

Determining Teaching Objectives for the Family Medicine Clerkship in Medical School – An Israeli National Delphi Survey

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Abstract

Background: Most of the published documents proposing teaching objectives for undergraduate clerkships were prepared by expert bodies. Seldom have the clinical teachers, who are critical to the learning process and to the implementation of the teaching objectives, been the actual proponents of its core content.

Objective: To develop a national-scale proposal of teaching objectives for the family medicine clerkship in medical school, using a consensus method and the actual, community-based teachers as the expert body.

Methods: The Delphi method was chosen for that purpose. In the first round all 189 family medicine teachers in Israeli medical schools were asked to propose five teaching objectives. In the second round the objectives, which were generated in the first round, were characterized by key words and were sent to the participants as a second round for ranking according to their importance.

Results: A total of 116 family medicine teachers (61.38%) responded in the first round and 91 of the 116 (78.5%) in the second round. They formulated 51 teaching objectives listed in order of importance, covering a wide array of themes and including knowledge, attitude and skills objectives. The most important objectives were common problems in primary care, recognition of the biopsychosocial model, and understanding the importance of the doctor-patient relationship. The structure of the list provides a unique insight into the relative importance of each objective in the context of the whole core content of the clerkship.

Conclusions: Constructing a proposal for teaching objectives is feasible using the Delphi method and the field instructors as the selecting body. The process and its results can provide faculty with relevant and important suggestions on the content and structure of the family medicine clerkship.

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managed care [1]. As a result, during the last decade we have witnessed profound changes in medical education in that direction throughout the world [2]. Primary care in general and family medicine in particular are assuming an expanding role in undergraduate medical education [3] and are now recognized as an independent academic discipline [4] critical to the education of future physicians [5]. It became evident that there are skills and clinical experience that can be provided only in a primary care setting [1,5,6]. Family medicine can be described as the body of knowledge, skills and attitudes that are practiced by family physicians [7]. There is a need to determine from that vast mass what should be learned by the students in the context of the undergraduate medical studies as a whole. Several articles suggesting goals, objectives and curricular changes have been published on that theme mostly by various advisory panels [5,8–10]. Martens et al. [4] used a consensus procedure to construct a proposal for educational objectives and requirements of an undergraduate clerkship in general practice. This study was also based on the recommendations of expert bodies that generated the initial list of objectives.

Seldom have the clinical teachers, who are critical to the learning process and to the implementation of the teaching objectives, been the actual proponents of its core content. Trying to determine the students' activities during their clerkship by setting curricular guidelines alone was often ineffective, probably due to the lack of intrinsic motivation in those implementing it [11]. By selecting as our expert panel the clinical teachers of family medicine, who are engaged daily in the provision and teaching of primary care, we hoped to bridge this gap between theory and practice. The aim of this study was to develop a national-scale proposal for teaching objectives for the four-week family medicine clerkship in medical school, using the Delphi process. This is the first reported attempt to establish concrete teaching objectives in a single study using a consensus method on a national scale.

Methods

The Delphi process

The Delphi process takes its name from the Delphic Oracle's skills of interpretation and foresight. It is a consensus method, and as such is primarily concerned with deriving quantitative estimates through qualitative approaches. The aim of con-

The healthcare needs of society are changing. As they do so, medical education must change accordingly. One of the major changes is the shift from a hospital-centered to a community-centered healthcare approach, with emphasis on primary and

sensus methods is to determine the extent to which experts or lay people agree on a given issue [12]. The Delphi technique has been used widely in health research within the fields of technology assessment, education and training, and priorities and information [12]. It enables a large group of experts to be contacted at low cost, usually by mailing a self-administered questionnaire, with few geographical limitations on the sample. This method, with its key features of expert input, anonymity, interaction with controlled feedback and group response, was considered particularly suitable to address the issue of teaching objectives for the family medicine clerkship.

Selection of experts

In order to obtain a panel of experts for this topic, all the family physicians in academic positions throughout Israel who are engaged in teaching medical students in the family medicine clerkship were addressed. They were selected for two reasons. First, as experienced and practicing primary care physicians, they have knowledge and opinions about the priorities. Second, as active teachers, they have an understanding of what is feasible to teach. We obtained from all four medical schools in Israel the lists of all the teachers who instructed students in one academic year. A total of 189 teachers was canvassed. Those who chose to contribute and responded in the first round of the Delphi process formed the panel.

First round

A postal questionnaire was sent to the 189 potential panel members. A brief covering letter provided the study background, described the Delphi process, and invited them to participate. The participants were asked to list five teaching objectives that can be achieved during the family medicine clerkship and that they believed were the most important for the students in their future careers. A reminder letter was sent after 3 weeks. The topics suggested by the teachers were categorized using a system of key words in two stages. In the initial stage, three people, working independently, marked key words on the suggested topics. After that, in a joint meeting, the objectives were listed in their original wording. In the second stage, they arranged all the objectives according to the number of panel members who proposed them, in descending order.

Second round

In the second round, each first-round participant was sent a postal questionnaire with the list of all the objectives that were formulated in the first round. A covering letter was enclosed describing the process by which the list was created and asked the participants to rate, on a six-point scale, each of the proposed objectives according to its importance. The data on the characteristics of the par-

ticipants and their suggestions were analyzed using the statistical package EPI INFO 6.

Results

First round

The first-round letter was sent to all 189 physicians, 117 males and 72 females, who instruct students in all four Israeli medical schools. A total of 116 family medicine teachers (61.38%) responded. The mean age was 42.5 years (range 33–65), and there were 83 males (71.55%) and 33 females (28.45%). The response rate was significantly lower among women than among men (45.8% vs. 70.9%, $P < 0.002$). The average teaching experience of the participants was 7.43 years (range 1–26), and 64 (55%) of them had graduated in Israel. Regarding type of practice, 61.3% worked in urban clinics, 15.1% in rural clinics, and 23.6% in both urban and rural. Table 1 shows the distribution of teachers according to the different medical schools. There were no differences between the different schools in response rate, age, gender, and type of practice, teaching experience, or objectives distribution.

The first-round participants proposed a total of 607 suggestions – an average of 5.3 teaching objectives per teacher (range 2–12). A wide range of objectives was covered including knowledge objectives, for example the presentation of common problems; skills objectives such as communication skills; and attitudinal objectives, for example relating to the patient and not only to the disease. After grouping the objectives according to key words, 51 specific objectives were formulated and the list was sent for grading to those who had participated in the first round.

Second round

Of the 116 panel members who participated in the first round, 91 responded on the second round (response rate 78.5%). There was no statistically significant gender difference this time and the participants' characteristics were similar to those of the first round [see Table 1]. They rated the importance of each of the first-round objectives on a six-point scale. Mean scores ranged from 2.01 for recognition of the paperwork in primary care through 5.52 for common problems in primary care. The objectives that were generated in the process are listed in Table 2. They are arranged in order of importance with their final score on the right-hand side. The final score was calculated by summing all the scores for each objective and dividing it by the maximal possible score, presented as a percentage.

Table 1. Characteristics of the family medicine teachers who participated in the study

	Tel Aviv	Haifa	Beer Sheva	Jerusalem	Total
No. of teachers	104 (55)	36 (19)	25 (13.2)	24 (12.7)	189
First-round participants	64 (5.2)	22 (19)	16 (13.8)	14 (12)	116
First-round response rate	61.5%	61.1%	64%	58.3%	61.37%
Second-round participants	48 (52.7)	21 (23)	12 (13.2)	10 (11)	91
Second-round response rate	75%	95.45%	75%	71.42%	78.45%

Table 2. Teaching objectives for the family medicine clerkship, as ranked in degree of importance by the teachers who participated in the second round (n=91)

	First round (%)*	Objective	Second-round score
1	37.07	Common problems in primary care	92.03
2	44.83	Recognition of the biopsychosocial model (relating to the person, not only to the disease)	91.75
3	21.55	Understanding the importance of the doctor-patient relationship	86.08
4	25.0	The essence, possibilities and limitations of primary care	83.39
5	9.48	Recognition of the family doctor's role as manager of the patient's care	83.37
6	26.72	The importance and principles of preventive medicine including health education	83.15
7	19.83	The care of the chronically ill in the community	82.78
8	22.41	Acquiring and improving communication skills with patients	82.23
9	23.28	The importance of time and continuity of care as a diagnostic and therapeutic tool	81.31
10	35.34	Recognition of the reciprocal interaction between the individual and the family in health and illness	81.13
11	21.55	Establishing a priority-based clinical approach with appropriate use of resources	80.22
12	3.44	Experience in dealing with uncertainty; care can be provided even without a diagnosis	80.03
13	12.07	Recognition of the attitude difference between hospital and primary care	78.4
14	3.44	The doctor's responsibility (accountability) towards the patient	78.15
15	8.62	Acquaintanceship with the scope of primary care	77.78
16	15.52	Acquiring the skill of performing a focused history-taking within limited time	77.66
17	1.72	Recognition of psychosomatic phenomena	76.92
18	1.72	Recognition of the natural course of common diseases	76.37
19	14.66	Experiencing decision-making processes alone, in a primary care setting, and with a "first-contact patient"	76
20	16.38	Recognition of the epidemiology differences between hospital and primary care	75.82
21	18.97	Recognition of the importance of communication and cooperation with colleagues – GPs and consultants in the community and in hospital	75.27
22	14.66	Recognition of the importance of house calls and experiencing them	74.72
23	8.62	Acquiring the skill of performing a focused physical examination	73.26
24	4.31	T Approach to the elderly in the community	72.89
25	3.45	Emergency situations in primary care	71.61
26	12.93	Recognition of the community's additional systems for support and care	70.88
27	4.31	Approach to the care for children	70.14
28	1.72	Care of the terminal patient	68.7
29	0.86	Dealing with the difficult patient	67.6
30	2.59	The role and limitations of the family physician as a gatekeeper	67.4
31	12.07	Improvement of the image of primary care (as a discipline?)	67.03
32	10.34	Recognition of teamwork in primary care	66.66
33	3.45	Drug treatments in primary care (dosage and side effects)	66.12
34	0.86	Recognition of the primary care physician as the patient's representative	65.93
35	2.59	Recognition of the need for lifetime learning and updating	65.2
36	8.62	Exposure to primary care as an academic discipline	64.84
37	3.45	Writing a referral letter	64.29
38	0.86	Understanding that opinions on treatment can differ	63.92
39	2.59	Promoting self-awareness and recognition of limitations	63
40	6.9	Medical record-keeping	61.9
41	5.17	Experience in prescribing	60.26
42	4.31	Attracting students to primary care postgraduate training	59.16
43	9.48	Recognition of the role of the family physician as a care provider for the community	57.69
44	2.59	Exposure to the planning of medical services	56.93
45	1.72	Selected topics in psychiatry	55.49
46	3.45	Selected topics in internal medicine	49.27
47	0.86	Preparation for the final examination	48.15
48	3.45	Acquiring technical skills (such as minor surgery)	47.62
49	1.72	Exposure to computerization in practice	44.32
50	0.86	Selected topics in gynecology	39.19
51	0.86	Recognition of the various forms in primary care	34.43

* Percent of the teachers (n=116) who proposed the objective in the first round.

Discussion

The main outcome of our study is a list of teaching objectives for the family medicine clerkship in Israel that was generated from end to end by the practitioners who actually teach in the field.

By selecting the Delphi technique as the research method we achieved two main goals. The first was to reach as many

potential panel members as possible and to enable them to participate and contribute despite geographic and time limitations. The second was to give them an opportunity to express their ideas and priorities without interference or dominance by influential panel members.

The high response rate (over 60% in the first round and 78% in the second, compared to less than 50% in most published

studies), and the fact that many teachers suggested more than the requested five objectives, demonstrate that they were interested in the subject and keen to contribute.

A total of 51 teaching objectives were generated in the first round. It can be defined as the "brainstorming" part in which the core content of the clerkship was determined.

Sending the full list to the participants in the second round enabled them to address the full scope of the issues, even those that were suggested by only a few, and rank them according to their significance for the future doctors. In addition, the fact that the objectives were referred to as a single list without categorization into specific skills, knowledge or attitudes resulted in a unique inside view of the teachers' opinion on the relative importance of each of them in comparison to the others. This opinion probably reflects what they actually do and also reflects existing deficiencies in their working environment. Examples of these deficiencies are reflected in objectives number 13, 20, 21 and 38, which relate to the interactions between disciplines and levels of care. This observation can lead to the first application of our study results since it provides the academic departments with a unique view on what is done by the teachers, and for healthcare managers it reflects existing deficiencies in the interactions between disciplines.

Common problems in primary care ranked second in the first round but was eventually elected as the panel's most important objective. Included was most of the body of medical knowledge – the cornerstone of medical education. This was placed first also by others such as Robbins et al. [8], Freeling [13], who phrased it as "the diagnosis and management of conditions not seen in hospital," and Kamien and MacAdam [14] who stated the same when they debated the need for a department of family medicine in medical schools.

In most of the cases there was a direct correlation between the number of proponents in the first round and the objective's grading in the second. However, there were several objectives that were proposed by a few in the first round but received high grading in the second. For example, only 11 of 116 teachers (less than 9.5%) mentioned "recognition of the family doctor's role as manager of the patient's care" in the first round. This placed it twenty-first on the list. In the second round this objective was placed fifth in the list, a ranking that reflects a very broad agreement on its importance (83.39%).

A comprehensive discussion on all the objectives and their implications is beyond the scope of this study. Each of them is worthy of a comprehensive assessment and comparison with the published literature and with local needs.

Conclusion

The aim of the study was to reach a broad agreement on the teaching objectives for the family medicine clerkship in medical school. The full list of objectives should be studied and assessed for future implementation. Many objectives will require more detailing for that purpose and for future audit and assessment. One major conclusion, in view of the

numerous and important objectives that can be achieved only in primary care, is that students should spend more time in primary care, and that more funds should be allocated for that purpose as well as for the development of programs such as the interdisciplinary generalist curriculum project at the universities of Vermont [15] and Nebraska [16].

References

- O'Neil EH, Seifer SD. Health care reform and medical education: forces toward generalism. *Acad Med* 1995;70(Suppl):37-43.
- AAMC policy on the generalist physician (as adopted Oct. 8 1992). *Acad Med* 1993;68(1):1-6.
- Richards WR, Henry RC. Community partnerships: educational linkages to increase the number of primary care practitioners. *Acad Med* 1993;68(8):594-6.
- Martens FMJG, Van der Vleuten CMP, Grol RPTM, op't Root JMH, Crebolder HFJM, Rethans J-J. Educational objectives and requirements of an undergraduate clerkship in general practice. The outcome of a consensus procedure. *Fam Pract* 1997;14:153-9.
- Inui TS, Williams WT Jr, Goode L, Anderson RJ, Bhak KN, Forsyth JD, Hutton JJ, Wallace AG, Daugherty RM Jr. Sustaining the development of primary care in academic medicine. *Acad Med* 1998;72(3):245-57.
- Trent B. More undergraduate exposure to family medicine needed, conference told. *Can Med Assoc J* 1989;141(3):239-40.
- McWhinney IR. A Textbook of Family Medicine. Oxford, UK: Oxford University Press, 1989:12.
- Robbins AS, Cope DW, Campbell L, Vivell S. Expert rating of primary care goals and objectives. *J Gen Intern Med* 1995;10:429-35.
- Educational committee of the general medical council. Tomorrow's Doctors – Recommendations on Undergraduate Medical Education. December 1993.
- The Society of Teachers of Family Medicine (STFM) working committee to develop curricular guidelines for a third-year family medicine clerkship. National curricular guidelines for third-year family medicine clerkship. *Acad Med* 1991;66:534-9.
- Fox R, Mazmanian PE, Putnam RW. Change and learning in the lives of physicians. New York: Praeger, 1989.
- Jons J, Hunter D. Consensus methods for medical and health services research. *Br Med J* 1995;311:376-80.
- Freeling P. Objectives and students' learning in general practice. *Med Educ* 1982;16:212-18.
- Kamien M, MacAdam DB. Are departments of general practice in medical school really needed? *Med J Aust* 1991;154:461-4.
- Fogarty J, Firs LR, Levine M, Reardon M, Magrane D The Interdisciplinary Generalist Curriculum Project at the University of Vermont College of Medicine: The Vermont Generalist Curriculum (VGC) Experience. *Acad Med* 2001;76:S127-30.
- Steele D, Susman J, McCurdy F, O'Dell D, Paulman P, Stott J The Interdisciplinary Generalist Project at the University of Nebraska Medical Center. *Acad Med* 2001;76:S121-6.

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