

Medical Education

Faculty development and medical education units in India: A survey

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ABSTRACT

Background. Faculty development in medical education is gaining momentum in India. While planning a National Conference on Medical Education (NCME 2007), we did a survey of principals and faculty of medical colleges to understand the status of faculty development programmes and medical education units in medical colleges in India.

Methods. Questionnaires were sent to principals of medical colleges by surface mail and to faculty through a web-based programme to elicit information on various aspects of faculty development programmes and medical education units. The responses of both groups were analysed.

Results. The number of medical education units has increased rapidly after regulations have been revised in 1997 by the Medical Council of India. The main activities of medical education units were to conduct workshops targeted at medical teachers. The frequently covered topics were teaching-learning, media and student assessment. Lectures dominated the methodology of imparting information. Evaluation was done mainly by feedback questionnaires and pre-test/post-test questionnaires. Projects and follow up were rarely used. The responses from both groups were strikingly similar. The major strengths of medical education units were perceived as availability of trained and motivated faculty, good infrastructure and supportive leadership. The shortcomings were lack of infrastructure, funding and full-time faculty, besides time constraints and resistance to change. The respondents suggested strengthening of infrastructure, appointment of full-time faculty and staff, incentives and recognition of contributions to faculty development, making participation a mandatory requirement, extending the scope of faculty development programmes to include research and networking at the national level.

Conclusion. The study reveals the need for policy decisions that support functioning of medical education units in India besides active participation of the faculty.

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INTRODUCTION

Faculty development encompasses all activities related to the induction, training and further development of faculty members

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so as to optimize their effectiveness as teachers, trainers and leaders in education. While most teachers in medical education accomplish the task of teaching by emulating their seniors, and by trial and error, the need for systematic faculty development programmes (FDP) is well established.¹ Faculty development is considered an essential tool to cope with new teaching tasks and is a means for participants to build important career relationships with peers, mentors and academicians who contribute to academic advancement.^{2,3} Though a number of articles have highlighted the need for strengthening faculty development in medical education in India,^{4–13} there is little information on the status of FDPs.

Faculty development in India began with the establishment of the first National Teacher Training Centre (NTTC) at Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry (now Puducherry) in 1976. In 1997, the Medical Council of India (MCI) recommended the establishment of medical education units (MEU) in each medical college.¹⁴ Further, the requirement of MEU was included in the minimum standard requirements of an annual intake of 100 students in a medical college.¹⁵ The MEUs are expected to organize FDPs, carry out research in medical education and promote continuing medical education (CME) programmes besides other activities. However, little information is available on the functioning of these MEUs.

A national conference on medical education was organized at the All India Institute of Medical Sciences (AIIMS), New Delhi on the theme of 'Capacity building in medical education'.¹⁶ As a part of planning this national conference, we conducted a survey of principals and faculty of medical colleges to assess the current status of MEUs and their role in FDPs.

METHODS

We designed two questionnaires, one for those who were in-charge of MEUs and the other for faculty members involved in faculty development activities. The list of principals of medical colleges in India ($n=260$) was used as a source to contact the first group, viz. in-charge of MEUs. For identifying the faculty group, we compiled a database from sources such as a list of previous conference participants, fellows of the 3 regional institutes of the Foundation for Advancement of International Medical Education and Research (FAIMER), International Fellows in Medical Education (IFME) and delegates registered for the conference ($n=283$).

The questionnaires were designed to elicit information on the existence of MEUs, activities during the past 2 years, topics covered, and methods used to conduct and evaluate the activities. They were also asked to list the perceived strengths and limitations of their MEUs, along with measures for improvement. The key

differences between the two questionnaires were that the ‘principals group’ was asked to provide information related to administrative issues such as when was the MEU established, whereas the faculty group was asked about their training and exposure to FDPs. The questionnaires were pilot tested on a group comparable to the target group.

The first questionnaire was sent to principals of medical colleges by surface mail. Non-respondents were sent a reminder after 4 weeks. The second questionnaire was converted to a web-based survey and was administered online to faculty members using the ‘Survey monkey’ software.

Method of analysis

The responses to the first questionnaire were analysed manually. The responses to the web-based questionnaires were analysed electronically using the ‘Survey monkey’ software. For comparing the response pattern of the two groups, Spearman rank correlation coefficient was used. The responses to open-ended questions were analysed qualitatively.

RESULTS

The response rate for the ‘principals’ survey’ was 81/260 (31.2%) and for the faculty, web-survey was 171/283 (60.4%). Of the 81 respondents from the principals group, 76 reported that MEUs existed in their college. Of these, 29 belonged to the government sector and 47 to the private sector. Most of them (60/76) were started during or after 1996 and 5 existed before 1996.

Out of 76 MEUs, 22 were headed by the principal, 18 were under a Head of Department and 10 were under a senior professor from among the faculty. Twenty-five respondents furnished multiple authorities. Only one MEU had a full-time faculty member in-charge.

The faculty groups training in medical education technology was mainly by attending a workshop held locally (75.2%), experience gained as a resource person (62%), attending an international workshop (47.5%) or an NTTC workshop (32.9%). Very few respondents had a fellowship (16.1%) or a formal degree/diploma in medical/health professional education (11%). Only 12.4% said that they had little or no training in medical education.

Activities

A total of 133 workshops on medical education were organized by

51 medical colleges during 2005–07. Most of these (90/133) were targeted towards faculty members. During the same period, 484 programmes including CMEs, clinico-pathological conferences, orations and guest lectures were organized by 56 medical colleges. The most common themes in FDPs for faculty were medical education technology (90), followed by teaching–learning methods (63). Relatively less frequent were programmes on assessment and evaluation (24), audiovisual aids (13) and educational leadership (12). Programmes on communication skills, research methodology and medical ethics were rarely held. The FDPs for nursing and paramedical staff were very few (22) and organized by only 9 colleges (Table I).

Content of FDPs

The most common subjects dealt with in FDPs were teaching–learning methods, student assessment and media/audiovisual aids (Table II). E-learning, behavioural science and managerial skills were rarely the topics for FDPs. There was a significant correlation between the responses of principals and faculty members ($r=0.98$, $p=0.001$).

Methods used for training

Lectures, group discussions and demonstrations were frequently used during FDPs to impart knowledge and skills (Table III). Role-play, case studies, brain storming and games/simulations were also used though less frequently.

Evaluation of FDPs

Verbal feedback, pre-test/post-test questionnaires and feedback questionnaires administered at the end of the workshops were most commonly used (Table IV).

Strengths and limitations of FDPs

When responses from principals and faculty members were pooled together, the following strengths emerged: availability of committed, trained faculty (78), availability of good infrastructure, resources and facilities (52), leadership and supportive management (43), novelty effect, either new institute or younger faculty (26), team work among faculty (22), regularity of the programmes (18), association/collaboration with an international body (14), budget allocation and support (8), and increased awareness among faculty (7).

The limitations were lack of infrastructure facilities and funding

TABLE I. Faculty development programmes organized by medical education units (2005–07) of different medical colleges

Programme	Faculty	Nursing, paramedical	Resident doctors	Interns	Students	Others/general practitioners	Total
Medical education technology, teacher training	39 (90)	2 (7)	3 (14)	0 (0)	1 (7)	6 (15)	51 (133)
Teaching–learning methods	17 (63)	1 (1)	1 (1)	1 (1)	3 (5)	0 (0)	23 (71)
Assessment/evaluation	14 (24)	0 (0)	0 (0)	0 (0)	1 (1)	2 (3)	17 (28)
Audiovisual aids	7 (13)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7 (13)
Educational leadership and management	6 (12)	0 (0)	0 (0)	1 (3)	1 (1)	1 (3)	9 (19)
CME, CPC, orations, guest lectures	24 (216)	5 (13)	9 (83)	3 (4)	9 (115)	6 (53)	56 (484)
Integrated teaching sessions	1 (3)	0 (0)	0 (0)	1 (5)	7 (61)	0 (0)	9 (69)
Communication skills	2 (2)	1 (1)	0 (0)	1 (2)	0 (0)	0 (0)	4 (5)
Biostatistics	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)
Medical ethics	1 (2)	0 (0)	0 (0)	1 (2)	0 (0)	1 (1)	3 (5)
Research methodology	1 (10)	0 (0)	6 (16)	0 (0)	1 (1)	0 (0)	8 (27)
Orientation programme, foundation course	0 (0)	0 (0)	11 (29)	7 (15)	8 (21)	0 (0)	26 (65)
Total	112 (435)	9 (22)	31 (144)	15 (32)	31 (212)	16 (75)	214 (920)

CME continuing medical education CPC clinico-pathological conference Figures in parenthesis are number of programmes organized and figures outside show the number of medical colleges holding them

TABLE II. Content of faculty development programmes conducted by medical education units

Topic covered	Response from principals (n=81)		Response from faculty (n=171)	
	n (%)	Rank	n (%)	Rank
Curriculum design	42 (51.8)	5	63 (36.8)	5
Teaching-learning methods	63 (77.8)	1	94 (54.9)	1
Student assessment	59 (72.8)	2	91 (53.2)	2
Media and audiovisual aids	56 (69.1)	3	85 (49.7)	3
Communication skills	49 (60.5)	4	63 (36.8)	5
Group dynamics	37 (45.7)	6	67 (39.2)	4
Programme evaluation	36 (44.4)	7	51 (29.8)	7
Educational research	35 (43.3)	8	48 (28.1)	8
E-learning	26 (32.1)	9	39 (22.8)	9
Behavioural science	25 (30.9)	10	27 (15.8)	10
Managerial skills	19 (23.4)	11	27 (15.8)	10

Spearman rank correlation: $r=0.98$; $p=0.001$

TABLE III. Teaching-learning methodology used during faculty development programmes

Method	Response from principals (n=81)		Response from faculty (n=171)	
	n (%)	Rank	n (%)	Rank
Lectures	70 (86.4)	1	149 (87.1)	1
Group discussion	62 (76.5)	2	128 (74.8)	2
Demonstration	58 (71.6)	3	128 (74.8)	2
Exercise and group task	56 (69.1)	4	115 (67.2)	4
Role-play	47 (58.0)	5	92 (53.8)	5
Case study	41 (50.6)	6	85 (49.7)	6
Brain storming	36 (44.4)	7	75 (43.8)	7
Games and simulation	31 (38.3)	8	58 (33.9)	8
Appreciative enquiry	15 (18.5)	9	28 (16.4)	9
Multi-voting	7 (8.6)	11	10 (5.8)	10
Affinity mapping	8 (9.8)	10	8 (4.6)	11

Spearman rank correlation: $r=0.99$; $p=0.001$

TABLE IV. Methods used to evaluate faculty development programmes

Method	Response from principals (n=81)		Response from faculty (n=171)	
	n (%)	Rank	n (%)	Rank
Verbal feedback	53 (65.4)	2	53 (30.9)	1
Pre-test/post-test questionnaire	54 (66.7)	1	47 (27.5)	3
Feedback questionnaire	37 (45.6)	3	50 (29.2)	2
Daily session evaluation	31 (38.2)	4	28 (16.3)	4
Follow up	31 (38.2)	4	24 (14.0)	5
Project report	24 (29.6)	6	21 (12.3)	6
External evaluation	9 (11.1)	7	14 (8.2)	7

Spearman rank correlation: $r=0.88$; $p<0.01$

(60), lack of faculty (57) including full-time (23) and support staff (19), time constraint and preoccupation with patient care (49), resistance to change and attitudinal problem (33), lack of evaluation, follow up and impact study (17), lack of incentive, recognition and scholarship (14), lack of support from top management (9), lack of experience and new institute (6), irregular programmes (6) and interference with private practice (1).

Incentive/recognition of contributions to FDPs

The respondents suggested that there should be some incentive/recognition of the contributions that faculty members made towards FDPs such as consideration for the purpose of promotion (47) and selection (7); monetary incentives (increment, allowances, remuneration) (44); travel support of attending conferences (26); certificate for participation, accreditation (16); award (best teacher) and appreciation (14); dedicated time (10); other incentives,

refreshment, hospitality (9); scholarships, fellowships and career advancement (7).

Suggestions for improving functioning of MEUs

The respondents suggested the need to strengthen the infra-structure, allocation of separate budget, facilities for learning resources and the appointment of full-time faculty and support staff. Many respondents wanted participation in FDPs to be a mandatory requirement for initial appointment or promotion. Some respondents suggested networking of activities by forming regional and national associations which could hold annual meetings and bring out newsletters and journals in medical education. Some expressed the need to hold regular activities, extend activities from teacher training to include other areas such as leadership, managerial and communication skills, professionalism including ethics, and strengthening the evaluation component.

DISCUSSION

This survey shows that faculty development in medical education in India is at a nascent stage. The MCI regulations of 1997 have led to an increase in the number of MEUs. However, there is a need to strengthen the infrastructure and faculty of MEUs, expand their areas of operation, and promote research and scholarship in the field.

Davis *et al.* identified some noteworthy characteristics of advanced medical education departments.⁴ Such departments enjoyed a sound infrastructure including full-time staff. They struck a balance among teaching, service and research. They often extended a consultancy role and formed links with other institutions nationally and internationally. Our survey suggests that most MEUs in India are deficient in infrastructure—physical and human resource. Almost all MEUs have part-time faculty, who divide their time between activities of the MEUs and their responsibilities in research, patient care and teaching in their parent departments. There is no protected time for inputs into the MEUs. Most importantly, there is neither incentive nor recognition for inputs to MEUs. This is possibly a deterrent for greater participation by faculty members.

The need for recruiting faculty and providing the best working conditions has been voiced by the WHO as a key component of quality assurance in medical education.¹⁷ The Harvard Medical School introduced a promotion ladder that recognized teaching and scholarly contributions of full-time clinical faculty. The criteria developed for promotion focus on contributions to teaching, scholarship, clinical work and departmental service. The development of this ladder had a positive influence on faculty who contributed to teaching, as they were held to be the equal of other full-time track traditionally committed to research and patient care.¹⁸ A similar approach is desirable in India.

The present scope of activities of MEUs appears to be limited and largely concentrated on teacher training, targeting mostly medical teachers. Many MEUs hold short CME activities perhaps because of the ease and feasibility. The respondents suggested other areas, viz. managerial concepts, communication skills, research methodology, e-learning and ethics should be covered in FDPs conducted by MEUs. Wilkerson and Irby argued that a comprehensive FDP should include 4 elements: professional development especially of new faculty, instructional development and skill building, leadership development and organizational development.³ Gelula and Yudkowsky suggested that if FDPs are to have an impact, they should be held with an interdisciplinary perspective.¹⁹ The MEU leaders should extend the scope of activities to the allied health sciences including nursing and dental rather than limiting the activities to medical education only.

Our survey reveals that the methodology of faculty development activities is dominated by lectures and other methods of passive learning. However, adult learning is likely to be better with a higher engagement process involving participants. A workshop format enables organizers to deploy a variety of techniques such as appreciative enquiry, brain storming, exercises, games, role-play, affinity mapping and multi-voting. Steinert *et al.* have discussed a FDP on developing successful workshop in a Canadian setting.²⁰ The fellowship programmes introduced by the FAIMER regional institutes in India make substantial use of the interactive methods.²¹

The evaluation of FDP activities appears to be the weakest link. The Kirkpatrick model, one of the first, envisaged a programme evaluation over 4 hierarchical level—reaction level

(participants' satisfaction), learning (knowledge and skills acquired), behaviour (transfer of knowledge to work place) and results (impact on society).²² The administration of feedback questionnaires and pre-test, post-test, as practised commonly can be used to evaluate the reaction and to some extent, the gain in knowledge. Sommers *et al.* explored the use of faculty self-efficacy scale for measuring the participants' ability to apply knowledge in their work settings.²³ The use of a project as a mandatory requirement for successful completion of FDPs is being used more frequently, especially in some FDPs of the regional FAIMER institutes. The field of programme evaluation is becoming more and more robust with the use of multiple methods, quantitative and qualitative, for evaluating programme outcome and the impact. Medical educators in India need to explore this field.

There are some limitations of our study. Our analysis is based on the presumption that the responses given by the subjects reflect the reality. Also, we did not address the organizational aspects of MEUs, and the impact of MEU activities on the practice of teachers. Studies are needed to address the issues of individual and institutional concerns regarding FDPs in medical education and the long term impact of such programmes in improving medical education.

Conclusion

Faculty development in India is beginning to gain ground but MEUs have a long way to go. It is time to move from 'teacher training' to address a wider canvas of professional development, adopt interactive techniques of training, strengthen evaluation and promote research. A multi-pronged approach is required, viz. advocacy for more funds for building infrastructure, introducing incentives besides development of scholarship. This will require efforts from medical educationists and other stakeholders, the government, MCI, universities of health sciences, besides international agencies.

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