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Studying the educational needs of general medical graduates in selected areas

Background: Despite the large amount of information that general practitioners need to receive, as well as their time limitation to be prepared as doctors entering the treatment fields, it is necessary to prioritize a learning formulation and design more educational programs for them. This study aims to determine the most important priorities of general medical graduates in selected fields.

Methods: This cross-sectional descriptive study was performed on 400 general practitioners working at least 3 years since their onset of clinical practice as general practitioner. They were selected by random sampling. Data were collected through demographic variables and valid and reliable researcher-made questionnaires in four domains including internal disease (18 items), neurological diseases (7 items), pediatrics (26 items) and emergency medicine (20 items). Data were analyzed by SPSS software using descriptive statistics and chi-square test.

Results: Three primary priorities in internal medicine were blood pressure (76%), diabetes (68.3%) and hyperlipidemia (61.5%). In pediatric the priorities were: fever (72%), gastroenteritis (58%) and pneumonia (59.8%), while in neurology they were: headache (78.3%), dizziness (54.8%), and limb weakness (27.3%). As well as in emergency medicine blood pressure (77%), asthma attack (46%), and trauma (41%) were considered as the priorities. There were no significant differences in education priorities in some internal and pediatric areas including diabetes, fever, and Gastroenteritis by sex ($p > 0.05$). There was a significant difference in the three educational priorities in emergency medicine area by employment duration ($p < 0.05$).

Conclusion: Appropriate needs assessment and designing educational programs tailored to the needs of general practitioners in order to improve their level of science, so that they could consequently have better performance by prioritizing appropriate health care.

Keywords: Educational Needs, Graduates, General Physicians

دراسة الاحتياجات التعليمية لخريجي الطب العام في مناطق محددة

الخلفية: على الرغم من الكم الهائل من المعلومات التي يحتاجها الممارسون العامون، وكذلك الحد الزمني لإعداد الأطباء لدخول مجال العلاج، من الضروري إعطاء الأولوية للحاجة إلى التعلم في صياغة وتصميم المزيد من البرامج التعليمية. تهدف هذه الدراسة إلى تحديد أهم أولويات خريجي الطب العام في مجالات محددة.

الطريقة: تم إجراء هذه الدراسة الوصفية المستعرضة على 400 من الممارسين العاميين الذين عملوا على الأقل 3 سنوات منذ بداية ممارستهم كممارسين عام واختبروا بأخذ عينات عشوائية. تم جمع البيانات من خلال المتغيرات الديموغرافية ومن خلال استبيان صحيح وموثوق به قام بإعداده الباحث في أربعة مجالات بما في ذلك الأمراض الداخلية (18 بند)، والأمراض العصبية (7 بنود)، وطب الأطفال (26 بند) وطب الطوارئ (20 بند). تم تحليل البيانات بواسطة برنامج SPSS باستخدام إحصائيات وصفية واختبار chi-square.

النتائج: كانت ثلاث أولويات أساسية في الطب الباطني هي ضغط الدم (76%) والسكري (68.3%) وفرط شحميات الدم (61.5%)، وفي طب الأطفال الحمى (72%) والتهاب المعدة والأمعاء (58%) والتهاب الرئوي (59.8%)، وفي طب الطوارئ الصداع (78.3%) والدوخة (54.8%) وضعف الأطراف (27.3%)، وفي طب الطوارئ ضغط الدم (77%) ونوبة الربو (46%) والصدمة النفسية (41%)، لم تكن هناك فروق ذات دلالة إحصائية في أولويات التعليم في بعض المناطق الداخلية وطب الأطفال بما في ذلك مرض السكري والحمى والتهاب المعدة والأمعاء حسب الجنس ($P > 0.05$). كان هناك اختلاف كبير في الأولويات التعليمية الثلاثة في مجال طب الطوارئ حسب مدة العمل ($P < 0.05$).

الخلاصة: ينبغي إعطاء الأولوية لتقييم الاحتياجات المناسبة وتصميم البرامج التعليمية المصممة خصيصاً لاحتياجات الممارسين العاميين من أجل تحسين المستوى العلمي ومن ثم تحسين الأداء من أجل توفير خدمات الرعاية الصحية المناسبة.

الكلمات المفتاحية: الاحتياجات التعليمية، الخريجين، الأطباء العاميين

بررسی نیازهای آموزشی دانش آموختگان پزشکی عمومی در حیطه های منتخب

زمینه و هدف: با وجود حجم زیاد اطلاعاتی که باید پزشکان عمومی کسب کنند و همچنین محدودیت زمانی برای آماده شدن پزشکان برای ورود به حیطه درمان، لازم است اولویت بندی ضرورت های یادگیری در تدوین و طراحی برنامه های آموزشی بیش تر مورد توجه قرار گیرد. این مطالعه به تعیین مهمترین اولویت های دانش آموختگان پزشکی عمومی در حیطه های منتخب می پردازد.

روش: این مطالعه توصیفی مقطعی (1395) بر روی 400 نفر از پزشکان عمومی که حداقل 3 سال از شروع کار بالینی آنها بعنوان پزشک عمومی گذشته بود و به صورت نمونه گیری تصادفی انتخاب شدند، انجام گرفت. داده ها از طریق متغیرهای جمعیت شناختی و پرسشنامه محقق ساخته روا و پایا در چهار حیطه داخلی (18 گویه)، بیماری های اعصاب (7 گویه)، اطفال (26 گویه) و طب اورژانس (20 گویه) جمع آوری گردید. اطلاعات توسط نرم افزار SPSS با استفاده از شاخص های توصیفی و تست کای-اسکوئر ($p < 0.05$) تجزیه و تحلیل شدند.

یافته ها: سه اولویت اول آموزشی در حیطه های داخلی، فشارخون (76 درصد)، دیابت (68.3 درصد) و هیپرلیپیدمی (61.5 درصد) در حیطه اطفال تب (72 درصد)، گاستروانتریت (58 درصد) و پنومونی (59.8 درصد)، در حیطه بیماری های اعصاب سردرد (78.3 درصد)، سرگیجه (54.8 درصد) و ضعف اندام (27.3 درصد) و در حیطه طب اورژانس فشارخون (77 درصد)، حمله آسم (46 درصد) و تروما (41 درصد) بود. اولویت های آموزشی در برخی از حیطه های داخلی و اطفال شامل دیابت، تب و انتروگاستریک بر حسب جنس تفاوت معناداری مشاهده نگردید ($p > 0.05$). در حیطه طب اورژانس در سه اولویت اول آموزشی بر حسب سنوات اشتغال تفاوت معنی داری وجود داشت ($p < 0.05$).

نتیجه گیری: نیاز سنجی مناسب و طراحی برنامه های آموزشی متناسب با نیاز پزشکان عمومی در جهت بهبود سطح علمی و به دنبال آن کارایی بهتر به منظور ارائه خدمات درمانی مناسبی در اولویت قرار گیرد.

واژه های کلیدی: نیازهای آموزشی، دانش آموختگان، پزشکان عمومی

منتخب شعبوں میں جنرل فزیشنیز کی ضرورتوں کا جائزہ

بیک گراؤنڈ: جنرل فزیشنیز کا نصاب کافی لمبا چوڑا ہوتا ہے اور ان تمام معلومات کو حاصل کرنے کے لئے وقت بھی کم ہوتا ہے، کیونکہ بہرحال فارغ التحصیل ہونے کے بعد انہیں منتخب شعبوں میں کام کرنا پڑتا ہے۔ اس پروگرام کو مد نظر رکھتے ہوئے جنرل فزیشنیز کے نصاب میں ترجیحی بنیادوں پر تعلیمی مواد کی تدوین ضروری ہے۔ اس تحقیق میں مختلف طبی شعبوں کی ضرورت کے پیش نظر اہم ترجیحی بنیادوں پر نصاب کی تدوین کا جائزہ لیا گیا ہے۔

روش: یہ تحقیق دوہزار پندرہ میں انجام دی گئی تھی اس میں چار سو جنرل فزیشنیز نے حصہ لیا تھا جو فارغ التحصیل ہونے کے بعد کم از کم تین سال کا کلینیکل تجربہ رکھتے تھے۔ انہیں رینڈم طریقے سے منتخب کیا گیا، تحقیق میں شریک ڈاکٹروں کو سوالنامہ دیا گیا جس میں ڈیموگرافک کے سوالات بھی تھے، انٹرنل میڈیسن کے چار موضوعات، نفسیاتی بیماریاں، پیڈیاٹرکس اور ایمرجنسی میڈیسن کے بارے میں سوالات تھے۔ ڈیٹا کا تجزیہ ایس پی ایس اور جی اسکوائر ٹسٹ سے کیا گیا۔

نتیجے: جنرل فزیشنیز کے لئے سب سے پہلی ترجیحات میں بلڈ پریشر، ذیابیطس، ہائپر لیڈمی، چکر آنا، اور عام جسمانی کمزوری کے موضوعات رکھے گئے تھے۔ ایمرجنسی روم میں بلڈ پریشر، دمہ کا دورہ، ٹراوما کو ترجیح دی گئی تھی۔ بعض طبی موضوعات جیسے انٹرنل میڈیسن، ذیابیطس اور پیڈیاٹرکس، فیور، انٹروگیسٹرک کے موضوعات میں جنسیت کے لحاظ سے کوئی خاص فرق دیکھنے میں نہیں آیا۔ ایمرجنسی میڈیسن میں تین تعلیمی ترجیحی بنیادوں پر عمر کے زمرے میں خاصہ فرق دیکھا گیا۔

سفرارش: جنرل فزیشنیز کی ضرورت کے مطابق ان کے لئے تعلیمی نصاب بنایا جائے تاکہ وہ عوام کو بہتر طبی خدمات پیش کرسکیں۔

کلیدی الفاظ: تعلیمی ضرورتیں، فارغ التحصیل، جنرل فزیشنیز

INTRODUCTION

Given the advances and rapid changes in the field of medical science, there is a need for new ways to provide more appropriate medical cares. One of the main ways to cope with daily changes in medical profession is to focus on the ability of the expert professionals to make new progress. Continuing education is a proven way for preserving doctors' knowledge, skills, and attitudes in providing health care services to patients (1). Also continuing education is necessary for all post-graduates that aim at maintaining acquired skills and improving their quality and quantity, as well as learning new academic content and skills help them to provide higher quality community health care services (2). General practitioners play a major role in providing health care services as the first level in a health system. The large amount of information general practitioners need to acquire on one hand, and the time limitation for preparing doctors to enter the therapeutic area on the other hand are the main reasons for prioritizing a need for a formulation-based learning and designing educational program (3).

To provide new services in health domain, it is necessary to demarcate the training needs of the service providers (2). The provision of educational program, regardless of the educational needs, and the careful analysis of needs and prioritizations, will lead to an unsuited educational program; however, this obviously will increase the health costs and does not improve the learners' level of knowledge, skills and motivation (4). Effective educational programs require careful and accurate planning. The first step in educational planning is to assess the needs and demands of learners. In fact, need assessment is an important tool in designing, developing, and evaluating educational programs. (1,5,6)

Identifying educational priorities helps planners to prevent losing main capitalizations and resources. More emphasis and consideration in training these priorities will increase the effectiveness of the program and reduce the risks of threatening the community due to the inadequate physicians' ability. Due to the fact that many patients are referred to doctors in the field of internal medicine, pediatrics, emergency medicine and neurology, this study aims to determine the most important priorities of general medical graduates in the field of internal medicine, pediatrics, medical emergencies, and neurological diseases.

METHODS

This research is a cross-sectional descriptive study including two stages of identifying and prioritizing educational needs. The population included graduate general practitioners who had at least 3 years of clinical practice as a general practitioner in health care centers and participated in the study voluntarily and were randomly selected. Excluded criteria was, not completed questionnaires. The sample size was calculated using Cochran's formula with $\alpha = 5\%$ $p = 50$ and $d = 5\%$. 384 out of 400 participants were studied. The data gathering tool was a researcher-made questionnaire. Also this study considered reviewing on the Ministry of Health's and other Iranian medical universities' existing documentations on general practitioners' continuing

educational programs, as well as international associations such as the World Federation of Medical Education (WFME) and Medical education databases have been focused on. After discussing in several group discussions, researchers of the present study have categorized and edited items related to internal, pediatric, neurological and epidemiological areas.

In the next stage, based on the results of the first part of the study, a questionnaire was prepared and the necessity, relevance and importance of each of the selected topics were assessed.

The first part of the questionnaire consisted of socio-demographic information including questions about age, gender, length of employment, and place of employment (private clinics, health centers, public clinics, hospital emergencies). The second part consisted of 71 items in four areas, internal (18 items), neurological diseases (7 items), pediatrics (26 items) and emergency medicine (20 items).

Assigning the scores of the preferred priority in each area was based on a 3-point Likert scale from the highest priority and the medium priority to the lowest priority. Referring to the education department of the university, participants were randomly selected from continuing education programs of the physician's list. After attending in one selected program, the sufficient justification of the goals of study and details on fulfillments of the questionnaire were announced to participants. The questionnaires distributed among doctors and data gathering performed based on face to face interview. Also, for ethical reasons, it was noted that the information was not individually reported, and in this regard the participants were given reasonable assurance. The validity of the tool was confirmed by sending a questionnaire to 10 medical education specialists and applying their expert opinions. To confirm the reliability, 20 physicians were approved at two rounds during two weeks, and the Cronbach's alpha coefficient was 75%.

The descriptive statistics was expressed in terms of frequency and average, also in form of tables. The relationship between qualitative variables was performed using Chi-square test. Statistical analysis was performed using SPSS software version 11.5 and P value less than 5% was considered statistically significant.

RESULTS

The total number of general practitioners in this study was 400, of which 240 (60%) were male and 160 (40%) were female physicians. Figure (1) shows the first three priority educational priorities from the point of view of physicians in the internal, pediatric, neurological and emergency medicine areas.

Table (1) examines the differentiation of educational priorities in the internal and pediatric fields based on three variables: gender, employment place, and year of employment. The results showed that there were no significant differences in the educational priorities of the internal domain in diabetes according to sex and blood pressure based on the place of employment. Also, there was no significant difference in febrile and enterogastritis by sex in children. In other priorities, there was a significant difference in terms of gender, employment location, and year of employment.

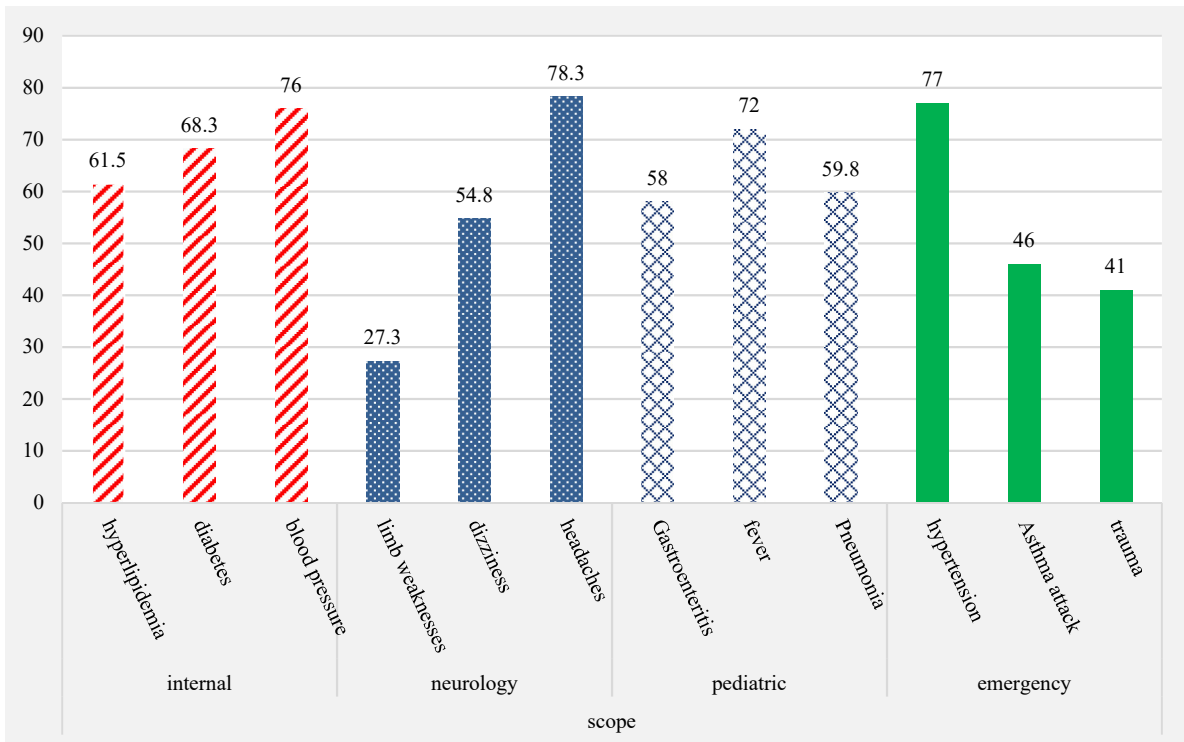


Figure 1. The most important educational priorities to physicians in selected areas

Table 1. Educational priorities in internal and pediatric from the perspective of general practitioners in terms of gender, place of employment and age.

Pediatric area			Internal area			variables	row	
Gastroenteritis %	Pneumonia %	fever %	hyperlipidemia %	diabetes %	blood pressure %			
81.96	78.03	88.66	75.96	82.40	84.66	woman	sex	
82.13	85.2	88.33	83.53	86.86	91.3	man		
0.94	0.003	0.98	0.005	0.064	0.001	P value		
68.86	80	84.44	48	81.33	86.66	emergency	Employment place	
86.15	83.10	90.84	84.66	84.33	88	clinic		
66.66	75.51	81.63	76.44	85	91	Health center		
90.90	92.42	81.33	98.33	100	95	others	Duration of occupation	
0.001	0.032	0.004	0.001	0.019	0.34	P value		
78	86	90	82	82	90	10>		
78	78	85	75	84	86	10-20	3	
91	87	93	80	85	92	20<		
0	0.007	0.002	0.001	0.036	0.042	P value		

Table 2 examines the differences in educational priorities in neurological and emergency diseases in terms of three variables: sex, occupation, and year of employment. The results showed that educational priorities in headache based on the year of employment and headache, dizziness, and limb weakness based on place of employment are significant. There were significant differences in three

priority areas of education based on year of employment.

DISCUSSION

In order to improve the level of efficiency and effectiveness of all training programs, needs assessment should be prioritized. Before the actual training takes place, the training manager must determine who, what, when, where,

Table 2. Educational priorities in neurological and emergency areas from the perspective of general practitioners in terms of gender, place of employment and age

emergency		neurological				variables	row
Trauma %	Asthma attack %	Hypertension %	limb weaknesses %	Dizziness %	Headaches %		
71.01	71.43	86.95	71.84	81.36	89.02	Woman	Sex
72.94	77.68	96.05	70.15	80.47	90.65	Man	
0.475	0.017	0.011	0.43	0.70	0.43	P value	
89.63	74.81	83.70	77.03	85.92	93.33	Emergency	Employment place
69.01	73.71	90.61	71.48	82.63	91.31	Clinic	
63.26	74.15	89.79	58.50	62.58	76.19	Health center	
96.97	96.97	95.45	77.22	87.88	96.97	Others	P value
0.00	0.001	0.08	0.00	0.00	0.00		
77	76.6	88	64	78	85	10>	Duration of occupation
71	61	87	67	80	89	10-20	
70	80	95	67	84	94	20<	
0.05	0.019	0.008	0.18	0.16	0.017	P value	

why, and how to train. On the other hand, in the current education system, it is necessary to consider the economic aspects and the rational use of human resources in order to identify the training needs and demarcate the appropriate and modern training priorities and methods in the continuing education programs to make the best possible use of the limited resources (7).

Considering that many patients are referred to physicians for internal medicine, pediatrics, neurological and emergency diseases, this study identifies the most important priorities of general practitioners in internal medicine, pediatrics, neurological and emergency diseases.

Over the past years, various studies have been carried out to determine the educational priorities of general practitioners in order to enhance and target the educational programs. In almost all of these studies, the priorities under consideration of different areas are generally expressed; however none of them specifically set priorities in one or more specific areas. For example, in a study conducted in 2009 by Tehran University of Medical Sciences, priorities which were generally categorized into 5 axes of skin diseases, poisonings, emergencies, forensic medicine and clinical pharmacology and did not specifically address items in each axis. (8) Also, in the study by Shirazi, the priorities of the 10 axes were generally evaluated and expressed in general. (9) In this study, in order to promote and target the educational programs for general practitioners, who are the first level of treatment for patients in various therapeutic areas, the educational priorities in the four main domains including internal diseases, neurological diseases, emergency medicine, and pediatric diseases were examined from the point of view of general practitioners.

Results in the field of internal diseases showed that the three educational priorities in this area were hypertension, diabetes and hyperlipidemia.

There was a significant difference in educational priorities in the domains of internal diseases in hypertension by sex and

duration of occupation and in diabetes by duration of occupation and occupation place, and in hyperlipidemia by all three variables.

The results of this study were in agreement with those of Shakornia et al. In the study of Shokrnia et al. (2004), 300 general practitioners of Khuzestan province were assigned to determine their educational needs (10). The results showed that from the perspective of general practitioners, internal medicine was one of the high priority areas. Among the internal disease group, hypertension was one of the three educational priorities.

In the neurological diseases the first three educational priorities were headache, dizziness and limb weakness, respectively. There was a significant difference in headaches by duration of occupation and in headaches, dizziness, and limb weaknesses by place of occupation.

The results of this study are in line with the study of Yamani et al. (11) with the aim of evaluating the learning minimums of general practitioner working in private and public sectors of Isfahan University of Medical Sciences. Yamani also cited headaches and dizziness as educational priorities from the perspective of general practitioners. He also cited these priorities as cases that patients typically refer to the first level of health care services such as GPs, urban and rural health centers. However, in our setting, medical students are less likely to encounter such cases in specialized and sub-specialty wards of educational hospitals, since they receive most of their education during general medical educational curriculum.

Results in the field of emergency medicine showed that the top three training priorities for general practitioners were hypertension, asthma attack and trauma. There was a significant difference in blood pressure and asthma attack by sex and year of employment, and in trauma by place of employment and year of employment.

The top three educational priorities in terms of importance for pediatric diseases were fever, gastroenteritis, and

respiratory diseases (pneumonia, bronchiolitis, and croup). There was a significant difference in educational priorities of children with pneumonia by sex, and in fever, pneumonia and gastroenteritis by place of employment and duration of occupational.

The results of the study by Nouhi et al. (12) also showed that from the medical point of view, acute respiratory infection and fever were among the educational priorities. Given the importance and priority of pediatric diseases, it is suggested that these topics should be considered in continuing education. Concerning the effect of gender, employment years, and place of employment on GPs' choice of educational priority, these variables should also be considered in educational planning.

Finally, evaluation of the data obtained in this study shows that appropriate and accurate needs assessment, designing educational programs tailored to the needs of general practitioners, enhancing educational programs to improve the scientific level, improving the efficiency of providing appropriate health cares, and reducing health care costs should

be among the first tasks of every continuing education center.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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