic planning and approaches in relation to faculty development, fragmented and parallel structures associated with faculty development activities, and instability of management in the decision-making process. Trying to eliminate these challenges by finding suitable strategies and solutions may guarantee the success of future faculty development initiatives in Iran.

8.4 Shortcomings related to the roles of faculty members

We investigated the multiple roles and responsibilities of faculty in order to ascertain the extent to which they are addressed in development programs. The results show that the programs at Iranian medical schools focus to a greater extent on teaching, research, and personal development, and largely neglect administrative skills and professional community service. However, even the content areas of teaching, research, and personal development do not cover all the skills and competencies that faculty members need. This explains why those professionals are sometimes criticized for deficiencies in performance of their multiple roles.

8.5 Managerial and pedagogical approaches to faculty development

The discussion thus far has concerned some aspects of faculty development activities, with emphasis on the potential benefits and limitations perceived from a comprehensive perspective by academic staff with leadership and managerial positions. The present

work might be regarded as a situational analysis, since categories designated *input*, *process*, and *output* were used to classify elements of the faculty development initiatives implemented in medical schools. *Evaluation* was added as another category, because it is an essential part of all education systems and hence can provide the feedback required to ensure system vitality and progress. These aspects are interlinked and encompass pedagogical as well as organizational elements in faculty development systems.

8.6 Faculty evaluation systems

We investigated the faculty evaluation system of Iranian medical schools in order to determine whether assessment in that context takes into account the multiple roles and responsibilities of the faculty members. It has been recognized that an effective evaluation system should provide sufficient feedback and opportunities to allow continuous professional development of faculty members [51,54,80,94], and therefore many medical schools today are seeking to establish a perfect system that can efficiently and constructively assess faculty performance [57,77]. In Iranian medical schools, a faculty development system is applied in parallel with a system for faculty evaluation.

We focused on areas and components of faculty tasks, because our aim was to create a foundation for the design of a comprehensive approach to faculty evaluation. The categories that emerged from the qualitative study highlighted the difficulties and limitations of existing faculty evaluation systems in four areas: (1) purpose and objectives, (2) criteria and standards, (3) area of faculty evaluation, and (4) administration and procedures. We contextually adapted the PES to enable investigation of the faculty evaluation system used in Iranian medical schools and found that the modified version of that instrument was indeed applicable to the various steps of the Iranian scheme. Moreover, the adapted PES can aid detection and correction of deficiencies. In addition, that tool offers stakeholders opportunities for reviewing existing approaches to faculty evaluation, for developing and assessing new or improved approaches, for guiding those approaches to work beneficially, and for defending sound approaches to meet challenges.

The low PES scores for the four basic principles of sound evaluation (utility, propriety, feasibility, and accuracy) show that the studied evaluation system neither corresponds

to nor consistently addresses the major faculty responsibilities. Furthermore, our faculty survey confirmed faculty members' concerns regarding the evaluation system, indicating that it suffers from challenges in the form of shortcomings related to defining, designing, collecting, analyzing, and reporting of the evaluation process.

Our results strongly suggest that medical school evaluations should address the needs of faculty members so that those professionals can improve their performance, attain defensible personnel decisions, and effectively provide high quality healthcare services and medical education. Although the medical schools we investigated have made efforts to establish faculty evaluation measures, there is still need for improvement. Therefore, our findings have led us to suggest several recommendations that may have implications for the design and implementation of a comprehensive faculty evaluation system.

8.7 The importance of linking faculty evaluation to faculty development

The most remarkable finding of our research is the dissociation between the faculty evaluation and faculty development systems. Two major missions (medical education and provision of healthcare) were merged in Iran, but some of their components were not actually completely integrated. Faculty evaluation and faculty development should be two sides of the same coin. If a certain aspect of faculty performance is to be evaluated, then there should be resources or opportunities that enable faculty to gain or enhance the skills necessary for that particular function. To achieve maximum improvement, faculty evaluation systems should be linked to faculty development programs.

No matter how well a faculty evaluation system is designed, if it is implemented without reference to faculty development opportunities or programs, it will inevitably be viewed by faculty members as being primarily punitive in nature. On the other hand, when faculty development programs are executed without clear reference to the information generated by faculty evaluation systems, the effects tend to be disappointing. This is very important to keep in mind, if the objective is to attract those who are not motivated to participate but are nonetheless in need of development opportunities. Only when the elements of a faculty evaluation program are carefully integrated into a faculty development program, will it be possible for medical schools to obtain participation and benefits [46,49,50]. Therefore, a successful faculty

evaluation system must provide meaningful feedback to guide faculty development in all aspects and content areas, and to supply information that can serve as a basis for personnel decisions.

8.8 A framework for effective faculty development programs

Reorganization of medical education and delivery of healthcare services requires application of an effective faculty development system. If such a scheme is seen as a possible solution and strategy to solve many problems that arise, then the question is what faculty development programs will work best in the particular context of medical schools.

Planning and implementing faculty development is not an easy task [7]. There are probably as many barriers to achieving relevant programs as there are factors driving the process. Devising an effective development plan demands that attention be focused on several components, among them the following:

- The mission and goals of the medical school in implementing development activities
- The levels of faculty members (entry, mid, or top level)
- Type of faculty (tenured, non-tenured, probationary)
- Priority of the medical school in addressing diverse needs of faculty members
- Faculty involvement in the planning of faculty development programs
- Incentives and a framework to motivate faculty members
- All faculty members are given opportunities for improvement and rewards for participation
- Ability of development programs to impart multiple skills among faculty members, giving extensive consideration to teaching, research, administration, and other scholarly activities
- Sufficient numbers of qualified academic staff members to conduct faculty development programs
- Existence of an evaluation system using different sources to provide valid and important information and feedback to faculty members about their roles
- Appropriate resource allocation
- Leadership support from different stakeholders (chancellor, dean, junior and senior administrators, committees, heads of departments)

8.9 Different ways to conduct a needs assessment survey

The key point identified in the literature with respect to planning faculty development opportunities is the necessity of determining faculty needs. It has been pointed out that the question of what types of development programs are appropriate can be answered only if we understand the needs of faculty members [88]. Hence, Iranian medical schools should accurately identify the needs of their faculties in order to design and implement relevant and realistic programs.

Needs assessments can be managed using a variety of sources and methods [95], for example, by doing the following: (1) asking the potential participants themselves through application of interviews, questionnaires, and focus groups; (2) relying on outside observers; (3) conducting a task analysis; (4) reviewing relevant literature on faculty development. Using several sources of data can enrich the interpretations and subsequent planning. Obviously performance of a well-constructed and thoroughly considered needs assessment does not guarantee successful faculty development, but it is the first indispensable step in the process of planning faculty development measures.

Reviewing the literature has revealed some guidelines for successful faculty development, although it is not entirely apparent how it is intended that those strategies be applied in specific settings. The key to beneficial development programs is to find the correct mix of progressive activities and programs that are best suited to a particular situation. This highlights the importance of a careful and thorough needs assessment, as well as other participatory mechanisms that can provide guidance in customizing a faculty development program.

The unique institutional settings in which faculty development occurs affect the strategies and criteria used to measure the quality and effectiveness of programs. Thus it can be appropriate to devise a framework to facilitate the process of planning and assessing activities aimed at faculty development. Given the importance of linking faculty development and faculty evaluation systems, as well as the problems related to role conflicts, I would like to propose application of the framework or guideline summarized in Figure 6.

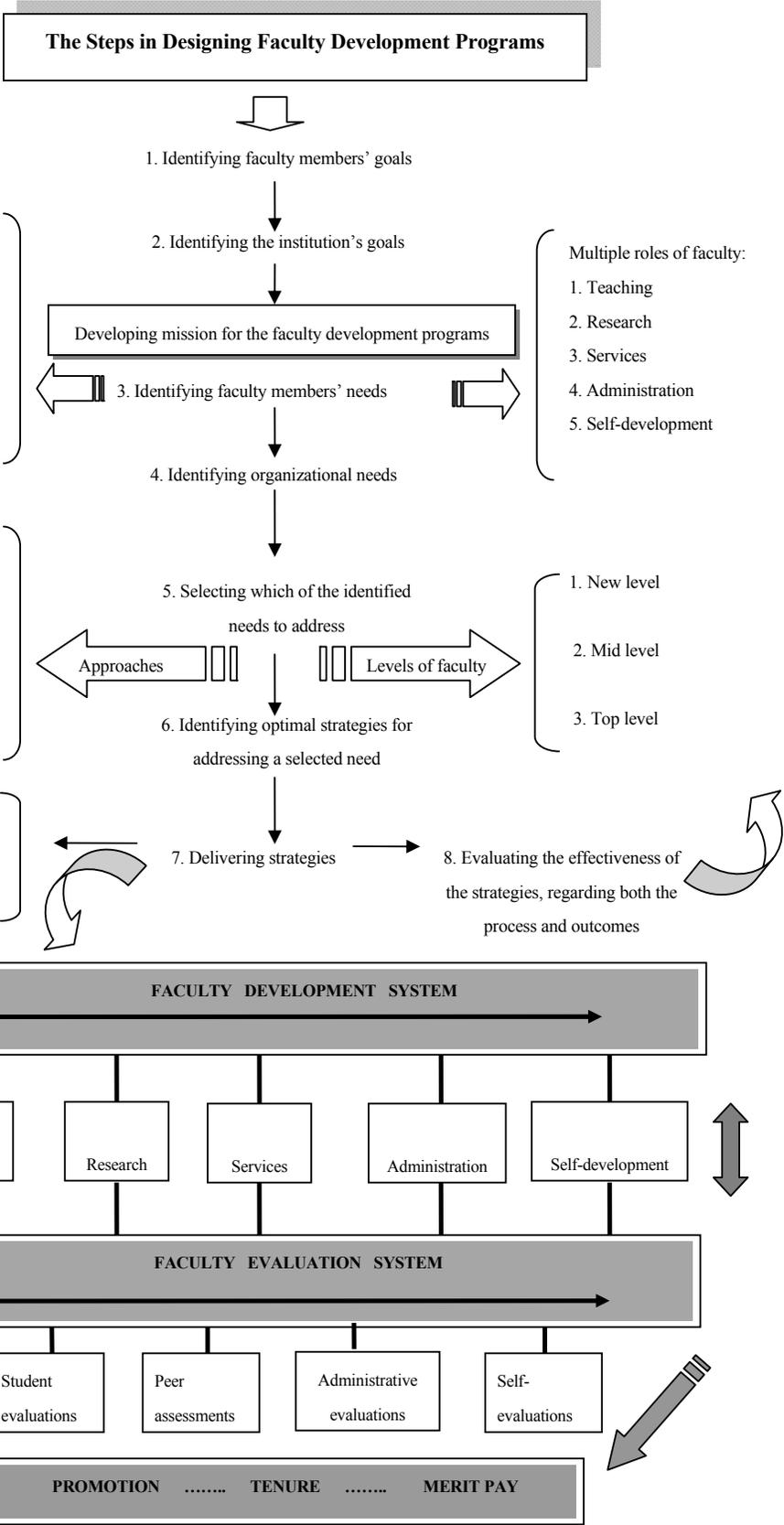


Figure 6. A framework for planning effective faculty development programs and the link between faculty development and evaluation systems.

The illustrated course of action may aid faculty leaders and administrators to design, develop, and implement an effective development system that can support faculty members in fulfilling their multiple roles and enhancing their performance in academic leadership. This framework might also help the developers, administrators, and leaders to constructively assess the implemented programs.

The framework suggested in Figure 6 follows some straightforward steps that can be used to establish any type of program [17,26], although here the institutional environment was in focus to enable theorization about faculty development. By conducting needs assessment, and consequently considering areas that should be dealt with to help faculty members perform their roles and accomplish their goals, it will also become possible to identify organizational and individual goals.

The next step entails selection of which of the identified needs should be addressed. To accomplish that objective, all aspects of a comprehensive faculty development program (i.e., professional, instructional, leadership, and organizational elements) should be thoroughly examined. To strengthen the development efforts, it is also important to identify the sources of institutional support, which can include the following: the faculty members (may resist some initiatives), the department heads and senior administrators, and faculty development committees (can contribute to improvement activities in all steps). In addition, to make it possible to select which program is appropriately tailored to meet the needs at each level, the suggested framework assigns faculty members to three categories: new level, mid level, and top level [19]. Consequently, all faculty members will have the opportunity to improve themselves based on their real needs. For example, new-level faculty will need development programs that are intended to provide more professional knowledge and skills that can help them succeed as academics; suitable topics that can be covered in that context are things like orientation to academic culture and climate, how to achieve academic promotion, and general pedagogical skills. For upper-level faculty members, such as educational scholars and organizational leaders, it will be more appropriate to offer programs that are oriented towards leadership and organizational development, for instance providing information about how to lead groups, how to get things done in organizations, how to manage yourself and others, and how to create participative structures. Accordingly, this level categorization will make it possible for faculty development programs to meet the needs of faculty members in their academic careers,

starting from their initial appointment, through promotion, tenure, and supervisory or leadership duties, and finally retirement [96].

In this case, in the framework step involving *identification of optimal strategies for addressing a need*, it will be necessary to address more than one need at a time, considering the two matters of identifying individual faculty development initiatives and designing frameworks for coordinating multiple initiatives [17,26].

The final, crucial step shown in Figure 6 is to close the achievement gap by linking the faculty evaluation system to the faculty development system. This important issue has definitely not been given enough attention in Iranian medical schools. More extensive efforts in this area would ensure that participation in faculty development will be considered as a criterion for promotion [26,87]. Today, promotion of faculty members in academic medicine is largely based on excellence in teaching and scholarship [97].

In the present research, we applied a comprehensive approach to faculty development on a systematic intra-institutional scale, which combined the established principles of such development with pedagogical and managerial elements. Listing the components of the programs as well as standards of faculty improvement has provided a useful and practical tool that will hopefully aid decision-makers in Iran. That strategy has also further given us a better understanding of the limitations and potentials of faculty development activities.

In short, our undertakings can be described as a comprehensive and systematic analysis of many aspects of faculty development programs in Iran, which can be regarded as being even more important in the unique and integrated medical education system that exists in the country today. Our intent was to devise an approach to address the problems and challenges facing that new conglomerate system, and our research efforts brought us to realize that faculty development may represent a vital strategy in a solution that can help align the highly conflicting issues associated with the integration of healthcare and medical education. Thus, it is apparent that the changes that occur should be considered from the viewpoints of all the stakeholders. We cannot make changes that impact a group of individuals without understanding what those people need and how they will behave under the conditions applied. This means that a comprehensive approach to faculty development offers an

ideal opportunity and strategy to assist those who participate in the process of change, which can be achieved by understanding the needs of the targeted individuals, as well as the needs of the organization with respect to the skills and behaviors of its personnel. Indeed, it may not be possible to accomplish such development without the use of comprehensive faculty development programs.

8.10 METHODOLOGICAL CONSIDERATIONS

We used a mixed-method research design that combined different data sources, data collection strategies, and analytical techniques. Qualitative and quantitative data collection was performed to reveal various aspects of the contextual reality. Combining methods enabled triangulation, and use of that approach was based on the rationale that no single method of data collection can adequately resolve the problem of rival causal factors [98,99].

The quantitative data used in our research were captured by the surveys we conducted. The survey method is the most popular technique for investigating health and healthcare, and related issues. Surveys are well suited for use in descriptive studies, but they can also be employed to explore aspects of a given situation or to seek explanations and provide data for testing a hypothesis. Mail surveys have been proven successful for gathering data about sensitive topics [100]. Therefore, in Study I we carried out a survey using a standard and validated scale, and in Studies III and IV we used our own survey instruments.

For data collection in Study I, we adapted the standard Organizational Role Stress Scale for use in Iranian medical schools. We translated the items in that instrument into Persian, taking into consideration the cultural context and the background and context of the investigation. Cross-cultural adaptation was performed according to recommended guidelines developed by Guillemin et al. [101]. We also performed a pilot test, since such investigation is a necessary step when designing or adapting an instrument to fit a particular topic. Another reason for the pilot testing was to ensure that the translated scale had retained the intended psychometric properties.

By using a qualitative research method, we were able to explore the phenomena of interest within the actual environment of medical schools by conducting discussions and interviews with the people who had experienced the subject of our research—

faculty development. The goal of our qualitative inquiries was to understand the situation at hand, but we make no claims to having attempted to or succeeded in achieving generalizability. Our data collection method consisted of interviews, which represent the most familiar and most frequently employed form of gathering information in qualitative investigation of medical education [102]. We used a semi-structured interview format [103] so that we could change the order of the questions, reformulate questions, and probe the participants to obtain better comprehension and clarification. Thematic content analysis (qualitative content analysis) was used as a specific approach that categorizes data according to topics, ideas, or concepts, which are often called themes [104]. We applied this approach to analyze the data, with coding as part of the basic process. Coding involves sorting or organizing the data into categories by considering similar trends [105]. Qualitative research is not performed to accomplish representativeness, but instead to enhance and saturate theoretical sensitivity by means of strategic sampling [105]. Therefore, we used purposeful (or strategic) sampling to select interviewees, because that approach can cover a range of potentially relevant key informants.

To address the aspect of rigor, we considered the issue of trustworthiness. Lincoln and Guba [106,107] stipulate four criteria for trustworthiness: credibility, transferability, dependability, and confirmability. According to those authors, *credibility* (internal validity in quantitative methods) refers to “the adequate representation of the constructions of the social world under study,” and it concerns the rigorous and tedious processes of data gathering and analysis to meet the objectives of the research. Activities that are recommended to address those issues include triangulation, checking interpretation against raw data, peer debriefing, and member checking. We believe that our work has met those criterion, because we did the following: member checking through sharing of the findings with the interviewees to determine whether their viewpoints were faithfully interpreted; peer debriefing during collection and analysis of the data until the research group reached consensus; additional and constant comparison analysis involving continual returning to and validating of the data to verify the categories that were created. Furthermore, investigator triangulation was applied in that our interview transcripts were read and coded independently by two researchers, and any differences were resolved by subsequent discussions. *Dependability* refers to “the coherence of the internal process and the way the researchers account for changing conditions in the phenomena.” The major technique for establishing dependability is

“auditing” (i.e., checking the consistency of the study process), and we met that criterion by verbatim transcription of the audio-recordings of all interviews. Lincoln and Guba explain *confirmability* as “the extent to which the characteristics of the data, as posited by the researchers, can be confirmed by others who read or review the research results.” The major technique for establishing confirmability is also auditing (in this case, by checking internal coherence of the research product). The fourth criterion of trustworthiness is *Transferability* refers to “the extent to which the researchers’ working hypothesis can be applied to another context.” The researchers’ task is not to provide an index for transferability, but rather to furnish data sets and a sufficient number of descriptions to make it possible to judge transferability.

8.10.1 Limitations of the present research

All research has both strengths and weaknesses, and indeed some of those aspects of the present work were highlighted in the discussion above. I would also like to mention that our first study had two limitations: we focused on medical school faculty, and we did not address or make comparisons with how other non-medical faculty members perceive role stress. In our second study, the sample size was good, the response rate was acceptable, and we used a survey instrument with confirmed validity and reliability. Furthermore, the method of sampling was convenient for investigating medical schools according to their national rank, and we had good access to samples. In the second and third surveys, which were conducted in studies three and four, the sample sizes were based on stratified random sampling among academic staff at Iranian medical schools. However, since we were interested in the topics of faculty development and faculty evaluation, it might also have been of value if we had included graduate and postgraduate students, as well as residents and stakeholders in those studies. Nevertheless, we feel that the samples we chose were adequate to give us an understanding of the current situations regarding the faculty development and evaluation systems.

9 CONCLUSIONS AND SOME PRACTICAL AND POLICY IMPLICATIONS

In recent years, there has been a renewed interest in programs for faculty development and faculty evaluation at medical universities, both in general and in Iran in particular. As a result of this interest, medical universities and schools in Iran have established EDCs (at a university level) and EDOs (at a school level), which are responsible for improving teaching and other scholarly activities to meet the developmental needs of their faculty members. However, despite the extensive attention being given to faculty development and evaluation issues, and various positive aspects of these organizations, it seems that the initiatives taken are still far from being practical or appropriate. Notably, even faculty development does not comply with any educational or curricular reform. This is exemplified by the fact that a growing amount of attention has been paid to the redesign and integration of curricula, while little interest has been focused on the perceptions of stakeholders, and especially faculty members, during the transition from traditional to integrated curricula.

We used well-established results from the literature and validated those findings in the context of Iranian medical schools. That approach enabled us to examine faculty development and evaluation systems at those institutions as a means of devising an appropriate strategy or framework that can be applied to align the conflicting issues and pressing challenges of integration now being faced by the faculty members. A comprehensive approach to faculty development that is accompanied by an evaluation plan may represent a suitable framework to achieve the potential of the integration of healthcare delivery and medical education in Iran.

A key strategy in this regard is to identify the specific requirements that will secure early faculty involvement and in that way keep development programs centered on the participants [7,27,44,90,108]. In addition, the appropriateness of resource allocation and utilization should be ensured, since that aspect constitutes an essential standard in all staff development initiatives [8,45]. It is also necessary to establish a validated and standard needs assessment scale. A well-designed participant-satisfaction questionnaire may give program planners valuable feedback regarding the effectiveness of teaching and learning strategies and the perceived relevance of the content [10].

Based on our results, we conclude that the Iranian faculty evaluation system still has some problems, one of which is related to the dissociation between the faculty evaluation and development systems. To address those difficulties, here we offer five recommendations for conducting an effective faculty evaluation. First, lack of a methodical and comprehensive approach to faculty evaluation may reduce the impact of improvement initiatives, and hence those in charge of evaluation should be aware of the formative aspects of the evaluation system, and they should consider incorporating developmental concerns into the evaluation objectives [109]. Second, in light of the importance of the relationship between faculty evaluation and development, those two systems should inform both faculty members and administrators about areas that require professional development, which will allow faculty members to better address the missions and goals of their institution and fulfill their roles and responsibilities [80,110,111]. Third, medical schools should involve faculty members in the creation of a faculty evaluation system; if such a system is to enhance potential faculty contributions, it should be able to assess all aspects of the academic organization. Fourth, based on our results obtained using a systematic and comprehensive approach to faculty evaluation and adaption of the PES, we feel that it is important to produce and provide sound information that identifies both the strengths and the weaknesses of faculty members. That objective can be attained by addressing appropriate questions and issues, and using sound methodology. Along with that, analysis based on the standard measure of *defined expectations* should be done to clearly define the qualifications, roles, and performance expectations of faculty members in order to produce valid information. Our fifth and final recommendation is that the evaluation system be used to provide an overview of faculty members' performance that is essential for their professional careers.

In any case, not all systems are perfect, and thus academic institutions should continuously explore new ways to improve their faculty evaluation systems [110,112,113]. Therefore, our analysis of strategies for establishing a faculty evaluation system in an Iranian context is of value, not only because it provides a guide for the design of a new and better approach to such evaluation in Iranian medical schools, but also because it describes the experience of a meta-evaluation that might be useful to investigators in other parts of the world as well. Lastly, it should be mentioned that further research is needed to elucidate different aspects of faculty evaluation systems that stress faculty development over faculty evaluation. A new investigation of the type

we performed may guide academic staff and administrators to decide whether faculty development and evaluation programs can be combined in a single initiative.

We hope that the present results will have implications for research, practice, and policy making, which will in turn add to our understanding by providing innovative ways to organize, conduct, and assess faculty development and evaluation efforts at Iranian medical schools. Moreover, it is our desire that the findings of our studies can further encourage medical universities in general and medical schools in particular to give faculty development a central role in relation to the strategic planning [114], management, and leadership of those institutions.

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In everything, **God** works for good with those who love Him. I give my sincere thanks to You, the Almighty. We need God, not in order to understand the why, but in order to feel and sustain the ultimate wherefore, to give a meaning to the universe.

Stockholm, May 9, 2009

Soleiman Ahmady

11 APPENDIX

Appendix I: the definition of ORSS dimensions

Inter-Role Distance (IRD): conflict between one's organizational role and other roles, e.g., between travel on the job and spending time with one's family.

Role Stagnation (RS): a feeling of stagnation and lack of growth in the job because of few opportunities for learning and growth.

Role-Expectations Conflict (REC): conflicting demands placed on one from others in the organization, e.g., producing excellent work but finishing under severe time restraints.

Role Erosion (RE): a decrease in one's level of responsibility or a feeling of not being fully utilized.

Role Overload (RO): too much to do and too many responsibilities to do everything well.

Role Isolation (RIs): feelings of being isolated from channels of information and not being part of what is happening.

Personal Inadequacy (PI): lack of knowledge, skill, or preparation to be effective in a particular role.

Self/Role Conflict (S/RC): a conflict between one's personal values or interests and one's job requirements.

Role Ambiguity (RA): unclear feedback from others about one's responsibilities and performance.

Resource Inadequacy (RIn): lack of resources or information necessary to perform well in a role.

Appendix II: the instrument



Isfahan University of Medical Sciences

Dear faculty members,

As you know, faculty members have become an increasingly important component of medical education, and indeed, it is quite clear that they are hired more for their content knowledge and skills than for their educational and scholarly expertise. Also, the administrative and organizational competencies necessary for leaders in medical fields are not usually developed during graduate education in medical schools. Consequently, faculty members may be asked to perform duties for which they have not received formal training, and, because of this emphasis, they are sometimes criticized for shortcomings in how they carry out their multiple roles.

After the complete integration of medical education into health care delivery in Iran, extensive efforts were focused on establishing Educational Development Centres (EDCs). The primary goal of those centres is to enhance teaching skills and scholarly activities of faculty members in order to ensure their successful performance.

After two decades, it is now time to go back and review the situations of the implemented programmes regarding their effectiveness and impact on faculty, an objective that requires a systematic analysis of faculty development at the medical schools. The present study has been designed to achieve such analysis and is being implemented at Iranian medical schools in collaboration with Karolinska Institutet (Sweden), the Iranian National Public Health Management Centre (NPMC), and the Medical Education Research Centre (MERC; medical University of Isfahan). Therefore, with respect for your valuable experience in this context, we would greatly appreciate it if you would complete the enclosed questionnaire.

Many thanks for your kind attentions

Department affiliation

- Basic sciences
- Medical clinical
- Surgical clinical

Age (years) . □□□□

Gender: Female Male

Experience (number of years) as a faculty member

Academic rank:

- Professor
- Associate professor
- Assistant professor
- Instructor

Terms of employment:

- Tenure
- Probationary
- Non-tenure
- Other

Please check all titles that apply to you

- | | |
|---|--|
| <input type="checkbox"/> Vice chancellor of education or research | <input type="checkbox"/> Dean of school |
| <input type="checkbox"/> Associate/Assistant dean | <input type="checkbox"/> Head of department |
| <input type="checkbox"/> Senior-level administrator | <input type="checkbox"/> Director of EDC |
| <input type="checkbox"/> Faculty developer | <input type="checkbox"/> Other (please specify): |

How long (number of years) have you held a position of responsibility in faculty development and/or related to the affairs of faculty members?

□□□□□

How many faculty development programs have you participated in over the last two years? □□□□□

Please designate them if possible:

- 1.
- 2.
- 3.

Needs assessment:

Needs assessment is defined as determination of the gap between “what is” and “what should be,” and determining faculty needs is the first and necessary step in the process of planning faculty development programmes. To obtain information about such programmes at the medical institute where you work, we need to know your opinions about the conditions that exist in relation to different aspects of needs assessment, which we intend to explore by use of the following questions.

Choose the answer that best matches your view, but please tick only one response to each statement, according to the following scale: 1 = no, 2 = to some extent, 3 = yes.

I. Performing needs assessment	
1. Has needs assessment been carried out as a first step in planning faculty development programs at your institute?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Have the actual training needs of faculty members been assessed during the process of program planning at your school?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
II. Partnership in needs assessment	
3. Has your school had a regular and structured plan for getting faculty members to be involved and participate in the process of needs assessment?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
4. Did faculty members really participate in all stages of the needs assessment?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
To get many stakeholders involved in describing the problems and needs of faculty development, which of the following stakeholders have participated in the process of needs assessment?	
5. Faculty members	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
6. Heads of departments	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
7. Educational development office directors (school level)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
8. Deans or vice deans of schools	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
9. Educational development centre directors (university level)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
10. Directors of undergraduate and/or postgraduate programmes	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
III. Using diverse sources of information	
Which of the following have been applied to achieve diversity in the sources of information used in needs assessments?	
11. Results and information obtained from evaluation of faculty members by EDCs	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
12. Results and information obtained from evaluation of faculty by heads of departments	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
13. Results and information obtained from faculty portfolios	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
14. Results and information obtained from records of faculty members' current and ordinary activities (e.g., community, clinical, and/or administrative services)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

IV. Addressing diverse needs

Given the importance of applying the results of needs assessment in selection of programme topics and even prioritization of the programme contents, which of the following have been addressed at your school?	
15. Basing goals and objectives of programmes on the real needs of faculty	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
16. Meeting different needs of faculty members according to their different academic positions	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
17. Delivering different programmes based on the size and scientific ranking of the medical schools	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
18. Considering enhancement of faculty teaching skills to be a preference and a prominent need	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

V. Appropriateness of resources

Concerning allocation of leadership support and resources:	
19. Has your school provided sufficient resources (e.g., funding, space, technology, and materials), leadership, and administrative support for faculty development activities?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
20. Has your school used a specific timetable for motivating faculty members to participate in faculty development activities (i.e., not other typical/current daily activities)?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

VI. Diversity of contents and topics

This section is intended to provide information about what aspects are most important to consider in faculty development programmes, based on the priorities and available resources at the medical schools. Please indicate which of the following skills and content areas (topics) have been addressed by programmes at your school?	
21. Knowledge and skills related to teaching and learning (viewed as a scholarly activity)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
22. Knowledge and skills necessary to assess student competency and performance	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
23. Knowledge and skills necessary for clinical teaching (bedside and ambulatory)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
24. Knowledge and skills related to instructional design	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
25. Knowledge and skills related to research (designing, implementing and conducting research projects; knowing how to get research results published; knowing how to review or appraise scientific literature)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
26. Knowledge and skills necessary for working with/in teams	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
27. Knowledge and skills necessary for doing mentorship and/or being mentored	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
28. Knowledge and skills necessary to perform supervision and counseling	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
29. Teaching of specific subject matter in areas such as information technology, evidence-based medicine, and professionalism	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
30. Knowledge and skills necessary to provide educational leadership	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
31. Knowledge and skills necessary to achieve interpersonal communication	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

VII. Diversity of implementation methods	
32. Has your school conducted different, specially designed faculty development programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
33. Have the ongoing faculty development programmes at your school utilized new teaching and learning methods?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
34. Have delivered faculty development programmes used different formats (e.g., workshops, seminars, short courses, integrated longitudinal programmes, or decentralized activities)?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
VIII. Access to programs	
35. Are faculty development activities readily available at your school (campus)?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
36. Has your school sent faculty members off campus for more training?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
IX. Using active teaching and learning strategies	
Which of the following principles have been given extensive consideration during the planning and implementing of faculty development programmes at your school?	
37. Programmes have applied principles of adult learning (e.g., set expectations, practice opportunities, and evaluate performance)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
38. Programmes have been relevant and practical (appropriate level of content)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
39. There has been an atmosphere of caring and trust	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
40. Programmes have been based on collaboration, teamwork, and shared vision	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
X. Continuity of programmes	
To prepare the way for continuity of programmes at your school, please answer the following questions:	
41. Have programs been conducted according to a regular and systematic plan?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
42. Have the infrastructure and groundwork of the programmes been established?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
43. Have administrators ensured the continuity of the programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
44. Has faculty development been considered to be the task of administrators and the faculty members themselves?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
XI. Incentives	
As a means of motivating faculty participation and determining who excels:	
45. Have faculty members been given appropriate incentives to participate in programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
46. Has your school respected and honoured faculty members for successes associated with their active participation in programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
47. Has your school established reward structure for faculty participation in programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Does your school consider faculty participation in programmes to be a criterion for:	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
48. Faculty evaluation?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
49. Full-time salary?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
50. Faculty academic career development (tenure/promotion)?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
51. Awarding scholarships or grants, or other academic activities?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

XII. Acquired skills and abilities

The knowledge, skills, or attitudes that have been acquired have been taught in the programmes.

Which of the following proficiencies acquired by or enhanced among faculty members can be traced to continuous participation in the programmes?	
52. Skills in curriculum development and implementation	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
53. Teaching skills and educational research	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
54. Research skills and competencies	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
55. Communication skills and self-management	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
56. Specific competencies required for interdisciplinary work	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
57. Specific competencies required for academic leadership	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
58. Changes in attitudes towards teaching (e.g., applying problem-based active learning)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
59. Being able to change and influence student learning	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
60. Being able to change the organizational environment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

XIII. Satisfaction

61. A. Has your school assessed faculty members regarding their satisfaction with faculty development activities?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
62. B. If so, have the faculty members expressed their satisfaction with the ongoing development activities?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

XIV. Achievement of objectives

63. Do you think the identified needs and preferences of faculty members are matched and addressed by the faculty development programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
64. Has your school facilitated the faculty development programmes by creating an environment that is conducive to application of the knowledge and skills that are acquired?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
65. Do you think the objectives and priorities of your school have been met by existing programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
66. Considering content and method of delivery, have the current programmes at your school made an effective impact on the performance of faculty members?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Evaluation

Evaluation is a key component in demonstrating the value and benefits of any programme. Accordingly, the design of a faculty development programme should also include a plan for evaluating the outcomes and progress of the participants. With that in mind, please reply to the following questions:

XV. Program evaluation

67. A. Has your school conducted evaluations aimed at improving and measuring the impact of implemented programmes?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
68. B. If so, have those evaluations been based on the intended learning outcome?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

XVI. Feedback system

69. Does your school have an established and efficient system for providing feedback on faculty development activities?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
70. Has the current feedback system helped improve the quality of faculty development activities?	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Faculty roles addressed in programmes

Considering the importance of the multiple functions and responsibilities of faculty members, have any development activities that have been implemented helped prepare those professionals for their roles as or in the following?	
71. Teachers	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
72. Researchers	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
73. Practice (e.g., clinical/allied healthcare services)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
74. Administrators	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
75. Personal development	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
76. Professional community services	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

For each of the items listed below, please tick only one of the three response options:
1 = no influence, 2 = weak influence, 3 = strong influence.

Obstacles and challenges

Which of the following obstacles and challenges have influenced the extent of the success of faculty development programmes?	
77. Inadequacy of managerial and/or organizational support	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
78. Inadequacy of support from the department and school	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
79. Inadequacy of faculty partnership in decision making	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
80. Fragmented and parallel structures dealing with faculty development activities	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
81. Instability of management in the decision-making process	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
82. Resistance to change	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
83. Lack of follow-up activities	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
84. Lack of standards in faculty training (i.e., no formal definition and compilation of minimum requirements for the professional skills of faculty)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
85. Lack of systematic approach to the faculty training process	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

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