

INCREASING THE NUMBER OF SELECTED HOSPITAL WARDS FOR MEDICAL INTERNS AS A USEFUL EDUCATIONAL METHOD IN IRANIAN MEDICAL SCHOOLS: A CASE STUDY OF AHVAZ JUNDISHAPUR UNIVERSITY

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ABSTRACT

Objective: Creating a scientific and practical curriculum is the most important step in medical students' training and planning of wards posting during the internship period has a very high impact in this creation process. The aim of this case study is to assess the opinion of medical interns of Ahvaz Jundishapur University of medical sciences, towards increasing the number of wards in hospitals.

Material and Method: In this case study, 75 medical interns expressed their views on the reform by completing a questionnaire containing 5 multiple choice questions about the importance of different wards of the internship program. Frequency of responses was calculated by direct counting.

Results: Majority of the students agreed with increasing the number of internship wards nevertheless decreasing their time. They scored the importance of wards which they did not pass during internship, as medium, low or without importance. General information about interns' hospital wards in Iran also represented.

Conclusion: In most Iranian medical schools, selectable internship wards resulted in better learning of knowledge and skills in favorite wards and in subjects, such that they are eager to continue their future study and job. Although the interns had different ideas about the ideal time length of their educational wards, they generally agreed on increasing the number of wards and the reduction in the time allocated to one-month (minor) wards.

Keywords: Medical student, education, internship, clinical skills.

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İRAN TIP FAKÜLTELERİNDE FAYDALI BİR EĞİTİM YÖNTEMİ OLARAK TIBBİ İNTÖRNLER İÇİN SEÇİLEN HASTANE SERVİSLERİNİN SAYISININ ARTIRILMASI: AHVAZ JUNDİSHAPUR ÜNİVERSİTESİ'NDEN BİR VAKA ÇALIŞMASI

ÖZET

Amaç: Tıp öğrencilerinin eğitiminde en önemli adım bilimsel ve uygulamalı bir müfredat oluşturmaktır ve bu süreçte intörlük döneminde görevlendirilecek servislerin planlanması çok büyük bir etkiye sahiptir. Bu vaka çalışmasının amacı, Ahvaz Jundishapur Tıp Bilimleri Üniversitesi intörlülerinin hastanelerde servis sayısının artırılmasına ilişkin görüşlerini ölçmektir.

Materyal ve Metot: Bu vaka çalışmasında, 75 intörn, intörlük programının farklı servislerinin önemi hakkında 5 çoktan seçmeli soru içeren bir anketi tamamlayarak reform hakkındaki görüşlerini ifade ettiler. Yanıtların sıklığı doğrudan sayarak hesaplanmıştır.

Bulgular: Öğrencilerin büyük çoğunluğu daha kısa süreliğine de olsa intörlük yapacakları servislerinin sayısının artırılmasında hemfikirler. İntörlük sırasında gidemedikleri servislerin önemini orta, düşük veya önemsiz olarak puanladılar. İran'daki intörlülerin hastane servisleri hakkında genel bilgiler de sunulmuştur. İran tıp fakültelerinin çoğunda, seçilebilir staj koşulları, en sevindikleri servislerde ve konularda gelecekteki eğitim ve işlerine devam etmeye istekli olacak şekilde bilgi ve becerilerin daha iyi öğrenilmesiyle sonuçlandı.

Sonuç: İran tıp fakültelerinin çoğunda, seçilebilir intörlük bölümleri, en sevilen servislerde ve konularda, gelecekte istedikleri eğitim ve işlerine uygun olacak şekilde seçildiğinde bilgi ve becerilerin daha iyi öğrenilmesiyle sonuçlandı. İntörlülerin eğitim servislerinin ideal süresi konusunda farklı fikirleri olsa da genellikle servis sayısının artırılmasına ve bir ay ayrılan (minör) servislerin süresinin kısaltılmasında hemfikirler.

Anahtar kelimeler: Tıp öğrencisi, eğitim, intörlük, klinik beceriler.

INTRODUCTION

For a millennia, the training of doctors has taken place in the community under the apprenticeship model. Although Gondishapur University of Medicine was founded at 271, the first new medical school, which would be called Johns Hopkins University School of Medicine, opened in 1893.¹ Over the past 100 years, the main location for medical learning has been the hospital.² From the 1900s to the present, more than a score of reports from educational bodies, infrastructures and professional task forces have condemned medical education for emphasizing scientific knowledge over biological understanding, practical skill, clinical reasoning, and the development of compassion, character, and integrity.³ Presently, medical educators have been bombarded with teaching requirements. A timely and cohesive curriculum reform under these circumstances is an important and a difficult proposition at the medical schools.⁴ During medical education, bedside teaching is a critical fundamental of medical education and one of the most effective ways of learning clinical and communication skills.⁵

Generally in Iran, the Ministry of Health organizes planning, supervision and monitoring of health education activities in private and public centers as well as in medical schools of Iran.⁶ The medical undergraduate education period takes a minimum of 7 years traditionally and includes “basic sciences”

period, “physiopathology” period (theoretical aspects of different common diseases) “extern or stager” period (learning practical aspects of diseases at the patient’s bed), and “internship” period in which students are responsible for diagnosis, treatment and management of their patients in the hospitals. The last second ones contained the main part of bedside teaching in the mentioned schools.

The total time of internship in Iran is 18 months and the most important wards include internal medicine, pediatrics, surgery and obstetrics (as major wards spent 2-3 months) and also emergency, cardiology, social medicine, infectious diseases, psychiatry wards as 1 month wards are recommended in all universities. Depending on the condition and planning of medical schools, some other wards have been selected for 15 days to one month presenting during internship education. In the medical school of Ahvaz Jundishapur University of Medical Sciences, except the dermatology ward that is a one-month mandatory ward, only 3 minor wards including neurology, ophthalmology and ear, nose, throat (ENT) were presented. In this manner, although medical students passed other minor wards during the extern period, they generally had not passed majority of them in the time of internship and did not have practical experience in these subjects of medicine. It should be considered that our reform method had been planned for 15 days presentation of all minor wards, to manage student’s time for passing more wards.

The aim of this study was to analyze medical students' opinion about increasing the wards of internship in the medical school of Ahvaz Jundishapur University of Medical Sciences.

MATERIAL AND METHOD

This study commenced from Sep. 2012 for medical students that passed the national pre-internship exam, in educational hospitals of Ahvaz Jundishapur University of medical sciences including Imam Khomeini, Golestan, Aboozar, Razi and Shafa hospitals and was approved by the medical teaching affairs of the medical faculty of this University. In the beginning of internship, depending on the medical scores of students, they were allowed to select 4 wards of neurology, orthopedics; ophthalmology, ENT; neurosurgery and anesthesiology wards for 15 days education through the selection of 2 out of 3 lines. Parallely medical school asked the educational staff of those wards to concentrate on teaching the most important items for 15 days. The major wards (internal medicine, pediatrics, surgery and obstetrics) and other mandatory wards (emergency, cardiology, social medicine, infectious diseases, psychiatry and dermatology) were presented based on previous planning. Table 1 presents the old and new programs. Nine months after the construction of a new program, a questionnaire has represented 75 interns (21 passed old and 54 passed new internship programs) and all the questionnaires were filled and submitted to the researcher (response rate was 100%). The validity of the questionnaire was verified by some expert teachers in education and research, and its reliability was calculated: Cronbach's Alpha= 0.59. The participants in this research were asked to express the importance of different wards of the internship program by answering five multi-choice questions, based on the five-point Likert scale from strongly opposed (score 1) to strongly agree (score 5).

The frequency of answers was obtained by direct counting. The interns were not obliged to answer the questionnaire and write their names, hence there were no ethical conflicts.

RESULTS

In the new program, students passed 2 selections of 3, so they did not experience 2 wards of 6. For the analysis of students' comments about the importance of neglected wards, five questions were asked, and answers to the first four questions are shown in Table 2 while the answer to the fifth question (How long is required for minor wards?) is given in Table 3.

Table 1. Duration of educational wards before and after reform in Ahvaz medical school

Wards	Duration		Type of presentation
	Before (month)	After (month)	
Neurology	1	0.5	Selection 1*
Orthopedics	-	0.5	
ENT	1	0.5	Selection 2*
Ophthalmology	1	0.5	
Neurosurgery	-	0.5	Selection 3*
Anesthesiology	-	0.5	

* Students should select 2 of three selections. ENT: ear, nose, throat

Table 2. Answers of students to questions 1-4

Question	Students group (total number)	Very low	Low and Medium	High and very high
		No (%)	No (%)	No (%)
How do you score the necessity of wards which you did not pass during internship?	New program (54)	1 (5)	6 (28)	14 (67)
	Old program (21)	4 (6)	28 (53)	22 (41)
How do you agree with decreasing the time of minor wards to attend more wards?	New program (54)	16 (30)	10 (18)	28 (52)
	Old program (21)	3 (14)	5 (24)	13 (62)
How do you agree with decreasing the time of dermatology ward from one month?	New program (54)	36 (67)	10 (19)	8 (14)
	Old program (21)	6 (29)	6 (27)	9 (43)
How do you agree with the addition of urology ward in the curriculum?	New program (54)	15 (28)	20 (37)	19 (35)
	Old program (21)	5 (24)	10 (48)	6 (28)

Table 3. Opinions of students about necessity time for minor wards (question 5).

	Old program			New program		
	1 month No. (%)	15 days No. (%)	No need No. (%)	1 month No. (%)	15 days No. (%)	No need No. (%)
Orthopedics	7(33)	12(57)	2(10)	10(19)	36(67)	8(15)
Neurosurgery	2(10)	14(67)	5(24)	1(2)	25(46)	28(52)
Anesthetics	2(10)	14(67)	5(24)	12(22)	25(46)	16(30)
Ophthalmology	6(29)	15(71)	0(-)	8(15)	39(72)	6(11)
ENT (Ear, nose, throat)	10(48)	11(52)	0(-)	37(69)	17(31)	0(-)
Neurology	8(38)	12(57)	1(5)	18(33)	34(63)	2(4)
Dermatology	9(43)	12(57)	0(-)	39(79)	15(28)	0(-)

DISCUSSION

In the recent decade, with the aim of developing problem-based and learner-centered education, Iran's Ministry of Health and Medical Education has been working on integrating the curriculum of basic science program with that of the clinical program. This has been called "Educational Reform" which has been implemented in most Iranian schools of medicine involving all aspects of their medical education in order to integrate medical theories of medicine with clinical points.⁷ In the basic science program, organ-

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Table 4. Plan of internship wards in some medical schools of Iran

Medical school	Tehran	Shahid Beheshti#	Mashhad	Shiraz	Isfahan	Tabriz	Arak	Booshehr	Birjand	Kashan	Qom	Yasouj	Ahvaz
Internal medicine	M4	M4	M3	M2	M3	M3	M3	M2	M3	M3	M4	M2.5	M3
Pediatrics	M3	M3	M3	M2	M3	M3	M3	M2	M3	M3	M3	M3	M3
Surgery	M3*	M2	M2	M2	M2	M2	M2	M2	M2	M2‡	M3*	M1	M2
Obstetrics	M2	M2	M†	M1	M2	M†	M2	M2	M2	M2	M2	M2	M2
Emergency	M1	M1	M1	M2	M1	M1	M1	M1	M1	M1	-	M1	M1
Cardiology	S1	M1	M1	S1	M1	M1	M1	M1	M1	M1	S1	M.5	M1
Social medicine	M1	M1.5	M1	M1	M1	M1	M1	M1	M1	M1	M1	M1	M1
Infectious disease	S1	M1	M1	S1	M1	M1	M1	M1	M1	M1	S1	M1	M1
Psychiatry	S1	M1	M1	M1	M1	M1	M1	M1	M1	M1	S1	S1	M1
Dermatology	S1	M1	S1	S1	S1	M.5	M.5	S1	M.5	M.5	S1	S.5	M1
Neurology	S1	-	M1	S1	S1	M1	M.5	S1	-	-	S1	S1	S.5
ENT	S1	M.5	S†	S1	M1	M1	M.5	S1	M.5	M.5	S1	S1	S.5
Ophthalmology	S1	M.5	S1	S1	M1	-	M.5	S1	M.5	M.5	S1	S.5	S.5
Orthopedics	M*	M1	S1	-	S.5	M.5	M.5	S1	M.5	M.5	M*	M.5	S.5
Urology	M*	-	S1	-	S.5	-	M.5	S1	M.5	M.5	M*	M.5	M*
Neurosurgery	-	-	-	-	S.5	-	M.5	S1	-	-	-	M.5	S.5
Anesthesiology	-	-	-	S1	-	M.5	M.5	M1	M.5	M.5	-	M.5	S.5
Plastic surgery	-	-	-	S1	-	-	-	-	-	-	-	-	-
Outpatient	-	-	-	S1	-	-	-	-	-	-	-	-	-
Burn	-	-	-	S1	-	-	-	-	-	-	-	-	-
Poisoning	-	M1	-	-	S1	-	-	-	-	-	-	-	-
Rehabilitation	-	-	-	-	-	M†	-	-	-	-	-	S.5	-
Nutrition	-	-	-	-	-	-	-	-	-	-	-	S.5	-

Ligand: M: Mandatory, S: selectively, Numbers: duration of wards (month), ENT: Ear, throat, nose.
 *: Surgery including orthopedics and urology, #: 2 months selection from 25 selective courses, †: different duration for male and female students, ‡: during surgery ward.

based education is the main purpose of the curriculum design, and this is adopted in many medical schools. In organ-based education, Embryology, Anatomy, Histology and Physiology of each body organ, including organs of the central nervous system, respiratory, circulation, endocrine, digestive, sensory, musculoskeletal, and genitourinary, are taught in a single collection. In addition, medical students attend clinical education in basic sciences while undergoing basic science education. For example, while studying anatomy, the students go to the orthopedics ward, or during theoretical classes on infectious diseases, they observe patients with infectious diseases admitted to the infectious ward or the dermatology ward.

During the physiopathology and externship, courses have been added to increase the clinical and research skills of students. These courses vary from one university to another, but they mainly include:

Evidence-Based Medicine (EBM), Computer Science, Research Methodology, Rehabilitation Medicine, Geriatrics, etc.

The main reform in the internship program is the inclusion of more hospital wards to be chosen by the students. Table 4 showed that medical schools of Iran's Universities of medical sciences presented different internship wards based on the condition of educational wards in hospitals and the experiences of Universities. Generally, they present some mandatory wards as obligated by the Ministry of medical sciences, and some minor wards that in some schools are mandatory but selective in others. Out of 13 medical schools that we analyzed, 9 schools have selective wards and 8 schools have wards presenting in 15 days. The common mandatory wards are internal medicine, pediatrics, surgery, obstetrics, emergency and social medicine; while other wards in some schools are mandatory and in others are selective. These wards include cardiology, infectious diseases, psychiatry, dermatology, neurology, ophthalmology, ENT, orthopedics, urology, neurosurgery, anesthesiology, plastic surgery, outpatients, burn, poisoning, rehabilitation and nutrition wards. This information showed that a vast majority of medical schools preferred to collect a condition for the selection of internship wards by medical students, so students learn better and obtain more knowledge and skills in favorite wards and in subjects that they are eager to continue their future study and work. The graduated medical students may work as general physicians in hospitals and clinics and may continue their study in a medical subspecialty. A general physician should have general medical information to manage emergency, common disorders and also diagnose and refer other disorders. These information are necessary for each sub specialized doctor, therefore, medical students must learn necessary skills for future job. Educational managers of medical schools and educational staff of medical wards have to present the necessary information of medical students and also more variable useful information based on school facilities and interest of students.

Future studies, which should be supported by the Ministry of Health, need to deal with needs analysis of all the unnecessary wards of the country's medical schools with the goal of selecting the most useful ones to be offered at all universities. Finally, although increasing the number of elective wards for teaching medical interns provides them with more skills and information for their future career as young physicians, it shortens the length of some minor

wards. Therefore, coordination should be made so that the essential parts of the curriculum (the must-learns) are covered in these wards.

CONCLUSION

This study designed to analyze medical interns' opinions about increasing the number of wards in hospital. Although the interns had different ideas about the ideal time length of their educational wards, they generally agreed on increasing the number of wards and the reduction in the time allocated to one-month (minor) wards.

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REFERENCES

1. Fishbein RH. Origins of modern premedical education. *Acad Med* 2001; 76: 425-429.
2. Thistlethwaite JE, Kidd MR and Hudson JN. General practice: a leading provider of medical student education in the 21st century? *MJA* 2007; 187: 124-128.
3. Cook M, Irby DM, Sullivan W and Ludmerer KM. American medical education 100 years after the flexner report. *N Engl J Med* 2006; 355: 1339-1344.
4. Batalden P, Leach D, Swing S, Dreyfus H and Dreyfus S. General competencies and accreditation in graduate medical education. *Health Aff* 2002; 21: 103-111.
5. Salam A, Siraj HH, Mohamad N, Das S and Rabeya Y. Bedside teaching in undergraduate medical education: issues, strategies, and new models for better preparation of new generation doctors. *Iran J Med Sci* 2011; 36: 1-6.
6. Shah SR, Ahmed R, Munir M, et al. Medical Education System in South Asia and its Consequences on our Health: A Review. *J Clin Diagn Res* 2017; 11: JE01-JE04.
7. Azizi F. Medical Education in the Islamic Republic of Iran: Three decades of success. *Iranian J Publ Health* 2009; 38 (Suppl 1): 19-26.