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Original Research Article

Needs assessment for faculty development at an Egyptian medical school: a triangulation approach

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ABSTRACT

Background: Faculty development (FD) is a core component of medical education, and needs assessment is central for planning effective FD programs. In the present study, we assessed the perceived development needs of medical faculty and the factors affecting these needs at an Egyptian medical school.
Methods: This sequential mixed-methods research was conducted in 2019 at Faculty of Medicine, Sohag University (Egypt) using a triangulation approach for data collection: (1) web-based survey composed of 74 items about demographics and educational experiences, satisfaction with current FD programs, perceived development needs, delivery and scheduling preferences; (2) semi-structured interviews for in-depth understanding; and (3) secondary data.
Results: A total of 434 out of 793 target faculty (54.7%) completed the survey. Participants in general perceived moderate to extreme need to all FD areas with the highest priorities given for discipline-specific and research domains. Awareness of teaching needs has increased among faculty in recent years. Perceived FD needs varied across career stage, and most participants preferred short interactive workshops; online methods are also desired. Compulsory participation in FD programs was a subject of high controversy. More than one-third of participants were interested in joining the newly established medical education department.
Conclusions: Perceived FD needs are affected by accreditation standards, academic reward systems, and socioeconomic factors. The present study provides a transferrable model for conducting FD needs assessment, and the findings are important for planning effective and economically sound FD programs within the complex structure of today's medical schools.

Keywords: Egypt, Faculty development, Needs assessment, Survey, Triangulation

INTRODUCTION

Faculty members are the mainstay of any health profession education system, and their roles and responsibilities are dramatically evolving in response to the ongoing major changes in the healthcare system, medical education, scientific research, and society. Medical faculty are now expected to be excellent teachers, innovative researchers,

competent clinicians, successful managers, and inspirational academic leaders.[1,2] However, faculty have been minimally prepared for many of these roles, particularly teaching; it has been wrongly assumed that faculty, being expert in content (what to teach), are effectively capable of teaching (how to teach).[3] Therefore, increasing attention has been placed worldwide on the design and implementation of time-efficient programs to continually enhance the capabilities of medical faculty in teaching as well as other development areas. This has been called faculty development (FD).[2,4]

FD has been systematically introduced to Egyptian public universities since only the beginning of the 21st Century. Between 2002 and 2008, the Egyptian government and World bank implemented the higher education enhancement project (HEEP) initiative for improving the quality and efficiency of Egyptian higher education. One of the main six HEEP subprojects was the faculty and leadership development project (FLDP), which worked for enhancing Egyptian faculty competencies in areas of teaching, scientific research, management and leadership, and group communication and interaction. FLDP resulted in the establishment of the National center for faculty and leadership development as well as a faculty and leadership development Center (FLDC) at each public university.[5,6] The impact assessment of FLDP was moderately satisfactory, and its training activities have remained in operation funded by the Egyptian government and universities.[7,5]

Successful FD requires a systematic design, implementation, and evaluation approach that aligns the goals of individual faculty and institution. Awareness of the specific development needs of target faculty is central to planning current and relevant FD programs with effective use of limited institutional resources.[8] According to the compass model for FD planning and self-determination theory, planning for FD should consider the interplay between intrinsic (autonomous) and extrinsic (controlled) motivational factors. Intrinsic inputs reflect the competencies of individual faculty and their interest areas, while extrinsic inputs represent institutional strategies and available resources. Thus, needs assessment for FD should align individual and institutional goals; surveying target faculty for perceived development needs is an invaluable component in a sound needs assessment process but is not the whole process itself.[9,10]

Benefits of the needs assessment are not limited to its results (specifying target needs and factors affecting them, align individual and institutional goals, and providing baseline information for program evaluation) but extend to the process itself through creating a sense of ownership leading to higher faculty engagement, motivation, and early buy-in of FD programs with increased likelihood of positive behavioral change.[2,11] Learners, in general, tend to adopt new behaviors if interventions are planned according to a needs assessment.[12] The most commonly used data collection methods for needs assessment are survey, interview/focus group, observation, and secondary data; each of which has its own strengths and weaknesses. Therefore, it is a good practice to use more than one method.[2,13]

To the best of our knowledge, there has been no published needs assessment for medical FD in Egypt. The present study aims to explore the perceived development needs of medical faculty at Sohag University in order to inform contextualized/situational and efficient FD planning. The importance of this study extends beyond its local context to include potentially replicable approach and future research insights.

METHODS

The present study followed a sequential mixed-methods research design with data-triangulation, in which the quantitative component preceded the qualitative component. The study was conducted from June to December 2019 at Faculty of Medicine, Sohag University (FOM-SU). FOM-SU is located in Southern Egypt and has been established since 1991. It has a total of 32 academic departments and corresponding educational programs with 794 full-time faculty members. As of 2018/2019 academic-year statistics, there were 2193 enrolled undergraduate students.[14] Eligible participants for this study were full-time faculty at FOM-SU, including professors, associate professors, assistant-lecturers and demonstrators. We excluded faculty who were not on-job at FOM-SU either during study timeframe or for more than three months in the last year.

Authors employed a triangulation approach, using multiple data collection methods: reviewing documents, web-based survey, and semi-structured interviews.

Reviewing documents

After obtaining approval from FOM-SU administration, we reviewed relevant records and documents including the most-recently prepared self-study (ver-2019).

Web-based survey

Authors developed a survey (needs assessment for faculty development survey; NAFDS) based on literature review and following the guidelines for conducting survey and interview research. Published surveys have discrepancies in defining FD construct in terms of focusing on certain FD needs domains (e.g., teaching, research, and/or leadership and career development) but ignoring others (e.g., discipline-specific development); moreover, delivery, scheduling, advertising, and motivation preferences are not consistently included.[2,8,15-24] Since proper and consistent construct interpretation is the basis for survey development and validation, authors interviewed 27 faculty members to explore understanding and conceptualization of FD

construct; this emphasized all FD domains described in the literature including discipline-specific development.[23,24] Accordingly, FD was defined in this study as "the range of planned activities that institutions utilize to continuously promote faculty in their essential roles: teaching/learning, research/scholarship, leadership/administration, career development, and discipline-specific activities". Survey development included validation with seven external experts, cognitive interviews with 14 prospective participants, and pilot testing.

The final NAFDS used in this study was formed of seven sections with a total of 74 items, including six open-ended questions to give participants a free expression space. The first section "demographic and educational experience" contained seven items. The second section "satisfaction with FD programs" contained seven items: number of previously attended FD programs; extent of satisfaction (in terms of topics, trainers, instruction, venue, scheduling) using a five-point Likert scale (1, very dissatisfied……5, very satisfied); and an open-ended question. The third section "perceived FD needs" contained 36 items covering 6 areas (educational strategies; managing learning/ teaching session; assessment/ support/ feedback; research/scholarship, leadership/ management/ career development; and discipline-specific development). The extent of need for individual items was rated using a seven-point Likert scale (1, not at all needed……7, extremely needed). The fourth section "delivery and scheduling" contained seven items; each of the fifth "advertising and motivation" and sixth "interest in participating as faculty/trainer" sections had three items; and the last section contained an open question for further comments.

Authors designed this survey using Microsoft forms (https.forms.office.com). Following ethics and administrative approvals, we obtained the e-mail addresses of faculty members from FOM-SU records. Authors sent an e-mail to the target faculty explaining the purpose and significance of the study as well as the internet address link of the survey. The invitation e-mail confirmed voluntary and anonymous participation. Informed consent was assumed based upon the return of the completed survey as per the included consent statement. Besides e-mails, we tried to enhance participation through announcing on faculty official website and social media (Facebook, Twitter, and Instagram) as well as WhatsApp text messages. In addition, authors sent weekly reminders during the six-week survey data collection duration.

Semi-structured interviews

Findings from the survey and documents review informed semi-structured interviews. Interviews were based on the same survey areas but with explanatory questions for in-depth understanding of participants' opinions and perceptions. Authors interviewed a convenient sample of 14 faculty members, considering gender (nine males and five females), department (eight from clinical and six from academic), and academic rank (three professors, three associate professors, four lecturers, and four demonstrator or assistant lecturers). Interviews (approximately 60 minutes for each) were either in-person or by telephone and were digitally recorded and exactly transcribed. Two researchers carefully read and coded the transcripts inductively and developed preliminary coding for organizing themes. They paid attention to details with extracting representative excerpts. The whole research team frequently met to discuss and refine the developing themes and enhance rigor.

Ethical consideration

The present study was approved by the Research Ethics Committee of FOM-SU and was carried out in accordance with the principles contained within the 1964 Declaration of Helsinki and as revised in 2013. Informed consent was obtained from all participants for inclusion in the study.

Statistical analysis

Data were analyzed using IBM SPSS® software version 20. We used descriptive statistics (frequency, percentage, mean, and standard deviation), correlation test (relationship between continuous variables), Student's-t test (two groups of continuous variables), ANOVA (more than two groups of continuous variables), MANOVA (effect of categorical variables on groups of continuous variables), and Chi-square test (difference between categorical variables). Given the many comparisons, we employed a stringent alpha level ($p<0.1$) in order to control for potential spurious results. Cronbach's alpha coefficient was used to assess the internal reliability of the satisfaction and perceived FD needs scales.

RESULTS

Response rate and demographics of participants

A total of 434 out of 793 target faculty completed the survey with a response rate of 54.7%. The response rate was higher among basic sciences (68%) compared with clinical (50%) departments. Regarding academic rank, lecturers had the highest response rate (84.5%) followed by demonstrators/assistant lecturers (50.3%), associate professors (38.7%), and professors (33%). The demographics and educational experiences of participants are provided in Table 1. The mean age was 37.4±6.7 years, and the male to female ratio was 1.4:1. Two-thirds of participants were from clinical departments, and most (80.6%) were junior faculty (demonstrator/assistant lecturers and lecturers). More than half participants had experiences in large and small group as well as clinical teaching; however, only 5.9% experienced distant/online teaching, and only three faculty had a formal degree in medical education.

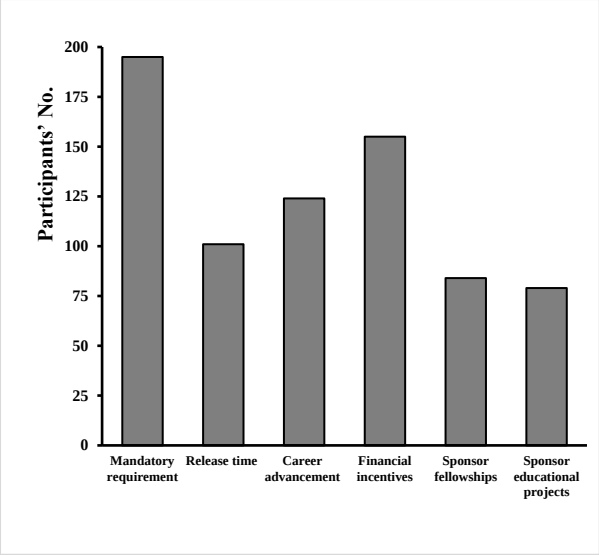

Figure 1: Preferences to enhance participation in faculty development programs.

Multiple selection permitted.

Satisfaction with current FD programs

Participants reported attending a few FD programs in the last five years (median 4, range 0-25) with overall neutral satisfaction (Table 2). Faculty with lower rank (demonstrator/assistant lecturers and lectures) and from clinical departments were less satisfied than those with a higher rank (associate professors and professors) and from basic sciences departments.

Perceived FD needs

As shown in Table 3, all areas and items of FD were ranked as moderately to extremely needed. The top-ranked area/item was the discipline-specific need. This is followed by the research/scholarship area, whose all five sub-items were among the top 10-ranked items of the whole scale. Other top 10-ranked needs items were student support and feedback, time management, information technology and computer skills, and presentation skills.

The age of participants, duration as academician, and number of attended FD programs were found to have statistically significant but weak positive correlation with only assessment/support/feedback area (Table 4). It is also evident that FD needs areas, except discipline-specific, have a statistically significant moderate positive correlation with one another.

Table 1: Demographic characteristics and educational experiences of survey's participants.

Characteristics	No. (%)*
Age (in years)	
<35	152 (35)
35-50	252 (58.1)
>50	30 (6.9)
Gender	
Male	255 (58.8)
Female	179 (41.2)
Department#	
Basic sciences	141 (32.5)
Clinical	293 (67.5)
Academic rank	
Demonstrator/assistant lecturer	181 (41.7)
Lecturer	169 (38.9)
Associate professor	48 (11.1)
Professor	36 (8.3)
Duration as academician (year)	
<5	79 (18.2)
5-15	286 (65.9)
>15	69 (15.9)
Teaching activities¶	
Small group	268 (61.8)
Large group/lectures	249 (57.4)
Clinical/bedside	233 (53.7)
Laboratory	72 (16.6)
Distant/online	25 (5.8)
Others	8 (1.8)
None	7 (1.6)
Experience in medical education¶	
Attending workshops/conferences	337 (77.7)
Committee membership	82 (18.9)
Faculty for workshops	33 (7.6)
Oral/poster presentation	8 (1.8)
Educational projects	4 (0.9)
Formal degree	3 (0.7)
Publications	2 (0.5)

*Total number of participants is 434. #29 out of 32 departments were represented (no participants from parasitology, cardiothoracic surgery, and vascular surgery departments). ¶Multiple selection permitted.

Table 2: Participants' satisfaction with faculty development programs.

Categories	Very dissatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied
	N (%)	N (%)	N (%)	N (%)	N (%)
Topics	33 (7.6)	76 (17.5)	183 (42.2)	128 (29.5)	14 (3.2)
Trainers	10 (2.3)	26 (6.0)	247 (56.9)	137 (31.6)	14 (3.2)
Instructions	11 (2.5)	96 (22.1)	201 (46.3)	112 (25.8)	14 (3.2)
Venue	5 (1.2)	67 (15.4)	218 (50.2)	128 (29.5)	16 (3.7)
Schedule	11 (2.5)	83 (19.1)	207 (47.7)	121 (27.9)	12 (2.8)

Cronbach's alpha of the satisfaction scale = 0.846

Table 3: Participants' ranking of faculty development needs.

Faculty development need area[¶]	Mean	SD
Educational strategies		
Case based learning[#]	5.93	1.05
Problem based learning[#]	5.86	1.06
Team based learning[#]	5.82	0.99
Curriculum integration	5.52	1.26
Community based learning	5.27	1.25
Project based learning	5.15	1.15
Learning theories	5.06	1.41
Flipped classroom	4.78	1.22
Overall subscale (Cronbach's alpha=0.846)	5.42	0.82
Managing teaching/learning session		
Small group[#]	5.88	1.03
Clinical/bedside teaching[#]	5.79	1.14
Online learning	5.27	1.21
Large group/lecture	5.01	1.49
Overall subscale (Cronbach's alpha=0.728)	5.49	0.86
Assessment, student support, and feedback		
Student support and feedback*	6.30	0.82
Designing/writing OSCE/OSPE stations	5.63	1.01
Assessing professionalism	5.56	1.10
Writing MCQ	5.51	1.34
Writing SAQ	5.40	1.21
Developing learning portfolio	5.33	1.20
Overall subscale (Cronbach's alpha=0.737)	5.62	0.74
Research and scholarship		
Research ethics*	6.32	0.72
Research methodology*	6.16	0.93
Biostatistics*	6.15	0.93
Writing research proposal*	6.11	0.96
International publications*	6.05	1.31
Overall subscale (Cronbach's alpha=0.840)	6.12	0.77
Leadership, management, and career development		
Time management*	6.18	0.87
Information technology and computer skills*	6.12	0.97
Presentation skills*	6.07	0.79
Laws/regulations related to academia/promotion[#]	5.94	0.87
Quality and accreditation in higher education[#]	5.92	0.99
Grant writing[#]	5.91	1.02
Stress management[#]	5.87	1.04
Project management[#]	5.76	1.13
Communication and organizational skills	5.73	1.04
Conflict management and negotiation	5.73	0.99
Leadership skills	5.68	1.04
Overall subscale (Cronbach's alpha=0.855)	5.90	0.63
Discipline-specific*	6.76	3.31
Overall scale (Cronbach's alpha=0.909)		

[¶] Faculty development needs were ranked on a 7-points Likert scale (1, not at all important….7, extremely important), *Top 10-ranked items, [#]11-20 ranked items. MCQ, multiple choice questions; OSCE, objective structured clinical examination; OSPE, objective structured practical examination; SAQ, short answer question.

On the other hand, multivariate analysis showed that gender, department, and academic rank have a statistically significant effect on perceived FD needs (Table 5). Males perceived higher needs particularly for managing teaching/ learning, assessment/ support/ feedback, and research/scholarship areas. Participants from basic sciences departments perceived higher needs for educational strategies, managing teaching/learning, assessment/ support/ feedback, and leadership/ management/ career development areas. Associate professors perceived the highest needs for managing teaching/ learning, assessment/ support/ feedback, research/scholarship, and leadership/management/career development areas.

Delivery, scheduling, and advertising preferences

As shown in Table 6, the most desired learning format was interactive workshops (60.8), and more than half participants preferred online methods either alone or blended with other face-to-face activities. Participants generally preferred online methods (E-mails, Faculty website, social media) for receiving announcements about FD programs, and one-third desired to receive phone texts. To enhance participation in FD programs, nearly half respondents recommended compulsory FD programs; others preferred alternative incentives (Figure 1).

Interest in taking part as a faculty/trainer

Nearly 10% of respondents desired to join the newly established medical education department on a full-time basis, and one-third preferred part-time participation (Figure 2). Gender, department, and academic rank have significant effects on faculty interests. Males and clinicians were more interested in taking part as a faculty/trainer. Professors were more interested to join department as full time, whereas demonstrators/assistant lecturers and lecturers were more interested in part-time job; Both professors and associate professors were more interested in working as trainers (Table 7).

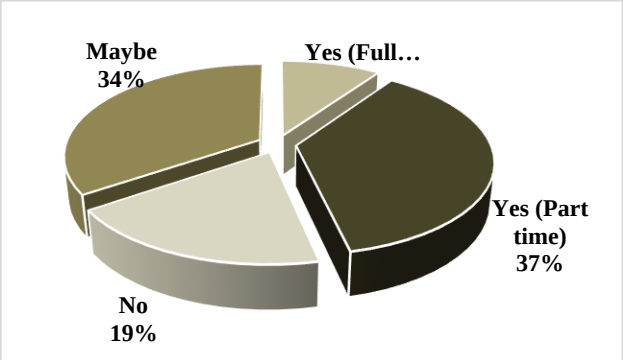

Figure 2: Participants' interests in joining medical education department.

Table 4: Correlation coefficients between FD needs, age, duration as academician, and number of attended FD programs.

	1	2	3	4	5	6	7	8	9	10
1. Age	1	0.71*	0.23*	0.06	-0.03	0.21*	0.04	0.01	-0.04	0.02
2. Duration as academician		1	0.18*	0.12	-0.04	0.28*	0.05	0.11	-0.02	0.06
3. Attended FD programs			1	0.06	0.00	0.20*	0.09	0.07	-0.01	0.06
4. Educational strategies				1	0.70*	0.60*	0.53*	0.61*	0.02	0.59*
5. Managing teaching/learning					1	0.62*	0.58*	0.52*	-0.02	0.57*
6. Assessment/support/feedback						1	0.61*	0.53*	-0.01	0.55*
7. Research/scholarship							1	0.57*	0.00	0.54*
8. Leadership/management/career development								1	0.03	0.54*
9. Discipline-specific									1	0.74*
10. Total needs										1

*P<0.01 (two-tailed).

Table 5: Differences in faculty development needs subscales by gender, department, and academic rank [multivariate analysis (tests of between-subject effects)].

	Subscales	SS	df	MS	F	P*	η^2
Gender	Educational strategies	1.41	1	1.41	2.69	0.10	0.01
	Managing teaching/learning	10.91	1	10.91	20.08	0.00	0.05
	Assessment/support/feedback	4.95	1	4.95	13.77	0.00	0.03
	Research/scholarship	5.25	1	5.25	11.61	0.00	0.03
	Leadership/management/career development	0.91	1	0.91	2.92	0.09	0.01
	Discipline-specific	0.47	1	0.47	0.04	0.84	0.00
Department	Educational strategies	20.55	1	20.55	39.16	0.00	0.09
	Managing teaching/learning	12.14	1	12.14	22.35	0.00	0.05
	Assessment/support/feedback	6.38	1	6.38	17.75	0.00	0.04
	Research/scholarship	0.81	1	0.81	1.79	0.18	0.00
	Leadership/management/career development	5.80	1	5.80	18.62	0.00	0.04
	Discipline-specific	2.21	1	2.21	0.19	0.66	0.00
Academic rank	Educational strategies	4.16	3	1.39	2.65	0.05	0.02
	Managing teaching/learning	16.04	3	5.35	9.85	0.00	0.07
	Assessment/support/feedback	18.62	3	6.21	17.26	0.00	0.11
	Research/scholarship	10.23	3	3.41	7.55	0.00	0.05
	Leadership/management/career development	12.50	3	4.16	13.38	0.00	0.01
	Discipline-specific	2.01	3	0.67	0.06	0.98	0.00

* Two-tailed test. SS, type III sum of squares; MS, mean square

Table 6: Participants' preferences to delivery, scheduling, and advertising of faculty development programs.

Preferences	Participants' no. (%)
Format*	
Interactive workshop	264 (60.8)
Online self-paced	133 (30.6)
Blended format	106 (24.4)
Traditional lecture	103 (23.7)
Individualized consultation	57 (13.1)
Faculty learning community	42 (9.7)
Length*	
Single half-day (2-4 hours)	213 (49.1)
Series (2-4 hours weekly)	138 (31.8)
2-3 successive days	54 (12.4)
Single full- day (6-8 hours)	34 (7.8)
Long (>1 week)	27 (6.2)

Continued.

Preferences	Participants' no. (%)
Day	
Workday	308 (71.0)
No preference	105 (24.2)
Weekends	61 (14.1)
Time*	
Morning	339 (78.1)
No preference	50 (11.5)
Afternoon	30 (6.9)
Evening	30 (6.9)
Trainers	
Internal	229 (52.8)
External	181 (41.7)
No preference	112 (25.8)
Venue*	
Prof. Mahmoud Riad hall	204 (47.0)
Medical Education Center	181 (41.7)
No preference	87 (20.0)
Others (outside campus)	21 (4.8)
Others (within campus)	19 (4.4)
Advertising*	
E-mail	290 (66.8)
Phone text	158 (36.4)
Social media	155 (35.7)
Faculty website	112 (25.8)
Formal paper announcement	77 (17.7)
No preferences	22 (2.7)
Faculty bulletin	1 (0.2)

* Multiple selection permitted

Interviewing faculty was helpful for clarification and deeper understanding of the survey results. Representative comments of interviewed faculty are provided in Table 8.

DISCUSSION

In this work, we studied the perceived FD needs at an Egyptian medical school using a triangulation approach for data collection. The findings of the present study are fundamental for planning effective medical FD programs at FOM-SU and are insightful for other national and international settings; the used methodology can be replicable in other settings.

The purpose and scope of needs assessment must be guided by a clear conceptual framework, the purpose and scope of prospective FD programs, and institutional strategies and resources.[2,16] Exploratory interviews during developing the survey in this study revealed that medical faculty at Sohag University conceptualize discipline-specific development as an essential part of FD construct. This area has commonly been overlooked in the literature on FD and its needs assessment with the notion that faculty are usually hired based on their discipline (content) expertise; hence, FD should focus on other areas. Indeed, most published FD studies addressed teaching, research, and leadership/administration aspects.[8,15-22] However, the essence of FD is continually supporting all roles of faculty members dedicated to meeting the goals, mission, and vision of the institution.[3]

Teaching, research, and social service (including healthcare), which form the core mission of any medical school, require discipline (content) expertise. Faculty may be expert "now" in their discipline; however, with the rapid change, medical schools must support continuous professional development so that faculty will not lag behind in the future.[25]

Table 7: Differences in participants' interests to join medical education department and/or work as a trainer by gender, department, and academic rank.

	χ^2	df	P value*
Join department			
Gender	21.06	3	0.000
Department	47.98	3	0.000
Academic rank	132.54	9	0.000
Work as trainer			
Gender	38.16	2	0.000
Department	12.33	2	0.002
Academic rank	51.54	6	0.000

* Two-tailed test

The survey response rate (54.7) in this study is considered satisfactory. The response rate in similar studies ranged

from 9.4% to 81.9%.[8,15-20] Given the number of the target population (793), a response rate of 54.7% should be adequate under stringent conditions.[26] However, non-respondents (whatever the reasons) remain a source of bias; this is an inherent concern in any study with voluntary participation.[13,24] Indeed, the web-based survey may miss some potential participants who are not familiar with technology, which may contribute to the lower response rate among older faculty (professors and associate professors) in the present study.[26]

Participants in the present study perceived moderate to extreme need for all FD areas. This is consistent with the findings of previous studies.[15,18,20,21] The highest FD priorities in this study were given for discipline-specific and research. In contrast, most previous studies showed that teaching and assessment domains are the top perceived FD needs.[8,15-22] This difference could be attributed to the wider scope of FD in our study in contrast to previous studies, which mainly focused on teaching and less commonly scholarship and administration/leadership domains. For example, Adkoli.et al used only competencies of clinical educators which are centered on teaching.[20]

Table 8: Representative comments of interviewed medical faculty at Sohag University.

Domains	Comments
Response rate and demographics	"Faculty from basic sciences departments have more time than those from clinical departments who are always busy dealing with patients at the hospital and their private clinics" "lecturers, as you know, are more active and interested in sharing in faculty activities and programs" "Professors are reluctant to use electronic methods compared with younger faculty". "We (faculty) are used to lectures and clinical rounds but not online teaching. This may change soon" "Many faculty members attended one session or more on reforming undergraduate medical education conducted at our faculty in the last two years. This was not the case before that" "I did not know before that there are departments and formal degrees in medical education!".
Satisfaction with current FD programs	"We (clinicians) want relevant and practical knowledge in a short time. we are always busy" "Older faculty are used to lectures, but young faculty do not; they are looking for interaction and discussion".
Perceived FD needs	"This makes sense. We (medical faculty) want to be better in our medical filed, and, of course, we want to do research and publish papers required for promotion" "Actually, we (medical faculty) need development in all these areas, but continuous medical education and research remain on the top". "In our geographical area, females have heavy duties towards children, home, and family. this may affect their need for further development" "I think that faculty from basic sciences departments are more interested in teaching and management. This may be related to the nature of their discipline and having more free time. I mean they have no clinical work" "They (associate professors) know what they need because they experienced challenges as lecturers. Lecturers will take time to figure out that, and most professors have less need to know more!".
Delivery and scheduling preferences	"We (faculty) like interaction and discussion. lectures are boring. It may be useful for students but not for us" "Short and online activities will be useful for faculty who are interested but have no free time" "Workdays morning for sure. We spend weekends with our families, and most of us work at clinics afternoon".
Advertising and motivation	"E-mail is a convenient method to reach almost everyone. Most faculty have accounts on Facebook and posting announcement there will also help" "It (FD) must be mandatory. Otherwise, most faculty will not attend. We (faculty) are always busy doing many other things!" "Actually, I can't suggest an ideal approach, but I am against the compulsory system; you can force them (faculty) to attend, but can you force them to learn?!" "In these (mandatory FD programs), I feel imprisoned and not be respected".
Interest in taking part as a faculty/trainer	"Many faculties are passionate for developing our institution, but they desire their works to be counted and appreciated, and not be just additives to their original duties. We hope the new department will offer this frame" "I think that only professors are willing to join the department as full-time; others may share as part-time. Assistant lecturers have to complete their PhD, and lecturers and associate professors have to do and publish research in their original discipline for promotion".

The high perceived needs for FD in discipline-specific and research fields could be explained in light of Maslow's theory of motivation, according to which humans take care of their basic needs (e.g., safety) first before seeking higher levels (e.g., self-actualization).[27] The high perceived need to discipline-specific development may be attributed to

socioeconomic factors. Most medical faculty at our locality have additional private clinical or laboratory work to improve their income. In addition, being expert and up-to-date in discipline is highly respected by faculty, physicians, and society. On the other hand, the importance of development in research is well evident and fueled by the academic promotion system, which is mainly based on publications, as well as social environment, in terms of high academic and public respect to researchers with high publication records.[28,29] Faculty have also become more aware of the importance of teaching development given the driving forces from national accreditation authority.[30] However, teaching has been minimally appreciated at the levels of faculty, institution, and academic promotion standards. The lack of rewarding may explain why teaching came next after discipline-specific and research development needs.[3,16,17,29]

Of note, faculty may not accurately perceive their need for certain important development areas. This is not due to ignorance, but simply because they do not have the required expertise, information, or time to precisely analyze their needs. Indeed, literature shows that most faculty may still consider themselves to be excellent teachers and may not realize their need for improving teaching skills; they regard teaching as a 'natural talent' that cannot be learned and only appreciate their own teaching needs when they participate in a relevant FD program. Therefore, FD planning should not only follow customer-approach but also requires considering institutional strategies and maybe external analyst.[2,29]

Compared with clinicians, faculty from basic sciences departments perceived higher development needs particularly for teaching and management areas, which may be attributed to the highly demanding work of clinicians.[29] Moreover, there were differences in perceived development needs across the career stage. Previous studies also reported differences in perceived FD needs in relation to several factors, such as gender, discipline, academic rank, and duration as an academician.[17,18,22] For example, full professors were reported to have less interest in FD activities than lower ranks.[17,22] Studies showed that junior faculty prioritize teaching needs, whereas faculty members of higher ranks are more interested in research and management/leadership.[16,17] According to adult learning principles, adults become ready to learn things they need to cope with real-life situations during moving from a developmental stage to another over time.[12] Therefore, it is important to consider planning specific programs targeting faculty at different career stages so that timing learning experience to match developmentally specific tasks and needs.[2,4]

Interactive workshop was the most preferred instructional method in this study. Likewise, most respondents in previous studies desired workshops and microteaching sessions.[15,19,20] Individualized consultation, which was desired by 13.1% in this study, was the most preferred method in McLeod et al, study.[19] Adult learning principles illustrate that adults have the self-concept of handling their own decisions, including learning, and they need to be treated by others as being capable of self-direction "learners' self-concept".[12] In addition, adults have rich experiences that they need to be respected by others. Therefore, preferences go to experiential techniques that explore, activate, and build on learner's experiences, such as discussions and problem-solving activities, compared with transmittal techniques, such as traditional lectures.[2,12] However, still a proportion of adults prefer traditional instruction (like nearly a quarter of our study participants); this happens particularly when little is known about the subject. A person with a high degree of personal autonomy may choose to learn in a highly teacher-directed instructional session because of convenience, speed, or learning style.[10]

Of note, more than half participants preferred web-based methods. Online and blended formats were also preferred by nearly half participants in McLeod et al, study.[19] These methods may offer a convenient alternative to certain faculty who have difficulty in attending face-to-face activities.[29] It is interesting that about 10% of participants desired learning community. Building learning community helps foster collaboration and effective relationship as well as notion to community of practice; this increases the chance of knowledge transfer and positive behavioral and cultural change.[31] It is recommended that FD programs should employ multiple instructional methods rather than the "one-size-fits-all" approach.[2,29]

Proper scheduling is important and can make the difference between the success and failure of an FD program. Preferences are generally related to professional, economic, social, and lifestyle factors of the target population. The preference of participants in this study tended towards short sessions during workdays. This is consistent with the findings of similar studies. In Shah et al study, 79% of respondents desired half-day training and 61.4% preferred weekdays rather than weekends.[15] Most participants in Schönwetter et al, and McLeod et al, studies preferred half-day workshops during workdays.[16,19] In a national survey of FD in US teaching hospitals, 80% of activities were half-day workshops.[32] Limited time is a major barrier for participation in face-to-face activities; blending with web-based methods may be a convenient strategy.[29] FD programs that extend over time give an opportunity for cumulative learning, practice, feedback, and social networking; this yields more positive behavioral outcomes than one-time events.[4,25]

The current study revealed a high controversy among faculty on the policy of "compulsory" FD; attending a certain number (usually six) of FD programs is mandated for every academic promotion at Egyptian universities. This debate was also described by other studies. For example, some participants in Adkoli et al, study recommended making an institutional policy for mandatory participation in FD programs, while others discouraged this idea and favored other alternatives. Adult

learning principles explain that adults need to be aware of why they need to learn something prior to undertaking to learn it; they will do their best when commit to learning something on their own.[12] In light of the self-determination theory, compulsory programs are a type of extrinsic motivation that is associated with a sense of pressure and anxiety; related learning is likely short-lived and poorly integrated into long-term behavior. The feeling of being forced to attend without perceived benefit but for mere formality precipitates frustration.[10]

However, faculty may not perceive their need for certain important development areas (discussed above). Therefore, institutional efforts should be directed towards helping faculty become aware of their development need (e.g., by challenging their self-perception), so that they will undertake learning of their own, rather than only focusing on obligatory regulations.[29,33] Previous studies described other important types of institutional support to motivate participation in FD programs, such as financial incentives, career advancement, allowing release time, and sponsoring medical education fellowships and educational projects.[15,20] A Pakistani study reported that developing a rewarding system for recognition of excellence in teaching, research, and professional development markedly enhances participation in FD activities.[34] Developing an organizational culture that supports and rewards continuous quality improvement in all domains of faculty responsibilities is critical to the success of FD.[2,3]

Recruitment and preparation of faculty developers is an important process. 47% of respondents showed their interest in joining the prospective medical education department. This is comparable to Adkoli et al, study, in which 37.6% of respondents were willing to join the medical education center.[20] Academic promotion regulations, which require discipline-related research and publication, limited the interest in joining the newly established medical education department on a full-time basis to professors. Although FD literature acknowledges the importance of program trainers and developers, little information has been reported about their educational background, years of experience, and specialty.[1,31] This is a subject for future research.

The present study has some limitations. First, survey is not an objective method and has inherent flaws of response and social desirability bias. Given the limitations of any individual data collection method, we employed a triangulation approach that is probably the best-known strategy to enhance credibility and quality. Second, some participant's categories showed an un-equal response rate, which may over- or under-represent some opinions. Last, this is a single-center study; the findings may not necessarily reflect other settings given the contextually situated nature of qualitative research. However, transferable lessons and meanings can be derived from our study, and the approach can be easily replicated in other settings. It would be interesting to compare the findings of this study with that of other Egyptian, Arab, and worldwide universities to generate useful insights for health profession FD at the national, regional, and international levels.

CONCLUSION

The present study demonstrates a potentially transferrable model for conducting FD needs assessment, informed by theory and context, using a triangulation approach. This study provides important information on the perceived FD needs at an Egyptian medical school, which are not only useful for planning FD programs at this particular institution but also insightful for other settings. Needs assessment is central for planning more effective and economically sound FD programs within the complex structure of today's health profession education institutions.

Note: The electronic survey (NAFDS) is available through contacting the corresponding author.

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REFERENCES

1. Baker L, Leslie K, Panisko D, Walsh A, Wong A, Stubbs B, et al. Exploring faculty developers' experiences to inform our understanding of competence in faculty development. Academic Med. 2018;93(2):265-73.
2. Steinert Y. Developing medical educators: A journey, not a destination. In: Swanwick T, Forrest K, O'Brien BC, eds. Understanding Medical Education: Evidence, Theory and Practice. 3 ed: Wiley-Blackwell; 2019:551-601.
3. McLean M, Cilliers F, Van Wyk JM. Faculty development: yesterday, today and tomorrow. Med Teach. 2008;30(6):555-84.
4. Steinert Y, Mann K, Anderson B, Barnett BM, Centeno A, Naismith L, et al. A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME Guide No. 40. Medical Teacher. 2016;38(8):769-86.

5. Khalifa M, Aboulmagd N. Transforming Higher Education in Egypt: A Deeper Look at the Faculty Leadership and Development Project. In: Megahed N, ed. Education Reform in Egypt: Local and Global Actors: American University in Cairo; 2016.
6. Said ME. The impact of reform projects in higher education: The case of Egypt. Towards an Arab higher education space. Inter Challenges Soci Responsibil. 2010:461-80.
7. World Bank. Egypt - Higher Education Enhancement Project (English). Washington, DC: World Bank; 2009.
8. Behar-Horenstein L, Garvan C, Catalanotto F, Hudson-Vassell C. The role of needs assessment for faculty development initiatives. The J Facult Develop. 2014;28(2):75-86.
9. Al-Eraky MM, McLean M. The compass model to plan faculty development programs. Med Educat Develop. 2012;2:e4.
10. Williams GC, Saizow RB, Ryan RM. The Importance of Self-determination theory for medical education. Academic Med. 1999;74(9):992-5.
11. Steinert Y. Perspectives on faculty development: aiming for 6/6 by 2020. Persp Med Educat. 2012;1(1):31-42.
12. Knowles M, Holton III E, Swanson R. The adult learner: the definitive classic in adult education and human resource development. 8th ed: Routledge, NY: Taylor Francis Burlington; 2015.
13. Dillman DA, Smyth JD, Christian LM. Internet, phone, mail, and mixed-mode surveys: the tailored design method. 4th ed. Hoboken, New Jersey: John Wiley and Sons; 2014.
14. FOM-SU. Faculty of Medicine-Sohag University. 2019. Available at: http://www.sohag-univ.edu.eg/facemed/.
15. Shah N, Tabassum A, Shah N. A needs assessment for faculty development at two medical colleges of Dow University of Health Sciences, Karachi. Pakistan J Med Sci. 2018;34(6):1386-91.
16. Schönwetter DJ, Hamilton J, Sawatzky JAV. Exploring professional development needs of educators in the health sciences professions. J Dent Educat. 2015;79(2):113-23.
17. Scarbecz M, Russell CK, Shreve RG, Robinson MM, Scheid CR. Faculty development to improve teaching at a health sciences center: a needs assessment. J Dent Educat. 2011;75(2):145-59.
18. Tandeter H, Castel O, Nave R, Jotkowitz A. Needs assessment for faculty development activities in medical schools in Israel. J Fam Med. 2014;1(2):3.
19. McLeod P, Steinert Y, Conochie L, Nasmith L. A faculty-development needs assessment at one medical school. Academic Med. 1997;72(6):558-9.
20. Adkoli B, Al-Umran K, Al-Sheikh M, Deepak K. Innovative method of needs assessment for faculty development programs in a Gulf medical school. Education for Health. 2010;23(3):389.
21. Amin Z, Eng KH, Seng CY, Hoon TC, Sun GP, Samarasekera DD, et al. A multi-institutional survey on faculty development needs, priorities and preferences in medical education in an Asian medical school. Med Educat Online. 2009;14:16.
22. Pololi LH, Dennis K, Winn GM, Mitchell J. A needs assessment of medical school faculty: caring for the caretakers. J Conti Educat Health Profe. 2003;23(1):21-9.
23. Artino AR, La Rochelle JS, Dezee KJ, Gehlbach H. Developing questionnaires for educational research: AMEE Guide No. 87. Med Teacher. 2014;36(6):463-474.
24. Merriam SB, Tisdell EJ. Qualitative research: A guide to design and implementation. 4th ed. San Francisco, CA: John Wiley and Sons; 2015.
25. Stes A, Min-Leliveld M, Gijbels D, Van Petegem P. The impact of instructional development in higher education: The state-of-the-art of the research. Educat Res Rev. 2010;5(1):25-49.
26. Nulty DD. The adequacy of response rates to online and paper surveys: what can be done? Assessment and evaluation in higher education. 2008;33(3):301-14.
27. Maslow A. Motivation and Personality. NY: Harper and Brothers; 1954.
28. Eldebecky NA. Faculty perceptions of faculty development programs in Egyptian universities: An exploratory study: American University in Cairo, Graduate School of Education, Department of International and Comparative Education; 2017.
29. Skeff K, Stratos G, Mygdal W, DeWitt T, Manfred L, Quik M, et al. Faculty development a resource for clinical teachers. J General Internal Med. 1997;12(Suppl 2):S56-63.
30. NARS-Medicine. National Academic Reference Standards for Medicine (2nd edition). National Authority for Quality Assurance and Accreditation of Education-Egypt; 2017.
31. O'Sullivan PS, Irby DM. Reframing research on faculty development. Academic Med. 2011;86(4):421-8.
32. Clark JM, Houston TK, Kolodner K, Branch WT, Levine RB, Kern DE. Teaching the teachers: national survey of faculty development in departments of medicine of U.S. teaching hospitals. J General Inter Med. 2004;19(3):205-14.
33. Fox RD, Bennett NL. Continuing medical education: learning and change: implications for continuing medical education. BMJ. 1998;316(7129):466-8.
34. Anwar MI, Humayun A. Faculty development: looking through different lenses. Pakistan Armed Forces Med J. 2015;65(1):110-7.

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