Assessment of clinical residents' needs for ten educational subjects

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ABSTRACT

Background *Fulfilling the learners' "real needs" will improve medical education. There are subjects that are necessary for any clinical residents not considering their field of specialty. Among the subjects ten seems to be the most important: research methodology and data analysis, computer-based programs, medical recording, cardiopulmonary and cerebral resuscitation, clinical teaching programs, communication skills, clinical ethics, laboratory examinations, reporting special diseases and death certification, and prescription.*

Purpose *This cross-sectional study assessed educational needs of clinical residents for ten educational subjects.*

Methods *A questionnaire prepared by board faculty members consisted of 10 close-ended questions, and one open-ended question was distributed among 1307 residents from 22 clinical disciplines, who registered for preboard or promotion exam in June 2000.*

Results *Among the subjects three were the most needed: computer-based programs 149 (60%), data collecting system 606 (49%), and clinical ethics 643 (46%). The prescription standard was the least required 177(13%).*

Conclusion *Complementary training courses on these subjects can be an answer to the clinical residents needs.*

Keywords *RESEARCH METHODOLOGY, COMPUTER IN MEDICINE, CPR, CLINICAL TEACHING METHODS, COMMUNICATION IN MEDICINE, MEDICAL ETHICS, LABORATORY ORDERING, DISEASE CODING SYSTEM, DEATH CERTIFICATE, PRESCRIPTION WRITING*

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Introduction

If medical education is to improve, it would be largely dependent upon fulfilling the learners' "real needs". This will encourage more favorable attitudes in the students towards medical education (1).

In this study, the following ten important issues that a clinical medical student encounters were assessed:

1. Research methodology and data analysis knowledge is useful for medical students to present a research project for their doctoral dissertation (9).
2. In the current educational environment, it is difficult to avoid exposure to computers and other aspects of information technology. It is reasonable for students to use computer programs such as computer aided diagnosis (CAD), computer aided simulation (CAS), and computer aided instructions (CAI) as learning aid (5).
3. It has been indicated that medical records in Tehran medical university hospitals have many shortcomings in problem lists, differential diagnosis, on-service note, off-service note, and reordering. Therefore, teaching accurate medical recording benefits the educational system (10).
4. Medical students are the first line of cardiopulmonary and cerebral resuscitation (CPCR) critical management, with a golden time of 4-6 minutes for preventing brain damage and mortality rate as high as 50-60%, in emergency rooms (2,10).
5. The residents are mentors and positive role models for students, a role that can be improved by clinical teaching programs (9).
6. An effective communication skill is one of the characteristics of a good physician with a good rapport with patients and other medical staff. So, it is justified to practice this skill in an organized educational system (4).
7. Clinical ethics practice assists physicians in identifying, analyzing, and resolving ethical issues in clinical medicine. Practice of good clinical medicine requires some working knowledge about ethical issues such as malpractice, informed consent, truth telling, confidentiality, end-of-life care, pain relief, and patient rights.
8. Education laboratory examinations increase learners' competence in diagnostic tests. As a result,

clinical procedures become more acceptable and meet patients' satisfaction. A study has revealed that many laboratory tests ordered as a routine may not be necessary and impose inappropriate costs for the patients (14).

9. Health authorities require reporting special cases according to the International Statistical Classification of Diseases and Related Health Problems (ICD 10). Familiarity with this system supports an efficient surveillance system (15). A self-report survey indicated that only 15% of the residents had a good ability for using ICD 10 (8).

   Population-based mortality statistics are derived from the information recorded on death certificates. This information is used for many important purposes, such as the development of public health programs and the allocation of health care resources. Although most physicians are confronted with the task of writing death certificates, many do not receive adequate training in this skill (6). Errors are common in the completion of death certificates in the inpatient teaching hospital setting. Alternative methods of presenting guidance on death certificate completion can improve the accuracy of death certification (7,8).

10. Erroneous prescriptions and orders, such as dosage, number, bad handwriting, and drug interaction is another problem that has been identified and confirmed in a study in Iran (12).

    In addition, recommendations are introduced for facilitating and improving clinical teaching programs.

Materials and Methods

We performed a descriptive cross-sectional survey to assess educational needs. A total of 1307 residents from 22 clinical disciplines were enrolled in the study. The subjects were recruited from residents who registered for preboard or promotion examination in June 2000. A questionnaire requesting attitudes towards 10 educational subjects, desirable for implementing into the educational daily practice, were prepared by board faculty members from different disciplines in a group discussion. The questionnaire consisted of 10 close-ended questions, and one open-ended question was also distributed among participants.

The study was approved by the ethics committee and participants were informed. A complete analysis of effective factors on the needed topics was not possible because of limitations in gathering data. Also, data about the disciplines were not included in our analysis because 437 subjects did not respond to this question. Only descriptive analysis of data was performed.

Results

As shown in Table 1, 60% reported that computer-based programs was required. The second most common required subject was data collecting system (49%) followed by clinical ethics (46%), which was chosen more by residents of infectious disease, urology, occupational medicine, and psychology, and less by forensic medicine residents. Although ordering laboratory tests was a known problem, only 281 residents (21%) felt the need. The low attitudes regarding standard coding of ICD 10 and death certification (only 25% of residents requested education) were inappropriate to the low ability of the residents stated in these aspects. Other requested subjects were research methodology and data analysis (39%), data collection systems (49%), CPCR (23%), clinical training methods (26%), and communication skills (29%). Prescription standards was the least required (13%).

Discussion

The present study has demonstrated a need for acquiring selected educational subjects in order to put into curriculum of medical schools. The three high priority subjects have stated to be introduction to computer-based programs, data collection systems, and clinical ethics. Most participants had registered their research project, except those in the first year, which may have contributed to the low attitude towards research methodology and data analysis (16).

There are three assumptions for the low interest of the residents in CPCR training programs:

a) Primary and advanced CPR workshops were held for the first-year residents.

b) After passing the first year, residents had less responsibility for caring for CPCR patients.

c) In some disciplines, residents had never felt the necessity of learning CPCR.

Recommendations for improving learning

- Improving collaboration among educational directors.
- Implementing short-term workshops by educational departments.
- Carrying a mandatory one-month complementary course for residents.
- Conducting a course plan before this one-month complementary course.
- Assessing and evaluating this one-month complementary course.

TABLE 1- FREQUENCY DISTRIBUTION OF RESIDENTS' EDUCATIONAL NEEDS BASED ON DIFFERENT DISCIPLINES, IN THE AFFILIATED HOSPITALS OF TEHRAN UNIVERSITY OF MEDICAL SCIENCES & HEALTH SERVICES, SUMMER 2000*

Discipline	TN	RM (%)	CS (%)	MI (%)	CPR (%)	CTM (%)	CS (%)	LI (%)	OP (%)	DCS (%)	OPW (%)
Internal Medicine	106	53 (50)	87 (82)	77 (73)	24 (23)	31 (33)	38 (36)	39 (37)	27 (25)	32 (30)	18 (17)
Pathology	57	33 (58)	49 (86)	39 (68)	9 (16)	16 (28)	20 (35)	31 (54)	8 (14)	11 (19)	5 (9)
ENT	31	13 (42)	26 (84)	16 (52)	18 (58)	9 (29)	6 (19)	21 (68)	5 (16)	4 (13)	2 (6)
General Surgery	63	63 (100)	55 (87)	49 (78)	21 (33)	28 (44)	25 (40)	49 (78)	15 (24)	28 (44)	9 (14)
Anesthesio-logy	106	63 (59)	90 (85)	52 (49)	23 (22)	50 (47)	40 (38)	81 (77)	32 (30)	50 (47)	21 (20)
Gynecology & Obstetrics	92	31 (34)	79 (86)	67 (73)	41 (45)	17 (18)	43 (47)	65 (71)	46 (50)	36 (39)	19 (21)
Ophthalm-ology	32	14 (44)	27 (84)	22 (69)	19 (59)	16 (50)	15 (47)	24 (75)	12 (37)	8 (25)	12 (37)
Psychiatry	21	14 (67)	18 (86)	15 (71)	46 (22)	6 (29)	6 (29)	17 (81)	4 (19)	6 (29)	3 (14)
Radiology	15	6 (40)	15 (100)	10 (67)	1 (7)	5 (33)	6 (40)	13 (87)	1 (7)	4 (27)	1 (7)
Dermatology	29	10 (34)	20 (69)	17 (59)	3 (10)	7 (24)	6 (21)	14 (48)	5 (17)	3 (10)	2 (7)
Nuclear Medicine	7	6 (86)	5 (71)	3 (42)	1 (7)	2 (29)	3 (43)	4 (57)	7 (100)	1 (14)	1 (14)
Radio-therapy	16	16 (100)	10 (62)	9 (56)	4 (15)	3 (19)	4 (25)	11 (69)	4 (25)	3 (19)	1 (6)
Orthopedics	27	12 (44)	17 (63)	18 (67)	4 (15)	10 (37)	9 (33)	12 (44)	1 (37)	6 (22)	6 (22)
Neuro-surgery	19	15 (79)	17 (89)	15 (79)	4 (21)	6 (32)	5 (26)	12 (63)	4 (21)	6 (32)	3 (16)
Urology	15	7 (47)	12 (80)	10 (67)	0 (0)	5 (33)	7 (47)	13 (87)	4 (27)	4 (27)	1 (7)
Infectious Disease	24	12 (50)	20 (83)	19 (79)	3 (12)	7 (29)	7 (29)	14 (87)	2 (8)	8 (33)	1 (4)
Neurology	23	15 (65)	21 (91)	16 (70)	6 (26)	9 (39)	11(48)	12 (52)	10 (43)	6 (26)	5 (22)
Pediatrics	90	55 (61)	79 (88)	57 (63)	31 (34)	45 (50)	35 (39)	70 (78)	42 (47)	41 (46)	31 (34)
Cardiology	22	15 (68)	19 (86)	17 (77)	5 (23)	13 (59)	12 (56)	15 (68)	9 (41)	10 (45)	4 (18)
Forensic Medicine	59	26 (44)	47 (80)	42 (71)	31 (18)	20 (34)	22 (37)	21 (36)	7 (12)	15 (25)	10 (17)
Community Medicine	5	1 (20)	3 (60)	2 (40)	1 (20)	1 (20)	1 (20)	3 (60)	0 (0)	2 (40)	0 (0)
Occupational Medicine	11	6 (55)	7 (64)	8 (73)	4 (36)	7 (64)	5 (45)	9 (82)	5 (45)	4 (36)	3 (27)
Total		473	723	580	286	315	326	550	251	288	158

*TN, Total Number; CS, Computer Software; MI, Medical Informatics; CTM, Clinical Training Method; CS, Communication Skill; LI, Legal Issue; OP, Ordering Procedures; DCS, Disease Coding System; OPW, Ordering & Prescription Writing

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