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An Academic Medical Center: a Customized Strategy to Overcome the Shortcomings of Interns' Ambulatory Education

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Abstract

Purpose: This study aims at evaluating the medical faculty Interns' skills in ambulatory area both from their own perspectives and researchers' observations, in order to diagnose the causes of the problems and to recommend the right solution.

Method: In this study (2010), 4 researchers and 45 Interns of the Imam Reza Academic Medical Center (IRAMC), Tabriz- Iran measured the Interns' abilities in ambulatory care setting from 9 disciplines based on 1335 patients visited and using a well-structured questionnaire covered those abilities based on the MD2000 curriculum of the Brown University. Ambulatory teaching process in each clinic was described according to various items and based on researchers' direct observations of 45 sessions.

Results: forty six faculties visited 10293 patients during two-hour sessions in an extremely varied range -two to five times- per week for a period of five months (439 sessions) in 9 visit rooms with about 160 square feet area. The teaching model in all clinics

was Grand Stand model, and some important reasons of the Interns' imperfect ambulatory education were distinguished: attending in a resident-centered venue just to observe those mostly follow-up, complex and referral cases; lack of engagement in the patients' visit process and not receiving any feedback. The level of the Interns' abilities was mostly low both from their points of view and researchers' observations. Significant differences upon 4 items were found.

Conclusions: We found "frenetic and chaotic pace "of patient visit in IRAMC as the key constraint on ambulatory teaching, and in order to augment the Interns' unsatisfactory skill level, several customized recommendations would be presented.

Keywords: **Ambulatory Education; Intern; Shortcoming; Clinical Skill.**

1. Introduction

"The neighborhood of medical training is changing"(1), and the amount of the care provided to patients in various ambulatory settings has undoubtedly increased in the last decades.(2) About 95% of the medical care is now delivered in busy ambulatory settings.(3) Despite lots of published guidelines to help ambulatory care teachers, few researches show that they are being used.(4)

On the one hand, there are growing concerns about the quality of clinical skills instruction at the U.S. medical schools(4), lack of time for direct instruction according to some observational studies of teaching and learning in the ambulatory setting, inadequate tendency to clinical activities, lack of consultation with attending physicians (attending physicians discussed about nearly 1out of 3 cases visited by the residents and medical students), lack of direct observation and feedback in 0–6% of cases discussed5.

On the other hand, according to several reports the ambulatory care education in Iran(5-9) has not got its required position and fair quota in medical students' training; so that there are lots of challenges in most Iranian medical sciences universities, specifically in Interns' education area.

The findings of the researches have been limited to the urgent need for a precise educational planning to better meet the core objectives introduced by the health ministry. Although they unanimously insisted on the existing gap in medical students' current clinical skills and their future practice needs, none has unfortunately addressed the problem in details.

"The relations between learners' evaluation of the undifferentiated patient problems and their abilities to develop clinical reasoning, judgment, or other abilities desirable for a physician are unknown; and exploring such relations should remain as a research priority".(10)

Hence, the necessity of determining the Interns' problems due to their clinical skills made us conduct this study to evaluate the medical faculty Interns' skills ambulatory education at the clinics of the IRAMC both from their own perspectives and our direct observations; this helps us determine the causes of the problems and provide solution.

We selected the clinics of IRAMC for our research, because it was the biggest Academic Medical Center in the north west of Iran, and about forty percent of the ambulatory training in Tabriz Medical Sciences University was performed over there.

2. Method

The study was conducted (2010) at the Imam Reza Academic Medical Center (IRAMC), Medical Sciences of Tabriz University - Iran. We accomplished

this study in two sections. Reviewing all skills should be acquired by a general practitioner mentioned in previous studies(11-20), and considering the Interns' desired skills in the pilot study (2009), we observed a profound conformity between the curriculum skills of the Brown University(18) *under the title of MD2000*, and those of introduced by the Iranian health ministry. Thus, a new questionnaire was developed to evaluate clinical skills of the Interns of medical faculty n order to define the problems of their ambulatory education at the clinics of IRAMC both on their own perspectives and our direct observations. A nine-item questionnaire, with a five-point Likert scales ranging from very low (1) to very high (5) was used as pilot-test by 10 members of the local experts of the medical education panel and the design improved based on their feedback. 9 out of 45 presupposed observations of the study were conducted by the researchers, and gave us an excellent Alpha Coefficient Agreement. The Research Ethics Board of the Research and Technology deputy for the Medical Sciences of Tabriz University gave us formal ethical approval for involving Interns and having observations in the framework of this study, provided that we get the related departments' formal consents.

Section 1 involved 45 Interns from 9 disciplines whom were allowed to participate in the study in order to obtain their anonymous evaluations of how much ambulatory teaching helped them to possess the listed abilities from their view point. The disciplines included Surgery; Internal medicine consisted of Gastroenterology, Nephrology, Rheumatology, lung diseases and Endocrinology; Neurology; Ear, Nose, and Throat and Infectious diseases.

In the second section of the study, one of the investigators (SGH) continued observations on the status of ambulatory teaching during 36 half-day working in clinics of IRAMC (36 sessions). We valued Interns' possessed abilities in each of those 9 disciplines; using a questionnaire containing similar items to those administered by themselves earlier. We also described ambulatory teaching process in each clinic by the: size of visit rooms, number of visits involved per Intern, number of visits recorded per faculty, number and level of learners, the ratio of trainees to the faculty, the type of patients visited (first time, follow up and complex referral case), learners' participation status, condition of given feedbacks, ambulatory teaching model, and teaching methods and strategies used by the faculty.

Furthermore, we used the information of the center's HIS (health information system) to have the number of patients seen per session from September 2010 to February 2010. Thanks to the formal consents of department chairs, all 9 people in charge of reception at clinics of IRAMC who were accustomed with this study's objectives and all the ethical issues to consider, not only recorded the exact entrance and exit time of in the faculty, but also entered the number of patients seen each session in the center's HIS.

Facilitating the data interpretation process, we additionally calculated the mean spent time (the faculty spent with students and patients) for each patient's visit and a ratio of trainees to faculty.

The data were excluded if they were not in accordance with the recorded information on HIS of the center (very few). Then they were analyzed using the SPSS software version 15.0(SPSS Science, Chicago, IL, USA). Descriptive statistics method was used to characterize the average score of the each ability based on both Interns' perspective and our observations, and Mann-Whitney U test was used to compare

mean rank between the two perspectives. All tests were two-tailed (p= 0.05) to determine statistical significance.

3. Results

Forty six academic teachers along with the residents visited 10293 patients in 9 clinics' visit rooms of the IRAMC with about 160 square feet area, in two-hour sessions (from 10 A.M to 12 M.D) in an extremely widespread range -two to five times- per week and for five months (439 two-hour sessions).

Figure 1 shows the mean number of patients seen per session and the mean time spent for every visit conducted in those 9 clinics.

Every day, after holding morning reports and doing working rounds in each department, one faculty with at least one resident and fellow and three to seven Interns attended in each room, and the patients were double booked even triple booked in some visit rooms, followed by a short time devoted to ambulatory teaching with a special focus on residents' needs. Interns were involved in a few visits (101 out of 1335 observed visits, 7%).We did not notice any feedbacks be given to Interns.

The ratio of trainees to faculty varied from 5:1 to 11:1 in different clinics, and the proportion of the follow-up patients was from 57 to 100 percent, and most of the patients were complex cases with earlier hospitalization records. There was no access to pertinent text books or journals and any other instructional aids such as web-based resources to be referred when necessary. The teaching model in all clinics was Grand Stand model.

The level of the Interns' possessed abilities was mostly low both from their points of view and researchers' observations, moderately exceptions were related to the third ability based on the researchers' observations and the first, fourth and seventh abilities according to the Interns' view points. Looking more closely at the results presented in the Table 1, it can be find out that there were considerable differences between the Interns and researchers' findings with regard to 4 items. The same is true based on the Mann-Whitney U test findings.

4. Discussion

Some researchers reported the number of patients visited by the fulltime faculty in university affiliated hospitals as insufficient to meet the medical students' needs.(2) However, we believe that the number of patients was adequate to meet the objectives of each trainee in all disciplines. Moreover, in Interns' needs and their most probable future occupation problem (as Family physicians, at least in the first two years after their graduation in Iran) , we may find "frenetic and chaotic pace"(21) of patient visit in IRAMC as the key constraint on ambulatory teaching , even by a brief glance at some important shortcomings of the Interns' ambulatory education e.g. attending in a resident-centered venue just to observe mostly follow-up, complex and referral cases visited by the faculty in such small rooms, few involving in the process of patients' visit and not receiving any feedback. The same is confirmed in other researchers' findings which state those clinical faculties who do not effectively observe students' performances and do not provide feedback seem to be most responsible for lack of clinical skills training.(22)

Hence, there are some suggestions to promote the Interns' unsatisfactory skills in ambulatory training:

- to segregate this integrated outpatient setting in IRAMC to both general- multidisciplinary and specialty-subspecialty clinics.
- to alter the quota of using hospital clinics from the current 100 percentage

to a lesser degree and devote completely different proportions to both clinics of Academic Medical Centers and Community Settings for several important reasons; just the same as those reported in Carney PA et al. in their observational study on comparing ambulatory care education in Academic Medical Centers and Community-based practices.(23) Unfortunately there is no idea about what the proportion should be, and we have to seek for the experts' opinions or the findings of the future researches.

- to pay attention to contribution of the community preceptors in ambulatory teaching sessions as well as in implementing curricular programs provided by our busy fulltime medical faculty, considering the 13th report of the Council on Graduate Medical Education (COGME)(24) and concentrating on the point that: community preceptors are applied in nearly 94% of medical schools the same as clinical teachers around the world, especially in ambulatory settings(25); also more than 500 preceptors participated in about 47% of U.S. medical schools Walling A.D. et al.(25) whereas we have not used any preceptors yet.

- to think about a novel instructional plan for providing a well-defined ambulatory educational rotation for undergraduate medical students, completely different from the current one according to which Interns just attend in two-hour sessions, merged into their clinical rotations to practice on inpatients. In this way, no faculty could ignore the assessment of the Interns' abilities in ambulatory care setting. Additionally, Interns would have opportunity to be a productive member in clinical system that does not interfere with the clinic's operations; also they would possess enough knowledge and skills to be more accustomed to the out-patient care.(16)

- to consider key roles for clinical faculty in all stages of ambulatory care education, including planning for precise evaluation of the students' learning in clinics according to the provided learning opportunities and experiences; and their participation in formal training or clinical teaching(26), we recommend the medical program directors to provide opportunities to hold some Faculty development programs aiming at preparing the faculty to teach in ambulatory care settings;(26) for example to change their traditional teaching methods using other ambulatory teaching models including: Tutor model; Shuttle model; Report-back model; Team- member model etc.

- to motivate interns to have high quality portfolios, containing documents based on the important learning and teaching moments they experienced while attending out-patient visits. More helpful feedbacks could be provided in the closest proper time whether in outpatient mornings(1) or any other scheduled Intern-based conferences, even when they attend in busy hospital clinics for better practices on some specific patients.

Restrictions

This study faced some restrictions which may have effects on the findings e.g. we did not weigh the items of the research questionnaire up in order of their diverse weight, so that our recommendations could not address those 9 abilities respectively, regarding their priorities.

It is the time to add SPICE (Harden educational strategies) to the undergraduate medical education curriculum in all medical sciences universities of Iran; because having an education does not make Interns really educated. so, it would be easier to well supervise Interns, to organize their study and to guide them in the process of becoming a self-directed adult learners(27) who recognize their own learning needs, are

familiar with learning objectives, identify and use the present learning resources, opt for proper learning strategies and implement them. In addition it would evaluate learning outcomes(28) more efficiently. As a matter of fact, we found that ignoring the above mentioned suggestions is the reason for differences between the Interns and researchers perspectives about the level of the Interns' possessed abilities.

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TABLE 1. How Much Mbulatory Teaching Helped Interns to Possess the Predetermined Abilities Both on Their Points of View, and Researchers' Observations, 2010

	Interns [a]	Researcher [b]	P. Value
Effective communication	2.62 ± 0.61	2.27 ± 0.93	0.01
Basic clinical skills	1.52 ± 0.62	2.33 ± 0.82	< 0.001
Using basic science in practice of medicine	1.78 ± 0.59	2.56 ± 1.01	< 0.001
Diagnosis, management and prevention	2.51 ± 0.50	2.40 ± 0.78	0.43
The social and community issues of healthcare	1.80 ± 0.66	2.18 ± 0.86	0.03
Self-awareness, self care and personal growth	2.07 ± 0.53	2.31 ± 0.84	0.11
Lifelong learning	2.60 ± 0.58	2.01 ± 1.04	0.005
Moral reasoning and clinical ethics	2.33 ± 0.82	2.07 ± 0.91	0.12
Problem solving	2.47 ± 0.75	2.18 ± 0.80	0.08

Data(Mean ± SD) a from 45 Interns and b from 45 direct observation of researchers based on 1335 visits in 9 disciplines- Imam Reza Academic Medical Center- Medical Faculty- Tabriz University of Medical Sciences- Iran

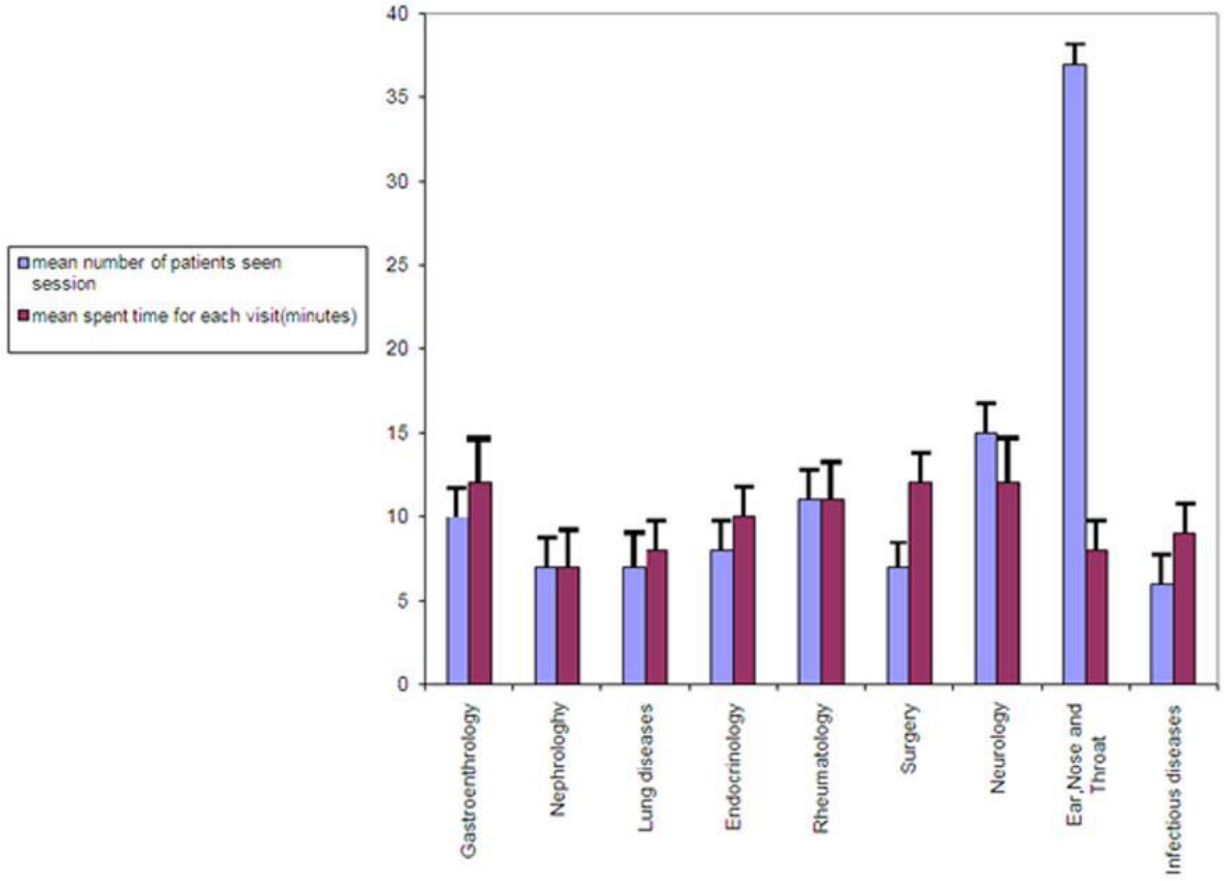

Figure 1. The mean number of patients seen per session and the mean time (minutes) spent for every visit across 9 clinics in Imam Reza Academic Medical Center, Tabriz-Iran-2010.

Based on the data from 10293 visits done and recorded in 9 visit rooms by 46 academic teachers of 9 disciplines - Imam Reza Academic Medical Center- Medical Faculty- Tabriz University of Medical Sciences- Iran

Appendix: Research Questionaire

Dear student,

Please take a few minutes to evaluate your current ambulatory care program and assess how much ambulatory teaching in this clinic helped you to acquire the abilities which have been listed in this questionnaire (questions 1 to 9) on your points of view in order to develop new effective and efficient program. Please note that your response is confidential and that any data summaries made available will not include your individual responses. Please give us your opinion related to the following abilities using the scale from 1 to 5.

Thank you for completing this questionnaire.

Age: _____ Sex: _____ Educational department: _____ The name of out –patient Clinic: _____

Row	Attending this out-patient clinic helped me to acquire the **ability** of :	Strongly disagree **1**	Disagree **2**	Neither agree nor disagree **3**	Agree **4**	Strongly Agree **5**
1	**Effective communication**					
2	**Basic clinical skills**					
3	**Using basic science in practice of medicine**					
4	**Diagnosis, management and prevention**					
5	**The social and community issues of healthcare**					
6	**Self-awareness, self care and personal growth**					
7	**Lifelong learning**					
8	**Moral reasoning and clinical ethics**					
9	**Problem solving**					

If you would please let us know other abilities you learnt in this clinic (specify): _____

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