Effectiveness and Needs Assessment of Faculty Development Programme for Medical Education
Experience from Saudi Arabia

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ABSTRACT: Objectives: Faculty members are the most important resource in any institution of higher education as medical education has been, and continues to be, a priority for medical colleges in Saudi Arabia. This study aimed to assess faculty members’ perceptions of faculty development programmes (FDPs) in supporting important goals in medical education. In addition, this study aimed to assess faculty members’ perceived needs. Methods: This cross-sectional study was conducted between August 2016 and August 2017 and involved participants from six universities in Saudi Arabia’s Western Province. The survey consisted of 31 items designed to assess FDP effectiveness and 49 items designed to assess needs in FDPs. Results: A total of 210 faculty members participated in the study (response rate = 52.5%) and identified 49 needs. Faculty members perceived personal improvement in delivering medical education and the provision of greater educational involvement as the most effective considerations in an FDP. The respondents considered 13 needs to be of utmost importance; the remaining were considered important. Conclusion: This study assessed and identified faculty needs and important skills to consider when establishing an FDP. Furthermore, it provided information addressing the needs of, or gaps between, current and desired conditions in medical education in Saudi Arabia. The study also identified the most important elements (i.e., personal improvement) of faculty-perceived effectiveness for a successful FDP in medical education.

Keywords: Faculty; Program Development; Needs Assessment; Perception; Medical Education; Saudi Arabia.
MEDICAL EDUCATION HAS BEEN, AND continues to be, the highest priority of medical colleges in Saudi Arabia. This prioritisation is evident in the establishment of more than 35 medical colleges nationwide. Every medical college has a goal, vision, mission and core values that it tries to maintain and adhere to through a carefully articulated curriculum. Physicians who graduate from these colleges must be competent, professional and able to respond to needs within the society.

A faculty development programme (FDP) is a planned activity that is designed to improve an individual’s knowledge and skills in areas considered essential to the performance of a faculty member as a teacher, researcher or administrator in order to address needs for future development. Faculty development can lay the foundation of quality enhancement in medical education.

Faculty members are the most important resources in any institution of higher education. Therefore, an FDP should act as a resource to meet faculty members’ individual goals as teachers, scholars and leaders. Faculty members at medical schools must be talented and productive teachers, effective clinicians and successful researchers. These pressures have evolved from the competition between different medical schools and institutions, contemporary curriculum development and shortcomings in research, teaching and production. In addition, FDPs must prepare faculty members to deal with rapidly occurring changes in medical education, healthcare delivery systems and clinical teaching and practice. Glowacki-Dudka and Brown elucidated the most beneficial effects of FDPs as self-evaluation through teaching scales, awareness of effective teaching methods and student evaluations. However, the beneficial effects of FDPs were later found to be broader than what was described by Glowacki-Dudka and Brown and other benefits were established.

A needs assessment is defined as a systematic process of collecting and analysing information to address the gaps between current and desired conditions. This study is one of three parallel projects that tackled different aspects of FDPs. Although the same inclusion and exclusion criteria were used across all three projects, separate groups of surveyors used entirely different questionnaires for each project. This study aimed to assess faculty members’ perceptions of FDP effectiveness and identify the most important goals for the programme. Additionally, this study aimed to assess the perceived needs of faculty members participating in FDPs.

Methods

This cross-sectional study involved participants from six universities in Saudi Arabia’s Western Province and was conducted from August 2016 to August 2017. The participants were faculty members who had worked as full-time or joint appointees, taught with or without clinical assignments and had participated in FDPs during the previous two years. Newly employed and part-time faculty members and those classified as serving in non-teaching positions were excluded. Participants were selected through a consecutive sampling technique which was based on eligibility criteria.

The total number of faculty members in the population under consideration was 400. The required sample size was estimated at a 95% confidence level with an estimated 40% response distribution and a margin of error of ± 5%. The required minimum sample size, calculated using Raosoft® (Raosoft, Inc., Seattle, Washington, USA) was 197, and the final sample size was determined to be 210, accounting for an approximately 10% non-response rate.

The questionnaire used in this study was a pre-designed self-administered tool generated by previous research. This comprehensive questionnaire included all possible items from related publications in the literature. The items of the questionnaire were divided into two sections that addressed two different aspects of faculty development (i.e. needs and effectiveness). The researchers personally distributed the survey to maximise the number of completed items and allow participants to ask questions. Explaining the purpose of the study and its impact on enhancing FDPs encouraged the faculty members to complete the questionnaires.

The survey consisted of 31 items designed to assess the effectiveness of FDPs and 49 items designed to assess the needs that should be addressed by FDPs. The questionnaires used a five-point Likert scale with ordinarily scaled options. The options for the first questionnaire were: one, not effective; two, less effective; three, somewhat effective; four, moderately effective; and five, more effective. For the second questionnaire, the options were: one, not at all important; two, not very important; three, moderately important; four, important; and five, very important. In addition, the demographic profile of the participants was collected to identify whether any demographic and work factors correlated with perceptions of FDPs.

The validity of the questionnaire’s content was ensured by consulting a panel of experts in the field of
FDPs for review and modifications. The panel included three local experts from King Saud bin Abdulaziz University for Health Sciences (KSAU-HS) and three international experts from three different universities in the USA. Analyses of data collected during pilot testing were conducted using Cronbach α for internal consistency, which demonstrated high reliability. The scales’ and subscales’ consistency were determined by factor analysis.

Statistical Package for the Social Sciences (SPSS), Version 23 (IBM Corp., Armonk, New York, USA) was used to analyse the collected data. To summarise quantitative variables, descriptive statistics such as mean, median and standard deviation were used. Frequencies and percentages were used to summarise qualitative variables.

To ensure the confidentiality of information, all questionnaires were completed and submitted anonymously. Furthermore, the cover page of each questionnaire explained confidentiality issues, including instructions on how to complete the questionnaire and provided space for participants to give informed consent to participate in the study. The Institutional Review Board of King Abdullah International Medical Research Center, Riyadh, Saudi Arabia, approved this study (IRB/C/430/16).

Results

A total of 210 faculty members participated in the study (response rate = 52.5%). Most participants were from KSAU-HS (56.7%), followed by Batterjee College (BC; 13.8%), Taif University (TU; 10.5%), Ibn Sina College (IBSC; 6.8%), Umm Al Qura University (UQU; 7.1%) and Rabigh University (RU; 3.3%). The majority of participants were full-time faculty members (81.4%), over 40 years old (80.5%) and male (75.2%). Only 1% did not specify their gender. In terms of highest educational achievement, most participants were PhD degree holders (67.1%), followed by master’s degree (21%) or bachelor’s degree holders (9%). The distribution of academic positions of the participants showed that most were assistant professors (54.3%), followed by associate professors (18.6%), professors (15.2%), lecturers (8.6%) and teaching assistants (3.3%). Regarding the length of teaching experience, most participants had taught for between 3–10 years (52.4%), followed by 11–20 years (20%) teaching experience. Some had less than two years of teaching experience (15.7%) while fewer had more than 20 years teaching experience (10%) [Table 1].

Faculty members perceived the two most effective items to be addressed in an FDP as the improvement of personal qualities and making provisions for greater educational involvement (mean = 4.22 ± 0.88

| Table 1: Characteristics of faculty members of medical schools in Saudi Arabia who participated in this study (N = 210) |
|---------------------------------------------------------------|
| **Characteristic** | **n (%)** |
| **Institution name** | |
| KSAU-HS | 119 (56.7) |
| UQU | 15 (7.1) |
| BC | 29 (13.8) |
| IBSC | 18 (8.6) |
| RU | 7 (3.3) |
| TU | 22 (10.5) |
| **Employment status** | |
| Full-time | 171 (81.4) |
| Joint appointees | 39 (18.6) |
| **Age in years** | |
| 25–30 | 4 (1.9) |
| 31–35 | 9 (4.3) |
| 36–40 | 26 (12.4) |
| 41–45 | 64 (30.5) |
| 46–50 | 51 (24.3) |
| >50 | 54 (25.7) |
| Not known | 2 (1) |
| **Gender** | |
| Male | 158 (75.2) |
| Female | 50 (23.8) |
| Not known | 2 (1) |
| **Highest educational achievement** | |
| Bachelor’s degree | 19 (9) |
| Master’s degree | 44 (21) |
| PhD degree | 141 (67.1) |
| Not known | 6 (2.9) |
| **Academic position** | |
| Teaching assistant | 7 (3.3) |
| Lecturer | 18 (8.6) |
| Assistant professor | 114 (54.3) |
| Associate professor | 39 (18.6) |
| Professor | 32 (15.2) |
| **Teaching experience in years** | |
| <2 | 33 (15.7) |
| 3–5 | 61 (29.1) |
| 6–10 | 49 (23.3) |
| 11–15 | 22 (10.5) |
| 16–20 | 20 (9.5) |
| 21–35 | 21 (10) |
| Not known | 4 (1.9) |

KSAU-HS = King Saud bin Abdulaziz University for Health Sciences; UQU = Umm Al Qura University; BC = Batterjee College; IBSC = Ibn Sina College; RU = Rabigh University; TU = Taif University.
Table 2: Faculty-perceived effectiveness of a faculty development programme in Saudi Arabia

| Rank | Item                                                                 | Mean ± SD       | Verbal interpretation |
|------|----------------------------------------------------------------------|-----------------|-----------------------|
| 1    | Improving personal qualities (e.g. being consistent, trustworthy, inspiring, authentic, etc.) | 4.22 ± 0.88     | More effective        |
| 2    | Providing greater educational involvement                            | 4.21 ± 0.80     | More effective        |
| 3    | Enhancing teaching strategies                                        | 4.19 ± 0.92     | Moderately effective  |
| 4    | Improving teaching skills                                            | 4.18 ± 0.85     | Moderately effective  |
| 5    | Improving teaching methodologies                                     | 4.17 ± 0.92     | Moderately effective  |
| 6    | Improving self-awareness (e.g. strength, weakness and limitations)    | 4.16 ± 0.86     | Moderately effective  |
| 7    | Positively changing teaching behaviour                               | 4.16 ± 0.84     | Moderately effective  |
| 8    | Understanding the process of developing curricula                    | 4.16 ± 0.91     | Moderately effective  |
| 9    | Using students’ needs assessment efficiently                          | 4.15 ± 0.98     | Moderately effective  |
| 10   | Increasing knowledge of educational principles                       | 4.14 ± 0.84     | Moderately effective  |
| 11   | Positively changing attitude towards teaching                        | 4.13 ± 0.89     | Moderately effective  |
| 12   | Improving career productivity                                        | 4.12 ± 0.88     | Moderately effective  |
| 13   | Improving interpersonal relationships among faculty members           | 4.11 ± 0.87     | Moderately effective  |
| 14   | Improving teacher-student interactions                               | 4.10 ± 0.93     | Moderately effective  |
| 15   | Bringing positive changes in attitude towards the institution         | 4.10 ± 0.83     | Moderately effective  |
| 16   | Improving personality (e.g. emotional control, displaying appropriate values and morals towards other) | 4.10 ± 0.93     | Moderately effective  |
| 17   | Improving test development abilities                                 | 4.09 ± 0.92     | Moderately effective  |
| 18   | Planning learning activities linked to set objectives                | 4.06 ± 0.96     | Moderately effective  |
| 19   | Improving career satisfaction                                        | 4.06 ± 0.93     | Moderately effective  |
| 20   | Increasing awareness about the mission and vision of the institution | 3.99 ± 0.87     | Moderately effective  |
| 21   | Giving sense of personal fulfilment                                  | 3.95 ± 0.87     | Moderately effective  |
| 22   | Enhancing scholarly activity productivity                            | 3.95 ± 0.91     | Moderately effective  |
| 23   | Working with others harmoniously                                     | 3.95 ± 0.93     | Moderately effective  |
| 24   | Increasing understanding of the research process                     | 3.94 ± 0.98     | Moderately effective  |
| 25   | Learning educational scholarship skills                               | 3.94 ± 0.93     | Moderately effective  |
| 26   | Improving relationships among colleagues                             | 3.92 ± 0.94     | Moderately effective  |
| 27   | Establishing a faculty network                                       | 3.89 ± 1.01     | Moderately effective  |
| 28   | Gives sense of identity                                              | 3.88 ± 0.86     | Moderately effective  |
| 29   | Contributing to retention in academia                                | 3.86 ± 0.99     | Moderately effective  |
| 30   | Increasing understanding about research management                    | 3.83 ± 0.99     | Moderately effective  |
| 31   | Increasing awareness of research funding opportunities and research protocols | 3.82 ± 1.01     | Moderately effective  |

SD = standard deviation.

Enhancing teaching strategies (mean = 4.19 ± 0.92), improving teaching skills (mean = 4.18 ± 0.85) and methodologies (mean = 4.17 ± 0.92) as well as improving self-awareness (mean = 4.16 ± 0.86) and positively changing teaching behaviour (mean = 4.16 ± 0.84) were rated as moderately effective. Awareness of research funding opportunities and research protocols (mean = 3.82 ± 1.01), understanding research management (mean = 3.83 ± 0.99), retention in academia (mean = 3.86 ± 0.99), establishing networks (mean = 3.89 ± 1.01) and improving relationships (mean = 3.92 ± 0.94) with colleagues were among the items perceived as less effective in FDPs [Table 2].

A total of 49 needs were identified with 13 needs considered of utmost importance while the remaining were considered important [Table 3].

Discussion

FDPs in medical colleges are currently considered more important than before. Although full-time Saudi faculty members constitute a large body in academia, most are not equipped with formal training in the field of medical education. The current study reflected this finding as faculty members believed the most effective items in an FDP were improving personal qualities and providing greater educational involvement. Such
### Table 3: Level of importance of developing various skills in a faculty development programme in Saudi Arabia

| Rank | Skill                                                                 | Mean ± SD | Verbal interpretation |
|------|-----------------------------------------------------------------------|-----------|-----------------------|
| 1    | Presenting work at conferences                                        | 4.58 ± 3.72 | Very important        |
| 2    | Giving effective feedback                                             | 4.38 ± 0.81 | Very important        |
| 3    | Teaching communication skills                                          | 4.36 ± 0.73 | Very important        |
| 4    | Problem-based learning                                                 | 4.35 ± 0.82 | Very important        |
| 5    | Creating an OSCE                                                       | 4.28 ± 0.84 | Very important        |
| 6    | Teaching evidence-based medicine                                       | 4.28 ± 0.77 | Very important        |
| 7    | Using effective teaching strategies for student-centred learning       | 4.28 ± 0.73 | Very important        |
| 8    | Teaching small groups                                                  | 4.24 ± 0.80 | Very important        |
| 9    | Fostering team-building skills                                         | 4.23 ± 0.82 | Very important        |
| 10   | Accessing medical information online                                   | 4.22 ± 0.88 | Very important        |
| 11   | Teaching the 'problem' student/resident                                | 4.21 ± 0.81 | Very important        |
| 12   | Evaluating a course or programme                                       | 4.21 ± 0.79 | Very important        |
| 13   | Developing online teaching materials or courses                         | 4.21 ± 0.77 | Very important        |
| 14   | Evaluating learning                                                    | 4.20 ± 0.87 | Important             |
| 15   | Teaching clinical reasoning skills                                     | 4.20 ± 0.82 | Important             |
| 16   | Supporting wellness (e.g. stress reduction, time management, work/life balance, etc.) | 4.19 ± 0.91 | Important             |
| 17   | Designing a course or educational programme                            | 4.19 ± 0.84 | Important             |
| 18   | Engaging in scholarly activities                                       | 4.18 ± 0.79 | Important             |
| 19   | Teaching professionalism                                               | 4.17 ± 0.86 | Important             |
| 20   | Understanding scholarship of teaching                                   | 4.15 ± 0.81 | Important             |
| 21   | Teaching procedural skills (e.g. swallowing assessment, basic laparoscopy, etc.) | 4.10 ± 0.98 | Important             |
| 22   | Developing PowerPoint presentations for teaching                        | 4.08 ± 1.01 | Important             |
| 23   | Teaching others how to teach                                           | 4.08 ± 0.88 | Important             |
| 24   | Creating portfolios for learning                                       | 4.06 ± 0.79 | Important             |
| 25   | Critiquing research articles                                           | 4.05 ± 0.91 | Important             |
| 26   | Writing an ethics proposal                                             | 4.05 ± 0.86 | Important             |
| 27   | Advocating for good health                                             | 4.05 ± 0.83 | Important             |
| 28   | Writing articles and abstracts for journals                             | 4.04 ± 0.85 | Important             |
| 29   | Managing conflict and negotiation                                      | 4.04 ± 0.80 | Important             |
| 30   | Engaging in interprofessional education                                | 4.04 ± 0.80 | Important             |
| 31   | Teaching in ambulatory or community-based settings                      | 4.00 ± 0.86 | Important             |
| 32   | Teaching international medical graduates                                | 3.99 ± 0.94 | Important             |
| 33   | Writing grants                                                         | 3.98 ± 0.87 | Important             |
| 34   | Participating in career planning and promotions                        | 3.98 ± 0.85 | Important             |
| 35   | Developing a course web page                                           | 3.96 ± 0.92 | Important             |
| 36   | Fostering colleagues’ career development (e.g. mentorship)            | 3.95 ± 0.87 | Important             |
| 37   | Preparing a teaching dossier or creative professional activity dossier | 3.95 ± 0.84 | Important             |
| 38   | Leading health professional organisations                               | 3.89 ± 0.92 | Important             |
| 39   | Mentoring in a cross-cultural context                                   | 3.88 ± 0.82 | Important             |
| 40   | Teaching in cross-cultural settings                                     | 3.87 ± 0.75 | Important             |
| 41   | Developing video conferencing and webcasting skills                    | 3.85 ± 0.92 | Important             |
| 42   | Learning about audience response systems                               | 3.83 ± 0.91 | Important             |
| 43   | Teaching 101 (for novice teachers)                                     | 3.82 ± 0.96 | Important             |
| 44   | Chairing committees                                                    | 3.81 ± 0.98 | Important             |
| 45   | Planning for retirement                                                | 3.80 ± 1.05 | Important             |
| 46   | Developing one-to-one teaching skills                                   | 3.74 ± 1.02 | Important             |
| 47   | Planning sabbatical skills                                             | 3.67 ± 1.07 | Important             |
| 48   | Teaching large groups                                                  | 3.66 ± 1.03 | Important             |
| 49   | Giving media interviews                                                | 3.59 ± 1.07 | Important             |

SD = standard deviation; OSCE = objective-structured clinical exam.
findings were also confirmed by several studies in North America. For example, McLeod et al. found that faculty members’ perceived needs reflected their principal commitments and clinicians desired workshops in clinical teaching.

In this study, enhancing and improving teaching strategies, skills and methodologies were among the most important features in faculty-perceived effectiveness. This result is similar to findings by Haden et al., wherein the respondents showed interest in learning more about matters related to teaching. Other important aspects of faculty-perceived effectiveness were improvements in personal, student or curriculum-related aspects of their jobs. Faculty development plays an important role in bringing about organisational changes and promoting innovation and excellence in teaching. It also contributes by changing the institutional culture and establishing policies that support and reward excellence in academia. Unfortunately, this finding was not reflected in this study as there was only one institution-related perceived effectiveness aspect among the top ten elements. Other important institution-related aspects, including increasing awareness about an institution’s mission and vision, improving test development abilities and linking instructional activities to set objectives, were less important than other personal-related aspects of perceived effectiveness.

Among the least important aspects of faculty-perceived effectiveness in FDPs were research awareness, understanding and funding, retention in academia, establishing faculty networks and improving colleague relationships. Steinert et al.’s study found that FDPs helped with faculty development by improving competencies pertaining to teaching, administration and research. Most of the faculty members in this study focused on personal aspects of perceived effectiveness, whereas institutional, research-related and other aspects of perceived effectiveness were considered to be less important. This finding is similar to previously published research, which reported a need to improve faculty members’ knowledge in related areas in order to function properly as teachers, however, other findings determined that faculty needed more training in research skills.

An effective FDP should be established based on the five major elements published by Wilkerson and Irby and Steinert et al. These elements include professional, instructional, leadership, organisational development and programme evaluation. These elements were also reflected in the results of the current study, with professional and instructional development being the most important.

The needs assessment is a process that includes the collection and analysis of information regarding what a target group needs to learn. In a faculty development needs assessment at the Faculty of Medicine at McGill University, Canada, McLeod et al. concluded that the needs assessment process is an important way to direct faculty development activities to the particular responsibilities of the faculty members. Similar national surveys assessing faculty development have been published in the USA and Europe.

As the number of medical schools in Saudi Arabia is growing rapidly and the faculty of medical schools include both locals and expatriates, a needs assessment should be the first step to establishing an FDP. While the results of this study have local importance, a survey distributed to faculty members of all Saudi medical schools might provide more specific information about their needs and help establish a basis for FDP activities on a national level.

In this study, the most important skills to be covered in FDPs were those related to improving transition points in individual faculty members’ careers. An effective FDP should also include skills that medical educators should master, including presenting at conferences, giving effective feedback and teaching communication skills and evidence-based medicine. Additionally, faculty members identified the importance of FDPs addressing important tools for learning and assessment such as objective-structured clinical examinations, small group teaching and problem-based learning as well as understanding wellness, professionalism and interprofessional education. Among the least important skills to emphasise in FDPs were giving media interviews, planning sabbaticals and chairing committees.

A major limitation in the present study was the poor response rate, which might have occurred due to the difficulty in convincing busy faculty members to spend time completing the survey. The methodology of this study did not allow the researchers to collect in-depth responses that could have been achieved through a qualitative, interview-based study. Such a study might include a comparison of responses from different faculty ranks or teaching experiences. Qualitative research concerning FDPs in Saudi Arabia would constitute an extensive research project but would complement the current study’s quantitative data. Such a study could be done by faculty members and masters’ students interested in medical education.

Conclusion

Most faculty members at colleges of medicine in Saudi Arabia need further formal training in essential areas to improve their academic performance. This study assessed and identified important needs and skills that should be incorporated into an FDP to address these
areas. In addition, this study provided information to address the gaps between current and desired conditions. Local and national medical schools are urged to assess faculty needs and create FDPs according to those needs. Several methods and strategies may be used to achieve these needs, including collaborative joint reviews between the six universities and medical education conferences that tackle FDPs. The most important items to be achieved for faculty-perceived effectiveness in FDPs in medical education were personal aspects of perceived effectiveness. Colleges and medical institutions should establish a comprehensive FDP focusing on aspects of personal effectiveness which would prepare faculty members to fulfil their academic roles and promote career development. FDPs are created to improve a faculty member’s commitment to their work and their ability to achieve goals and objectives for themselves and their institution. A unified faculty development diploma should be established in Saudi universities which would address faculty members’ professional needs.

CONFlict of INTEREST
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