ORIGINAL ARTICLE

The Adaption of Infectious Diseases Curriculum of Medical Students to the Future Career Needs of General Practitioners

Background: One of the most important missions of universities is social responsibility and meeting the needs of society. This study aimed to evaluate the level of adaption of infectious diseases curriculum of medical students to their future career needs.

Method: This cross-sectional study was conducted on all general practitioners working in South Khorasan province who were educated during the period from 2016 to 2020. The inclusion criteria included informed consent of the physicians as well as at least 6 months work experience. The data collection tool was a researcher-made questionnaire with 19 items. The data analysis was conducted by SPSS v. 16 at the significance level of $P < 0.05$.

Results: 106 individuals including 50 (47.2%) women and 56 (52.8%) men with a mean age of 28.79 ± 3.10 years were included. Based on the results, the curriculum contents of the infectious diseases department have been effective in improving and developing the knowledge, attitude, and practive of general practitioners. The mean score of adaptation of all of the headings of infectious diseases curriculum of medical students with their future career needs was high and statistically significant ($P < 0.05$). The mean score of the heading "Common Parasitic Diseases" was close to 1.5, and the adaptation of this heading to the future career needs of general practitioners was average and not statistically significant ($P = 0.107$).

Conclusion: The curriculum content of the subject under study are at an average level in terms of scientific awareness and theoretical knowledge, as well as applied knowledge in the field of determined needs, and it is necessary to provide conditions to transfer and generalize the necessary skills and abilities and theoretical knowledge in this field to practical and applied situations.

Keywords: Adaptation; Education; Curriculum; Career Needs; Communicable Diseases

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تكييف مناهج الأمراض المعدية لطلبة الطب مع الاحتياجات المهنية المستقبلية للأطباء العامين

الخلفية: تعد المسؤولية الاجتماعية وتلبية احتياجات المجتمع من أهم مهام الجامعات، وهدفت هذه الدراسة إلى تقييم مدى ملاءمة مناهج الأمراض المعدية لطلاب الطب مع احتياجاتهم المهنية المستقبلية.

الطريقة: أجريت هذه الدراسة المقطعية على جميع الأطباء العامين العاملين في محافظة جنوب خراسان والذين تلقوا تعليمهم خلال الفترة من ٢٠١٦ إلى ٢٠٢٠. وتضمنت معايير الإدراج الموافقة المستنيرة للأطباء بالإضافة إلى خبرة عمل لا تقل عن ٦ أشهر. وكانت أداة جمع البيانات عبارة عن استبيان أعده الباحث يتكون من ١٩ بندًا. وأُجري تحليل البيانات باستخدام برنامج SPSS الإصدار ١٦ عند مستوى دلالة ($P < 0.05$).

النتائج: تم تضمين ١٠٦ فردًا منهم ٥٠ (٤٧,٢٪) من النساء و ٥٦ (٥٢,٨٪) من الرجال بمتوسط عمر ٢٨,٧٩ ± ٣,١٠ عامًا. بناءً على النتائج، كانت محتويات المناهج الدراسية لقسم الأمراض المعدية فعالة في تحسين وتطوير المعرفة والموقف والممارسة لدى الممارسين العامين. كان متوسط درجة تكييف جميع عناوين مناهج الأمراض المعدية لطلاب الطب مع احتياجاتهم المهنية المستقبلية مرتفعًا وذو دلالة إحصائية ($P < ٠,٠٥$). كان متوسط درجة عنوان "الأمراض الطفيلية الشائعة" قريبًا من ١,٥، وكان تكييف هذا العنوان مع الاحتياجات المهنية المستقبلية للأطباء العامين متوسطًا وغير ذي دلالة إحصائية ($P = 0.107$).

الاستنتاج: إن محتوى المناهج الدراسية في المادة قيد الدراسة متوسط من حيث الوعي العلمي والمعرفة النظرية وكذلك المعرفة التطبيقية في مجال الاحتياجات المحددة، ومن الضروري توفير الظروف لنقل وتعميم المهارات والقدرات والمعرفة النظرية اللازمة في هذا المجال إلى مواقف عملية وتطبيقية.

الكلمات المفتاحية: التكيف؛ التعليم؛ المناهج الدراسية؛ احتياجات المهنة؛ الأمراض المعدية

طبی طلباء کے متعدی امراض کے نصاب کو جنرل پریکٹیشنرز کے مستقبل کے کیریئر کی ضروریات کے مطابق ڈھالنا

پس منظر: یونیورسٹیوں کے اہم ترین مشنوں میں سے ایک سماجی ذمہ داری اور معاشرے کی ضروریات کو پورا کرنا ہے۔ اس مطالعہ کا مقصد میڈیکل طلباء کے ان کے مستقبل کے کیریئر کی ضروریات کے مطابق متعدی امراض کے نصاب کو اپنانے کی سطح کا جائزہ لینا تھا۔

طریقہ: یہ کراس سیکشنل مطالعہ جنوبی خراسان صوبے میں کام کرنے والے تمام جنرل پریکٹیشنرز پر کیا گیا جو ۲۰۱۶ سے ۲۰۲۰ کے دوران تعلیم یافتہ تھے۔ شمولیت کے معیار میں ڈاکٹروں کی باخبر رضامندی کے ساتھ ساتھ کم از کم ۶ ماہ کا کام کا تجربہ بھی شامل تھا۔ ڈیٹا اکٹھا کرنے کا ٹول ۱۹ آئٹمز کے ساتھ محقق کا بنایا ہوا سوالنامہ تھا۔ ڈیٹا کا تجزیہ SPSS v. 16 کے ذریعے $P < ٠,٠٥$ کی اہمیت کی سطح پر کیا گیا۔

نتائج: ۱۰۶ افراد بشمول ۵۰ (۴۷٫۲%) خواتین اور ۵۶ (۵۲٫۸%) مرد جن کی اوسط عمر ۲۸٫۷۹ ± ۳٫۱۰ سال تھی۔ نتائج کی بنیاد پر، متعدی امراض کے شعبہ کے نصابی مواد عام پریکٹیشنرز کے علم، رویہ اور عمل کو بہتر بنانے اور ترقی دینے میں کارگر ثابت ہوئے ہیں۔ میڈیکل طلباء کے ان کے مستقبل کے کیریئر کی ضروریات کے ساتھ متعدی امراض کے نصاب کے تمام عنوانات کی موافقت کا اوسط اسکور زیادہ اور شماریاتی لحاظ سے اہم تھا ($P < ٠,٠٥$)۔ "عام طفیلی امراض" کی سرخی کا اوسط اسکور ۱٫۵ کے قریب تھا، اور اس سرخی کا عمومی پریکٹیشنرز کے مستقبل کی کیریئر کی ضروریات کے لیے موافقت اوسط تھا اور اعداد و شمار کے لحاظ سے اہم نہیں تھا ($P = 0.107$)۔

نتیجہ: زیر مطالعہ مضمون کا نصابی مواد سائنسی آگاہی اور نظریاتی علم کے ساتھ ساتھ متعین ضروریات کے میدان میں اطلاقی علم کے لحاظ سے اوسط درجے پر ہے اور اس شعبے میں ضروری مہارتوں اور صلاحیتوں اور نظریاتی علم کو عملی اور قابل اطلاق حالات میں منتقل کرنے اور عام کرنے کے لیے حالات فراہم کرنا ضروری ہے۔

مطلوبہ الفاظ: موافقت؛ تعلیم؛ نصاب؛ کیریئر کی ضروریات؛ متعدی امراض

انطباق برنامه درسی بیماری های عفونی دانشجویان پزشکی با نیازهای شغلی آینده پزشکان عمومی

زمینه و هدف: مسئولیت‌پذیری اجتماعی و رفع نیازهای جامعه از مهم‌ترین رسالت‌های دانشگاه‌ها می‌باشد. این مطالعه با هدف ارزیابی تطابق برنامه‌های آموزشی دانشجویان پزشکی در مقاطع کارآموزی و کارورزی در بخش عفونی مبتنی بر نیازهای شغلی پزشک عمومی طراحی شد.

روش: مطالعه حاضر، توصیفی تحلیلی است که بر روی تمامی پزشکان عمومی شاغل در استان خراسان جنوبی که در بازه زمانی ۱۳۹۵ تا ۱۳۹۹ دانش‌آموخته شده بودند، انجام شد. شرط ورود به مطالعه، دادن رضایت آگاهانه پزشکان و گذشت حداقل شش ماه از شروع کار آن‌ها بود. ابزار جمع‌آوری اطلاعات، پرسشنامه محقق‌ساخته شامل ۱۹ سؤال بود. داده‌ها وارد نرم‌افزار SPSS v. 16 گردید و در سطح معنی‌داری $P \leq 0.05$ تجزیه و تحلیل شد.

یافته‌ها: ۱۰۶ نفر شامل ۵۰ زن (۴۷/۲٪) و ۵۶ مرد (۵۲/۸٪) با میانگین سنی ۳/۱۰ ± ۲۸/۷۹ سال وارد شدند. محتواهای درسی بخش عفونی از دیدگاه پزشکان عمومی در ارتقا و افزایش دانش، نگرش و عملکرد پزشکان عمومی مؤثر بود. میانگین نمره تمامی سرفصل‌های بخش عفونی با نیازهای شغلی پزشکان عمومی در حد بالا و از لحاظ آماری معنی‌دار بود ($P < 0.05$). میانگین نمره سرفصل "بیماری‌های انگلی شایع" نزدیک به میانگین ۱/۵ بود و انطباق این سرفصل با نیازهای شغلی پزشکان عمومی در حد متوسط گزارش شد و از لحاظ آماری معنی‌دار نبود ($P = 0.107$).

نتیجه‌گیری: محتوای برنامه درسی موضوع مورد مطالعه از نظر آگاهی علمی و دانش نظری و کاربردی در زمینه نیازهای تعیین شده در سطح متوسطی است و لازم است شرایطی فراهم شود تا مهارت ها و دانش نظری لازم در این زمینه به موقعیت های عملی و کاربردی منتقل و تعمیم داده شود.

واژه‌های کلیدی: انطباق، آموزش، کوریکولوم آموزشی، نیازهای شغلی، بیماری‌های عفونی

INTRODUCTION

Nowadays, the educational system and its performance have important roles in responding to the cultural, political, and economic needs of society (1). Considering the importance of the educational system in educating committed and professional people, educational activities should be designed, implemented, and evaluated in the best possible way (2-5). One of the most important missions of universities is social responsibility and meeting the needs of society, which can be evaluated by measuring the suitability of educational goals with educational and occupational needs (6).

The purpose of medical education is to acquire the necessary knowledge, attitudes, and skills for patient care, as well as preparing a field for training professionals so that they can acquire the necessary qualifications for patient care. Therefore, the educational curriculum and its coherence with the needs of the medical community require special attention. The content of the curricula should be appropriate to the relevant goals and tasks in order to be able to play its effective roles (7).

In general, considering its role in the training of physicians and responding to the needs related to the society health, education has become an important issue, especially in the last two decades (8). The need to learn is one of the most important requirements of any educational system in the world, and its evaluation in the educational process is considered important and necessary (9, 10). Educational needs refer to needs that can be solved through education and are placed in the three areas of knowledge, attitude, and practice (11). Therefore, the most basic step for educational planning is to identify educational needs and their prioritization. If educational needs are based on reality, educational programs will also be in harmony with reality and will be effective in solving problems (12).

Today, one of the main concerns of the educational system is the problem of not realizing the goals of the educational program. In order to improve the coherence of the educational curriculum, it should be periodically evaluated and, if necessary, some changes should be applied (13, 14).

One of the most important departments in which medical students face serious challenges in learning educational contents and clinical skills is the infectious diseases department. The information and clinical skills that students learn in this era are directly related to the epidemic of disorders in society. Therefore, revising the curriculum is considered a basis and a necessity for the development of education (15, 16).

Due to the fact that the content of the courses presented in the educational curriculum in the infectious diseases department has a direct effect on the development of general practitioners in the field of their professional and clinical skills, this study aimed to evaluate the level of adaption of infectious diseases curriculum of medical students to the future career needs of general practitioners from their perspective in South Khorasan province, Iran in 2022.

METHODS

Study design and participants

This cross-sectional study was conducted on all general practitioners working in South Khorasan province who were educated during the period from 2016 to 2020. The inclusion criteria included informed consent of the physicians as well as at least 6 months work experience. In this research, the participants were included by census, which were estimated to be 153 individuals. Despite sending multiple invitations to complete the questionnaire for these physicians, finally 106 individuals completed the mentioned questionnaire.

Study tool

The data collection tool was a researcher-made questionnaire consisting of 2 parts. The first part included demographic information, including sex, age, workplace, work experience, and Grade Point Average (GPA). The second part of the questionnaire evaluated the practical application of the headings determined by the Supreme Medical Education Planning Council, Ministry of Health and Medical Education, Islamic Repblic of Iran in 2017, including 19 items that were designed in 19 areas containing the headings determined by the mentioned council. These headings included: the principles of prevention of infectious diseases, the basic principles of laboratory investigations in infectious diseases, the principles of control of hospital-acquired infections and isolation, the rational prescription of antibiotics, the principles of individualized care against infections, common symptoms and complaints in infectious diseases, management of febrile patients and fever without localized symptoms, sepsis and septic shock, management of patients with swollen lymph nodes, management of patients with fever and rash, skin and soft tissue infections, viral and bacterial infections of the gastrointestinal tract, common parasitic infections of the gastrointestinal tract, common infections of the upper respiratory tract, common infections of the lower respiratory tract, hospital-acquired infections, common bacterial diseases, common viral diseases, and common parasitic diseases (17).

The scoring of the questions of this questionnaire was based on a 5-point Likert scale (completely appropriate, appropriate, somewhat appropriate, inappropriate, and completely inappropriate). The frequency of the score of each item in each heading indicated the level of adaptation of that heading with the future career needs of general practitioners.

The validity of the questionnaire was confirmed by applying the opinions of a number of infectious diseases and medical education specialists through using face and content validity methods. The reliability of the questionnaire was also evaluated in a pilot study on 10 individuals (Cronbach's alpha = 0.86).

Statistical analysis

After collecting and entering data in SPSS version 16, descriptive data were presented using mean and Standard Deviation (SD). Then, one-sample t-test, independent t-test, and Pearson correlation coefficient were used to analyze the data at the significance level of $P < 0.05$.

RESULTS

Demographic findings

Based on the results, the mean age of the studied physicians was 28.79 ± 3.10 years, 56 individuals (52.8%) were male,

and 50 individuals (47.2%) were female. Also, the workplace of 36 (34.0%), 16 (15.1%), 37 (34.9%), and 17 (16.0%) individuals were rural center, urban center, hospital, and personal office, respectively. Other demographic information of the studied people is presented in Table 1.

Question 1: How is the effectiveness of the curriculum content of the infectious disease department in three areas (knowledge, attitude, and practice) from the point of view of general practitioners?

According to Table 2, the curriculum contents of the infectious diseases department have been effective in improving and developing the knowledge, attitude, and practive of general practitioners.

Question 2: How is the frequency distribution of the adaption of infectious diseases curriculum of medical students to the future career needs of general practitioners?

According to Table 3, the level of adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners was reported as moderate and high.

Question 3: How much is the adaptation of infectious diseases curriculum of medical students with the future career needs of general practitioners?

According to Table 4, the mean score of adaptation of all of the headings of infectious diseases curriculum of medical students with the future career needs of general practitioners was high and statistically significant ($P < 0.05$). However, the mean score of the heading "Common Parasitic Diseases" was close to 1.5, and the adaptation of this heading to the future career needs of general practitioners was average and not statistically significant ($P = 0.107$).

Question 4: Is there a statistically significant difference between the mean score of adaptation of infectious diseases curriculum of medical students to their future career needs based on sex and workplace?

Table 1. Demographic information of the study individuals

Variable		Mean(SD)
Age (year)		28.79(3.10)
GPA		16.59(0.78)
Work experience (years)		2.81 (1.90)
Variable	**Subgroup**	**Number(Frequency)**
Sex	Male	56(52.8)
	Female	50(47.2)
Workplace	Rural center	36(34)
	Urban center	16(15.1)
	Hospital	37(34.9)
	Personal office	17(16)
Total		**106(0.100)**

Table 2. Frequency distribution of the effectiveness of the curriculum content of the infectious diseases department in three areas (knowledge, attitude, and practice)

Area Heading	Knowledge Number (%)	Attitude Number (%)	Practice Number (%)	Learning area
The principles of prevention of infectious diseases	62 (58.5%)	37 (34.9%)	7 (6.6%)	Knowledge
The basic principles of laboratory investigations in infectious diseases	42 (39.6%)	43 (40.6%)	21 (19.8%)	Knowledge and attitude
The principles of control of hospital-acquired infections and isolation	31 (29.2%)	61 (57.7%)	14 (13.2%)	Attitude
The rational prescription of antibiotics	12 (13.3%)	38 (35.5%)	56 (52.8%)	Practice
The principles of individualized care against infections	44 (41.5%)	42 (39.6%)	20 (18.9%)	Knowledge and attitude
Common symptoms and complaints in infectious diseases	16 (15.1%)	62 (58.5%)	28 (26.4%)	Attitude
Management of febrile patients and fever without localized symptoms	27 (25.5%)	44 (41.5%)	35 (33.0%)	Attitude
Sepsis and septic shock	42 (39.6%)	43 (40.6%)	21 (19.8%)	Knowledge and attitude
Management of patients with swollen lymph nodes	54 (50.9%)	35 (33.0%)	17 (16.0%)	Knowledge
Management of patients with fever and rash	25 (23.6%)	59 (55.7%)	22 (20.8%)	Attitude
Skin and soft tissue infections	34 (32.1%)	46 (43.4%)	26 (24.5%)	Attitude
Viral and bacterial infections of the gastrointestinal tract	17 (16.0%)	47 (44.3%)	42 (39.6%)	Attitude and practice
Common parasitic infections of the gastrointestinal tract	50 (47.2%)	31 (29.2%)	25 (23.6%)	Knowledge
Common infections of the upper respiratory tract	18 (17.0%)	36 (34.0%)	52 (49.1%)	Practice
Common infections of the lower respiratory tract	14 (13.2%)	33 (31.1%)	59 (55.7%)	Practice
Hospital-acquired infections	44 (41.5%)	41 (38.7%)	21 (19.8%)	Knowledge and attitude
Common bacterial diseases	17 (16.0%)	42 (39.6%)	47 (44.3%)	Attitude and practice
Common viral diseases	22 (20.8%)	35 (33.0%)	49 (46.2%)	Practice
Common parasitic diseases	53 (50.0%)	39 (36.8%)	14 (13.2%)	Knowledge

Table 3. Frequency distribution of the adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners

Area Heading	Knowledge Number (%)	Attitude Number (%)	Practice Number (%)	Learning area
The principles of prevention of infectious diseases	28 (26.4%)	67 (63.2%)	11 (10.4%)	Knowledge
The basic principles of laboratory investigations in infectious diseases	20 (19.9%)	62 (58.5%)	24 (22.6%)	Knowledge and attitude
The principles of control of hospital-acquired infections and isolation	28 (26.4%)	55 (51.9%)	23 (21.7%)	Attitude
The rational prescription of antibiotics	8 (7.5%)	50 (47.2%)	48 (45.3%)	Practice
The principles of individualized care against infections	33 (31.1%)	43 (40.6%)	30 (28.3%)	Knowledge and attitude
Common symptoms and complaints in infectious diseases	14 (13.2%)	53 (50.0%)	39 (36.8%)	Attitude
Management of febrile patients and fever without localized symptoms	24 (22.6%)	60 (56.6%)	22 (20.8%)	Attitude
Sepsis and septic shock	37 (34.9%)	51 (48.1%)	18 (17.0%)	Knowledge and attitude
Management of patients with swollen lymph nodes	50 (47.2%)	43 (40.6%)	13 (12.3%)	Knowledge
Management of patients with fever and rash	15 (14.2%)	60 (56.6%)	31 (29.2%)	Attitude
Skin and soft tissue infections	32 (30.2%)	48 (45.3%)	26 (24.5%)	Attitude
Viral and bacterial infections of the gastrointestinal tract	15 (14.2%)	45 (42.5%)	46 (43.4%)	Attitude and practice
Common parasitic infections of the gastrointestinal tract	45 (42.5%)	45 (42.5%)	16 (15.1%)	Knowledge
Common infections of the upper respiratory tract	16 (15.1%)	39 (36.8%)	51 (48.1%)	Practice
Common infections of the lower respiratory tract	10 (9.4%)	37 (34.9%)	59 (55.7%)	Practice
Hospital-acquired infections	28 (26.4%)	58 (54.7%)	20 (18.9%)	Knowledge and attitude
Common bacterial diseases	15 (14.2%)	56 (52.8%)	35 (33.0%)	Attitude and practice
Common viral diseases	14 (13.2%)	51 (48.1%)	41 (38.7%)	Practice
Common parasitic diseases	52 (49.1%)	44 (41.5%)	10 (9.4%)	Knowledge

Table 4. The adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners

Heading	Mean(SD)	P-value
The principles of prevention of infectious diseases	1.83(0.85)	0.0001
The basic principles of laboratory investigations in infectious diseases	2.03(0.64)	0.0001
The principles of control of hospital-acquired infections and isolation	1.95(0.69)	0.0001
The rational prescription of antibiotics	2.37(0.62)	0.0001
The principles of individualized care against infections	1.97(0.77)	0.0001
Common symptoms and complaints in infectious diseases	2.23(0.66)	0.0001
Management of febrile patients and fever without localized symptoms	1.98(0.66)	0.0001
Sepsis and septic shock	1.82(0.70)	0.0001
Management of patients with swollen lymph nodes	1.65(0.69)	0.027
Management of patients with fever and rash	2.15(0.64)	0.0001
Skin and soft tissue infections	1.94(0.74)	0.0001
Viral and bacterial infections of the gastrointestinal tract	2.29(0.70)	0.0001
Common parasitic infections of the gastrointestinal tract	1.72(0.71)	0.0001
Common infections of the upper respiratory tract	2.33(0.72)	0.0001
Common infections of the lower respiratory tract	2.46(0.66)	0.0001
Hospital-acquired infections	1.92(0.67)	0.013
Common bacterial diseases	2.18(0.66)	0.021
Common viral diseases	2.25(0.67)	0.0001
Common parasitic diseases	1.60(0.65)	0.107

According to Table 5, there was no significant difference between the mean score of adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners based on sex and workplace (P >0.05).

Table 5. Comparison of the mean score of adaptation of infectious diseases curriculum of medical students to their future career needs based on sex and workplace

Variable	Subgroup	Mean(SD)	P-value
Sex	Male	2.06(0.37)	0.33
	Female	2.07(0.35)	
Workplace	Rural center	2.01(0.43)	0.74
	Urban center	1.96(0.21)	
	Hospital	2.07(0.37)	
	Personal office	2.07(0.32)	

Question 5: Is there a correlation between the mean score of adaptation of infectious diseases curriculum of medical students to their future career needs with age, work experience, and GPA?

According to Table 6, there was no significant correlation between the mean score of adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners with age, work experience, and GPA (P >0.05).

DISCUSSION

According to the results of the present study, the infectious diseases curriculum of medical students have been effective in promoting and developing the knowledge, attitude, and practice of general practitioners from their point of view. Also, the level of adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners was reported as moderate and high. Compared to the results of the present study, based on a study conducted by Shakurnia et al. (2007), general practitioners declared their most important educational need for the internal diseases course and their least important educational need for the infectious diseases course (18). Also, another study which aimed to evaluate the level of adaptation of the clinical training curriculum with the carrier needs of general practitioners in Kerman demonstrated that about 70% of physicians considered the training of clinical skills relatively sufficient in terms of adaptation with their carrier needs (19).

In this study, the mean scores of adaptation of all the headings of the infectious diseases curriculum with future carrier needs, except for the heading of "Common Parasitic Diseases", were reported to be high and statistically significant. However, the adaptation of the heading "Common Parasitic Diseases" with future carrier needs of general practitioners was reported to be moderate and not statistically significant. This finding shows that there is a need to pay special attention to the education of endemic diseases in each region in preparation and compilation of the infectious diseases curriculum. Also, the relevant professors should pay special attention to the ecological characteristics of each region in teaching headings related to diseases, especially infectious diseases. More comprehensive teaching of topics such as malaria, hydatid cyst, and tuberculosis, which are known as endemic diseases of South Khorasan province, to students who are going to practice medicine in this region, along with considering continuing education courses, should be considered by educational policymakers (20-23).

This study demonstrated that there is no significant correlation between the adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners with sex, age, work experience, workplace, and GPA. Consistent with the findings of the present study, Fazeli et al. (2021) did not report a relationship between the level of adaptation of the psychiatry department curriculum of medical students to the future career needs of general practitioners in terms of work experience and sex (7). However, Reyhani Kermani et al. (2002) showed that physicians with higher work experience express better adaptation of the educational curriculum to their carrier needs. On the other hand, the point of view of physicians was different based on sex, and male physicians mentioned more adaptation of the educational curriculum to their carrier needs (24). Meanwhile, another study showed that women considered the observance of educational curriculum considerations at a higher level compared to men (25). One of the reasons for the difference in the results of the mentioned studies can be related to the difference in the history of working, university of study, and professors who taught the educational curriculum.

Preparation and compilation of educational curriculum for general practitioners according to their educational and carrier needs is one of the important priorities in the implementation of programs, which has always been emphasized by the medical community. Systematic and comprehensive needs assessment is the prelude and prerequisite for the proper design of educational programs and the basis for the successful and satisfactory implementation of the educational curriculum (25, 26). In another study conducted in order to investigate the most

Table 6. The correlation of the mean score of adaptation of infectious diseases curriculum of medical students to their future career needs with age, work experience, and GPA

Variable	Statistics	Work experience	Age	GPA
Adaption of Infectious Diseases curriculum of Medical Students	Pearson correlation coefficient (r)	-0.132	-0.124	0.141
	P-value	0.178	0.207	0.148

suitable source for determining the educational needs of physicians, the extraction of educational needs based on carrier and professional duties was determined to be the most important source of prioritizing educational needs. In the mentioned study, the use of the opinions of medical education experts has been introduced as the least important source for determining the carrier needs (27). The experts of continuing education often emphasize on matching the health needs of the society with the training programs of physicians and believe that the design of training programs for physicians should be done according to the epidemiological findings as well as their needs (28, 29).

Although the current study showed the proper adaptation of infectious diseases curriculum with the carrier needs of general practitioners, the lack of attention to the opinions of general practitioners as well as the lack of a comprehensive survey system can lead to the misadaptation of the educational programs with the carrier needs. Another study showed that the main dissatisfaction of the medical community is the misadaptation between their carrier needs and clinical issues with the topics presented in educational curricula (18). Contrary to the present findings, in another study, general practitioners did not evaluate the adaptation of the educational curriculum with their carrier needs at a proper level (30). Another study showed that the majority of the medical community do not consider the training programs to be satisfactory. This study mentioned that physicians expect more attention to be paid to the aspects of programming, and they request that their educational curruculum be prepared based on their requested priorities (31).

One of the main steps towards the proper implementation of medical training programs is choosing the topic and duration of the programs based on the needs of the medical community. This issue will increase individuals' participation in designing appropriate educational programs, increase motivation, and ultimately improve the quality level of the educational programs.

CONCLUSION

In conclusion, the infectious diseases curriculum of medical students have been effective in developing the knowledge, attitude, and practice of general practitioners. Also, the level of adaptation of infectious diseases curriculum of medical students to the future career needs of general practitioners was reported as moderate and high. In this way, it is recommended that the criteria for selecting educational contents in curricula should be taken into consideration by educational planners and specialists. It is also necessary to create the proper conditions to improve the interaction of students with faculty members for their greater participation in the teaching-learning process, according to the priority of their needs.

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. This study was approved by Birjand University of Medical Science's Research Ethics Committee (Approval ID: IR.BUMS.REC.1401.223). Also, all methods were carried out in accordance with relevant guidelines and regulations. Informed consent was obtained from all participants.

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