

## ORIGINAL ARTICLE

### A Comparison between Knowledge of Medical Students and Graduates at Birjand University of Medical Sciences concerning Zoonoses (Crimean-Congo fever, brucellosis, and rabies)

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**Background and Aim:** Although it is the twenty-first century, the leading cause of mortality in several countries still resides with infectious diseases. From among the infectious diseases, zoonoses, gain double importance because of their epidemiologic control nature. This study aimed to compare knowledge of medical students and graduates concerning zoonoses diseases.

**Methodology:** In this descriptive-analytic study, 73 medical students and 58 participated who were selected by the census. To assess the participants' knowledge of zoonoses at the four levels of *clinical symptoms, transmission, diagnosis and prevention methods*, a researcher-made questionnaire was devised according to Diseases' Management and Prevention Booklet of the *Ministry of Healthcare and Medical Education* upon supervision by infectious disease specialists. It had two sections: demographic characteristics and knowledge about the three diseases. The obtained data were analyzed in SPSS using t test.

**Findings:** Students' mean scores about brucellosis, Crimean Congo, and rabies were  $13.88 \pm 2.47$ ,  $13.2 \pm 2.16$ , and  $11.11 \pm 2.42$  respectively, while those of the graduates were  $14.29 \pm 2.33$ ,  $13.91 \pm 2.32$ , and  $11.37 \pm 2.33$  respectively. The difference between awareness scores of students and graduates was not significant ( $p > 0.05$ ). However, there was a significant difference in their awareness in terms of prevention of rabies and Crimean Congo ( $p < 0.05$ ).

**Conclusion:** The findings indicate that there is no difference between the awareness of students and graduates. This highlights the significance of education during academic studies. Thus, there should be further emphasis on educational planning during academic studies and on self-guiding learning.

**Keywords:** brucellosis, Crimean-Congo fever, rabies, students' awareness, medical graduates' awareness

### مقایسه میزان آگاهی دانشجویان و دانش آموختگان پزشکی دانشگاه علوم پزشکی بیرجند درباره بیماریهای زئونوزیس (کنگو، تب مالت، هاری)

**مقدمه و هدف:** با ورود به هزاره جدید هنوز بیماریهای عفونی بعنوان اولین عامل مرگ و میر انسان در بسیاری از کشورها مطرح هستند. در بین بیماریهای عفونی، بیماریهای زئونوزیس که مشترک بین انسان و دام هستند با توجه به شکل کنترل اپیدمیولوژیک، اهمیت دو چندان پیدا می کنند. و درمان این این بیماریها منوط به داشتن آگاهی لازم در خصوص علائم بیماری جهت تشخیص و درمان، و اطلاع از راههای انتقال و پیشگیری می باشد. این مطالعه با هدف مقایسه میزان آگاهی دانشجویان و دانشجوین آموختگان درباره بیماریهای زئونوزیس تدوین و اجرا گردیده است.

**روش پژوهش:** در این پژوهش توصیفی- تحلیلی، ۷۳ دانشجوی پزشکی (معیار ورود: وارد شدن به بخش های بالینی) و ۵۸ نفر از پزشکان (معیار ورود: فارغ التحصیل شدن از دانشگاه علوم پزشکی بیرجند) بودند، شرکت داشتند که به صورت سرشماری انتخاب شدند. برای ارزیابی میزان آگاهی دانشجویان و دانش آموختگان، در ارتباط با نظام مراقبت بیماریهای زئونوزیس (تب مالت، کنگو، هاری) در چهار سطح سطح علائم بالینی، راههای انتقال و تشخیص و راههای پیشگیری، پرسشنامه ای توسط محقق براساس کتابچه اصول مدیریت و پیشگیری از بیماریهای وزارت بهداشت با کمک متخصصین عفونی طراحی شد که روایی آن با نظر ۵ نفر از متخصصان عفونی مورد تایید قرار گرفت و پایایی آن با مطالعه پایلوت و محاسبه آلفای کرونباخ ۰.۸۲ محاسبه شد. پرسشنامه شامل ۲ قسمت بود: قسمت اول: مشخصات دموگرافیک، قسمت دوم: میزان آگاهی درباره سه بیماری تب مالت، هاری و کنگو. اطلاعات پس از جمع آوری وارد نرم افزار SPSS شدو با آزمون آماری t مورد تحلیل قرار گرفت.

**یافته ها:** میانگین نمره آگاهی دانشجویان درباره بیماری تب مالت  $13.88 \pm 2.47$ ، میانگین نمره آگاهی دانش آموختگان درباره بیماری تب مالت  $14.29 \pm 2.33$ ، میانگین نمره آگاهی دانش آموختگان درباره بیماری کنگو  $13.2 \pm 2.16$ ، میانگین نمره آگاهی دانش آموختگان درباره بیماری کنگو  $13.91 \pm 2.32$ ، میانگین نمره آگاهی دانشجویان و دانش آموختگان معنادار نبود ( $p > 0.05$ ). ولی در میزان آگاهی درباره پیشگیری از بیماری هاری و کنگو بین دانشجویان و دانش آموختگان تفاوت معناداری وجود داشت ( $P < 0.05$ )

**نتیجه گیری:** نتایج حاصل از مطالعه عدم تفاوت در میزان آگاهی دانش آموختگان و دانشجویان را نشان داد و این امر نشان دهنده اهمیت آموزش های دروان تحصیل می باشد. لذا توجه بیشتر به برنامه ریزی های آموزشی در دوران تحصیل و آموزش یادگیری خودراهبر ضرورت دارد.

**واژگان کلیدی:** بیماری تب مالت، کنگو، هاری، میزان آگاهی دانشجویان، میزان آگاهی دانش آموختگان پزشکی

### مقایسه بین معرفت طلاب الطب والخریجین فی جامعة بیرجند للعلوم الطیبة بشأن الأمراض الحيوانية المنشأ (حمى الكونغو والحمى المالطية وداء الكلب)

**ملخص:** بالمقدمة والهدف: ومع دخول الألفية الجديدة، لا تزال الأمراض المعدية هي السبب الأول لوفاة الإنسان في كثير من البلدان. من بين الأمراض المعدية، الأمراض الحيوانية المنشأ المشتركة بين البشر والحيوانات، حيث أصبحت ذات أهمية كبيرة نتيجة طبيعتها الوبائية. علاج هذه الأمراض يعتمد على وجود المعرفة اللازمة حول أعراض المرض لتشخيصه وعلاجه، ومعرفة وسائل الانتقال والوقاية. تم القيام بهذه الدراسة بهدف مقارنة معرفة المتخرجين والطلاب بالأمراض الحيوانية المنشأ.

**طريقة البحث:** في هذا البحث التحليلي الوصفي. شارك 73 طالب طب (معيار الدخول: دخول مرحلة التدريب السريري) و 58 من الزملاء (معيار الدخول: تخرجوا من جامعة بیرجند للعلوم الطیبة). وتم اختيارهم من خلال طريقة التعداد. ومن أجل تقييم معرفة الطلاب والخریجین بالأمراض الحيوانية المنشأ (الحمى المالطية والكونغو وداء الكلب)، وعلى أربعة مستويات من الأعراض السريرية، طرق الانتقال والتشخيص، وآليات الوقاية. تم إعداد استبيان من قبل الباحثة على أساس الكتيب المتعلم بالادارة والوقاية من الأمراض الذي تم تخصيصه من قبل وزارة الصحة بمساعدة أخصائيين بالأمراض المعدية والذي تم الموافقة عليه من قبل متخصصي أمراض معدية وتم حساب متوسطاتهما من خلال الدراسة التجريبية و ألفا كرونباخ 0.82. ويتكون الاستبيان من جزأين: الجزء الأول الخصائص الديموغرافية، والجزء الثاني مدى معرفة ثلاث أمراض في الحمى المالطية، داء الكلب وحمى الكونغو. بعد جمع البيانات، تم تحليلها باستخدام برنامج التحليل الإحصائي SPSS.

**النتائج:** وكان متوسط درجة معرفة الخريجين عن داء البروسيلات  $13.88 \pm 2.47$ ، والكونغو  $13.2 \pm 2.16$ ، داء الكلب  $11.11 \pm 2.42$ ، متوسط درجة معرفة الطلاب عن الحمى المالطية  $14.29 \pm 2.33$ ، حمى الكونغو  $13.91 \pm 2.32$ ، داء الكلب  $11.37 \pm 2.33$ ، الاختلاف بين الخريجين والطلاب لم يكن له معنى ( $p > 0.05$ ). ولكن كان هناك اختلاف واضح بين الخريجين والطلاب من ناحية معرفة طرق الوقاية من أمراض داء الكلب والكونغو ( $P < 0.05$ ).

**النتيجة:** وأظهرت نتائج الدراسة عدم وجود فروق في مستوى معرفة الخريجين والطلاب، مما يدل على أهمية التعليم أثناء الدراسة الجامعية. لذلك، هناك حاجة إلى

### زنو زيس بیماریوں کے بارے میں بیرجند یونیورسٹی آف میڈیکل سائنس کے میڈیکل طلباء اور فارغ التحصیل طلباء کے درمیان معلومات کا موازنہ

**بیک گراؤنڈ:** نئے ہزارے میں داخل ہونے کے باوجود عفونی بیماریاں آج بھی بعض ملکوں میں لاکھوں انسانوں کی موت کا سبب بنتی ہیں۔ زئونوزیس بیماریاں جن میں کانگو اور مالتا بخار اور ریبز شامل ہیں انسان اور جانوروں کے درمیان مشترک ہیں۔ ان بیماریوں کو ایپیدمیولوجی کے لحاظ سے کنٹرول کرنا اور ان میں مبتلا بیماریوں کا علاج کرنا ان سے مکمل آگہی کا مرہون منت ہے، کیونکہ ڈاکٹروں کو اسکی علامتوں اور علاج کی راہوں سے آشنا ہونا ضروری ہے، اسی طرح سے یہ بھی جاننا ضروری ہے کہ ان بیماریوں کو پھیلنے سے کس طرح روکا جاسکتا ہے۔ اس تحقیق میں میڈیکل طلباء اور فارغ التحصیل طلباء کی آگہی کا موازنہ کیا گیا ہے۔

**روش:** اس تجزیاتی تحقیق میں تین میڈیکل طلباء اور اٹھارہ ڈاکٹروں نے شرکت کی۔ یہ لوگ بیرجند یونیورسٹی آف میڈیکل سائنس سے فارغ التحصیل ہوئے تھے، طلباء اور ڈاکٹروں کی آگہی کا جائزہ لینے کے لئے زئونوزیس بیماریوں کی علامتوں، کلینیکل علامتوں، ان بیماریوں کے منتقل ہونے کے طریقوں اور ان بیماریوں کی تشخیص کے طریقوں کے بارے میں سوالنامہ بنایا گیا۔ یہ کتابچہ وزارت صحت کے ماہروں کی مدد بھی شامل رہی ہے جنہوں نے زئونوزیس بیماریوں کو کنٹرول کرنے اور ان کی روک تھام کے میدانوں میں کام کیا ہے۔ اس سوالنامہ کو تیار کرنے میں عفونی بیماریوں کے ماہرین نے بھی حصہ لیا۔ سوالنامہ دو طرح کے سوالوں پر مشتمل تھا: پہلے حصے میں ڈیموگرافیک تفصیلات پوچھی گئی تھیں اور دوسرا حصہ میں مالت فیور، ریبز اور کانگو فیور کے بارے میں تفصیلات دریافت کی گئی تھیں۔ ڈیٹا کا تجزیہ ایک پی ایس ایس اور ٹی ٹسٹ کے ذریعے کیا گیا۔

**نتیجے:** مالتا فیور کے بارے میں میڈیکل طلباء کی اوسط آگہی دو اعشاریہ چارسات تھی جبکہ کانگو فیور کے بارے میں دو اعشاریہ سولہ تھی اور ریبز کے بارے میں ان کی معلومات گیارہ اعشاریہ ایک سو گیارہ فیصدی تھیں۔ جبکہ فارغ التحصیل طلباء یعنی ڈاکٹروں کی معلومات مالتا بخار کے بارے میں دو اعشاریہ تین تین، کانگو فیور کے بارے میں دو اعشاریہ تیس دو اور ریبز کے بارے میں دو اعشاریہ تین تین فیصدی تھیں۔ ان بیماریوں کی روک تھام کے بارے میں دونوں زمروں کی معلومات میں کافی فرق موجود تھا۔

**سفارشات:** نتائج سے پتہ چلتا ہے کہ میڈیکل طلباء اور ڈاکٹروں کی معلومات میں کوئی خاص فرق نہیں تھا، اس سے میڈیکل تعلیم کی اہمیت کا پتہ چلتا ہے لہذا میڈیکل طلباء کی تعلیم پر مکمل توجہ کرنے کی ضرورت ہے۔

**کلیدی الفاظ:** مالتا بخار، کانگو فیور، آگہی۔

## INTRODUCTION

Today, infectious diseases are the first cause of morbidity and mortality in many countries (1). Among infectious diseases, zoonotic diseases which are common between humans and animals are more important due to the epidemiologic control issues. More than 100 Million dollars are spent annually by the Ministry of Health for common diseases between humans and animals and they are still considered as one of the Health problems in the country. Some of them are brucellosis, rabie and is CCHF (2). Crimean-Congo fever is a potentially serious illness in humans caused by the virus From Bunyavirideh family, and is seen in parts of Asia, Eastern Europe and the Middle East. Transmission to humans happens through tick bites, contact with Crimean-Congo fever patients when they are in acute phase, and through contact with blood, secretions or tissues of infected animals. Due to high mortality and epidemiologic issues of the disease, it has a particular importance and And because of the transmission of the disease through contact with contaminated secretions is one of the most important nosocomial infections. The case fatality rate of the disease varies from 3 to 30%. The occurrence of the disease in more cities of Iran is rising (3). General practitioners as the first level of dealing with Crimean-Congo fever patients have a fundamental role in the proper implementation of the health care system and their awareness about the necessity of reporting of disease as well as implementing the next stages of the disease surveillance system will be an important part of the success of control programs.(4) Unfortunately, the Researches which are done in recent years on the Knowledge of physicians from Infectious Diseases show that their information is not at the desirable levels. In a cross-sectional study done in Zahedan which evaluated practitioners' awareness of the disease showed that 42% of them had low information level about the disease (1). In a study which is done in Zahedan to evaluate the general practitioners knowledge from Congo fever, none of them had sufficient information and 50% had moderate information. There were no significant differences between the Doctors Information about the disease and the university he graduated from or with his work experiences. Also the average knowledge about the disease among the doctors who participated in the program of re-education about Congo fever was significantly higher than the rest of them. In a study conducted in 2008 in Sistan and Baluchistan and Isfahan to evaluate the Knowledge and Attitude of Health care workers about Congo fever showed that being physician, working in Isfahan and working in a academia than in the private sector was related to a greater degree of knowledge, and higher levels of education and working in the lab was associated with higher levels of attitude (5). In a study in the area of Balochistan 235 laboratory technicians were assessed which 66% of them knew the disease. 80% of doctors, 60% of nurses and 14% of laboratory technicians had prior knowledge about Crimean-Congo fever. 80% of doctors expressed the fever as the most common symptom of the disease. All of the participants had low information about the disease (6). Another study which is done in Beheshti University of Medical Sciences in Tehran

showed that the higher levels of doctors Information about the disease whom works in metropolitan area is related to more Reference of the patients to this hospitals(7). Another disease which is examined in this study is brucellosis that occurs as acute, subacute, or chronic. The disease usually cause GU infection in the animals and causes fever, sweating, weakness, lethargy, weight loss in humans (8). Also can cause focal purulent infection in the liver, spleen, bones and other organs. This disease is called as the thousand faces disease due to its long lasting effects. Brucellosis agent is a small cocobacil that involves the wide range of mammals, including humans, cattle, sheep, goats, pigs, rodents and marine mammals. The disease is transmitted through oral-fecal rout, respiratory tract, skin, and eye and even is transmitted to humans through the placenta. According to the World Health Organization, approximately 500,000 new cases are reported annually and the most common species are *Brucella melitensis*.

Malta fever is endemic in iran particularly in rural areas.(8) and Despite the decline in recent years is still regarded as one of the health and economic problems, because livestock and animal husbandry is an integral part of the lives of villagers and farmers.(3) During a study, 57% of physicians had perfect information about brucellosis, but 18% of them had no idea of transmission ways other than the consumption of unpasteurized milk.(9) In another study that was carried out in the Kashan city to evaluate students awareness about brucellosis, results showed that their information about the disease is not satisfactory.(8) In a study in 2015 on medical personnel to evaluate their information about brucellosis also showed their awareness was very low and the need for training in this regard was so necessary. (10)

Rabies, the third one that we studied is one of the most important and dangerous zoonotic disease. In the case of rabies, 55,000 deaths and 17.4 million bite occurs annually. Because rabies is a zoonotic disease in humans and wild animals, in terms of disease control and epidemiology of that is more important and more difficult than the other zoonotic ones.(10) In a study which was performed on 110 medical doctors their information about rabies 53.9%, had average information and 15.4% had well informed about the disease. All of them knew that dog as reservoirs of disease, and 14% knew that the disease would develop by biting other animals other than dogs. (11)

In another study which was performed on 50 interns and 50 doctors in Shiraz, the results showed that 95% were aware of the viral cause of the disease and 83% of them knew about the signs and symptoms perfectly and 46% thought that the disease is treatable. 98% express that the dog is the cause and reservoir of the disease, 92% knew the incubation period and 8% knew that Inhalation is a way of transmission. 80% were aware of the effectiveness of vaccination in certain groups. (4)

According to a survey conducted these studies, in the case of each disease alone, results show that physicians and medical staff information are so imperfect and none of the studies investigated the knowledge level of graduates and students at the same time. Since the implementation and planning of any educational program need to review the current situation, Information gaps need to be assessed? Therefore,

this study was carried out with the aim of comparison of the knowledge of the Medical students and graduates about the brucellosis and according to the results appropriate action be taken in this regard.

**METHODS**

This cross-sectional descriptive-analytic study carried out as sectional. The studied population was all the general practitioners working in clinics and hospitals in the city of Birjand. The inclusion criteria were graduating from the Birjand University of Medical Sciences Included 58 Doctors and 73 medical students entering clinical departments which were selected through censuses. To assess their level of awareness through Zoonotic diseases (Brucellosis, Congo, rabies) in four levels of clinical symptoms, transmission and detection and prevention, a survey was made by researcher based on manual management and Prevention principles from Iran Ministry of Health with the help of experts in infectious diseases that the validity was confirmed by 5 experts in infectious diseases and its reliability was Calculated with pilot study and Cronbach's alpha was 0.82. The questionnaire consisted of two parts: part one; demographic information, Part II; the awareness about the three diseases: brucellosis, rabies and Congo fever. In the knowledge section There were 20 questions to assess knowledge in relation to brucellosis, 19 questions about rabies and 19 questions about the Congo's disease, they had to answer the questions with a yes (true) and no (false) about what was said about the disease, another option is also set for the persons who had no idea about the answer that made the answers partly not marked by chance and the participants were not forced to choose either yes or no. A score was given to each question and no questions had a negative score. The data collection then entered the software of SPSS and were analyzed by t-test statistical test.

**RESULTS**

44.3% of participants in the study were graduates (58) and 55.7% were students (73). 57.7% of the participants were women. 78 participants had the mean age under 30 years, 29

participants aged between 31 and 41 years. 18 participants had over 40 years old and 6 participants did not respond to this question. Overall knowledge about the brucellosis was  $2.47 \pm 13.8841$  in the students group and  $14.29 \pm 2.93358$  in the graduates' group. Signs of brucellosis:  $4.3429 \pm 1.16576$  in the students' group and  $1.04944 \pm 4.32$ . About the transmission of brucellosis:  $3.0548 \pm .76177$  in the students' group and  $85840 \pm 3$  in the graduates' group. About the prevention of brucellosis  $1.3 \pm 4.16$  of the participants answer right. Treatment of brucellosis:  $.85 \pm 2.31$  in the students' group and  $1.12 \pm 2.72$  in the graduates' group. Average overall students and graduates knowledges about rabies was  $2.42 \pm 11.11$  and  $11.37 \pm 2.33$  respectively, about symptoms of rabies  $2.97 \pm 1.1$  in the students and  $.83 \pm 2.75$  in the graduates' group. About the transmission ways of rabies:  $2.52 \pm .8$  in the students' group and  $.85 \pm 2.63$  in the graduates' group. About the ways to prevent rabies  $1.04 \pm 2.52$  and rabies treatment: students and graduates were  $1 \pm 2.83$ . VS  $2.79 \pm 1.1$ .

Average overall knowledge about, Congo fever  $2.16 \pm 13.23$  among the students' group vs  $13.91 \pm 2.32$  graduates' group, Congo symptoms:  $5.28 \pm 1.11$  students and  $1.17 \pm 5.44$  graduates. About the ways of transmission of the Congo fever:  $3.28 \pm .63$  students and graduates' groups.  $71 \pm 3.49$  on the prevention of Congo fever.  $.83 \pm 1.84$ , the treatment of the Congo fever: Students and Graduates  $.69 \pm 2.62$  and  $.76 \pm 2.51$ , respectively.

There were no significant differences between the knowledge level of brucellosis among the graduates and the students ( $p > 0/05$ ). The results also showed a significant difference between the knowledge of physicians and students about the prevention of human rabies ( $P < 0/05$ ) but in other issues, such as recognizing symptoms of rabies and rabies transmission ways and treatment of the disease the differences was not significant ( $P > 0/05$ ). The results also showed significant differences between physicians and students information about the prevention of Congo fever disease ( $P < 0/05$ ). But in other issues, such as recognizing symptoms of Congo fever and transmission ways and treatment of the disease differences was not significant. ( $P > 0/05$ )

**Chart 1. Comparison of students and graduates Information about brucellosis**

	Group	Average	The standard deviation	Significancy	difference
Rabies	Students	11.1127	2.42339	.539	Does not exist (p>0/05)
	Graduates	11.3750	2.33209		
Signs and symptoms	Students	2.9718	1.10805	.216	Does not exist (p>0/05)
	Graduates	2.7500	.83666		
Transmission Routs	Students	2.5211	.80816	.427	Does not exist (p>0/05)
	Graduates	2.6379	.85221		
Prevention	Students	2.5278	1.04776	.012	Exist (P<0/05)
	Graduates	2.9828	.96412		
Treatments	Students	2.8333	1.00702	.829	Does not exist (p>0/05)
	Graduates	2.7931	1.10436		

Chart 2. Comparison of students and graduates Information about Rabies					
	Group	Average	The standard deviation	Significancy	difference
Brucellosis overall	Students	13.88	2.47	.391	Does not exist (p>0/05)
	Graduates	14.29	2.93		
Signs and symptoms	Students	4.34	1.16	.939	Does not exist (p>0/05)
	Graduates	4.32	1.04		
Transmission Routs	Students	3.05	.76	.700	Does not exist (p>0/05)
	Graduates	3	.85		
Prevention	Students	4.16	1.3	.724	Does not exist (p>0/05)
	Graduates	4.24	1.29		
Treatments	Students	2.31	.85	.021	Does not exist (p>0/05)
	Graduates	2.72	1.12		

Chart 3. Comparison of students and graduates Information about CCHF					
	Group	Average	The standard deviation	Significancy	difference
CCHF	Students	13.2319	2.16350	.425	Does not exist (p>0/05)
	Graduates	13.9123	2.32441		
Signs and symptoms	Students	5.2857	1.11827	.081	Does not exist (p>0/05)
	Graduates	5.4483	1.17238		
Transmission Routs	Students	3.2817	.63658	.427	Does not exist (p>0/05)
	Graduates	3.4912	.71020		
Prevention	Students	1.8472	.83345	.047	Exist (P<0/05)
	Graduates	2.1552	.91386		
Treatments	Students	2.5139	.76900	.413	Does not exist (p>0/05)
	Graduates	2.6207	.69655		

## DISCUSSION

In this study, the knowledge level of the students and the graduates of Birjand University of Medical Sciences was assessed about three diseases, brucellosis, and rabies and Congo fever. The average score of students awareness about brucellosis was  $47/2 \pm 13/88$ ,  $16/2 \pm 2 / 13$  for Congo fever and  $42/2 \pm 111/11$  for the rabies. The Average score for graduates awareness about brucellosis was  $33/2 \pm 14/29$ ,  $32/2 \pm 91/13$  for Congo fever and  $33/2 \pm 37/11$  for rabies. In a study which was carried out at the University of Kashan about Students awareness and knowledge about brucellosis the average score was 5.07 and female students' knowledge was better than male students, further their knowledge was also not satisfactory.

In a study which was done in Zahedan about Crimean-Congo fever, the overall knowledge Score of general practitioners about the care system of Crimean-Congo haemorrhagic fever was minimum 3, maximum 27, with an average of 68/14 with a standard deviation of 73/4 and stated that none of the doctors were well informed about Crimean-Congo haemorrhagic fever surveillance system, Only 11% of

physicians knew about the immediate reporting of suspected and probable cases of the disease (1). This study is made on 540 medical students and interns which 77% of them were male were no significant relationship between sex and knowledge- age and knowledge. A cross sectional study was conducted between June-September 2009 in 55 hospitals in Istanbul, the results showed that 66/9% did not know how to prevent the transmission of rabies (12). A study conducted in 2014 showed that 92, 2% of participants didn't know about the necessary and initial actions when exposing a bite and 77/5 didn't know about the disinfection the site of the bite and 75% didn't know about the prophylactic vaccination and Ig. Studies show higher knowledge in Medical interns (13).

In another study that was done in 2002 on 622 medical students in Shiraz the results showed that 7/68% and 4/74% and 1/81% students in years of 5 and 6 and 7 respectively, that learning more about the isolation of the infectious disease had better performance than the others in case of exposing the cases. The study also showed that inadequate knowledge may lead to lower performance, however, in some cases, students who had been trained were not well represented in the study (9). Thus, it shows that any types of

training can't be effective in diagnosing, treating and preventing of the disease and trainings should be such way that lead to performance. ADESM and colleagues study in 2005 on 540 medical students and interns was also consistent with this study (14).

The results of studies from Çilingiroğlu et al. 2010 (15) and Tabatabaei et al 2014 (16) and Yilmaz et al. 2009 (12), Mostafaei 2013 (2) indicate the poor knowledge of doctors or medical students in the field of Brucellosis, Congo and Rabies so It is necessary to review the training of the diseases conducted in medical education.

The results also showed that there was no significant difference between the knowledge between the Students, Therefore, this can be indicative of the importance of the university education and Continuous training will be effective to repeat the topics to avoid forgetting science or learning new topics.

### CONCLUSION

General practitioners play a major role in facing of outpatient as one of the most active groups of the health team, so according to this study the training programs based on assessments of graduates needs must take place after graduating. Considering that the results of our study showed

that there were no significant differences in the knowledge of students and graduates and this shows the importance of studying and learning in the university period, therefore, it is necessary that all disease topics and information transferred to students based on community needs. More importantly, the ways of acquiring knowledge and new information should be taught to the students. It is also suggested that continuing education workshops to be held based on community need and not according to the tastes of educational groups. A continuing education program will be subject to the results of the needs assessment. Our country, along with all the improvements and valuable services in the health sector during these years, Faces enormous challenges that can be somewhat obviated with a health development plan, but there is still a huge gap between medical education and medical practice which is Because of inconsistencies in medical education with the needs of society. Therefore, the focus of the medical education must be community-based instead of being patient-based medical education. Therefore, it is necessary to carry out an assessment in any educational topics according to the common diseases in the community and training will be conducted on the basis of the conditions that will lead to better performance training.

### REFERENCES

1. Sargolzaie N, DehghanHhaghighiJ , KharazmiF. Crimean Congo Hemorrhagic Fever Surveillance and General Practitioners in Zahedan (Text in Persian). Pages 21-25
2. mostafaei g, eskandari e, ghazi zadeh s, nasrollahzadeh z, hissain dist g, gharli pour z, et al. Determining the Students' Knowledge of Kashan University of Medical Sciences about Brucellosis. www.sjimu.medilam.ac.ir. 2013;21(4):30-6.
3. Tabatabaei S, Zahraei M, Ahmadnia H, Ghotbi M, Rahimi F. Principles of disease prevention and surveillance. Tehran: rooh ghalam. 2007;195.
4. KASSAAian L, Ali SHA. A survey on information of physicians in health center in Shiraz about infectious diseases (Tuberculosis, brucella, typhoid fever, dysentery) (1999). IJME. 2000;1(2):38-42.
5. Rahnavardi M, Rajaeinejad M, Pourmalek F, Mardani M, Holakouie-Naieni K, Dowlatshahi S. Knowledge and attitude toward Crimean-Congo haemorrhagic fever in occupationally at-risk Iranian healthcare workers. Journal of Hospital Infection. 2008;69(1):77-85.
6. Sheikh NS, Sheikh AS, Sheikh AA. Knowledge, attitude and practices regarding Crimean-Congo haemorrhagic fever among healthcare workers in Balochistan. Headache. 2004;30:20.
7. Hurieh Aslani , Shahram Yazdani, Seyyed Mohammad Alavi-Nia, Evidence-Based Medical Educational Needs Assessment of Clinical Faculty Members of Hospitals of Shahid Beheshti University of Medical Sciences Journal of Medical Education Summer 2015; 14(3):87-92.
8. amini kh, khanian H, Hashemian A. Impact of Educational Program on Preventive Behavior of Brucellosis. HEALTH EDUCATION AND HEALTH PROMOTION (PERSIAN) FALL 2013 , Volume 1 , Number 3, Page(s) 15 To 22.
9. Askarian M, Honarvar B, Tabatabaei H-R, Assadian O. Knowledge, practice and attitude towards standard isolation precautions in Iranian medical students. Journal of Hospital Infection. 2004;58(4):292-6.
10. Nguyen A, Nguyen H, Pham T, Hoang T, Olowokure B. Awareness of rabies prevention and control measures among public health workers in Northern Vietnam. Public health. 2015.
11. Gönen I, Soysal A, Topuzoğlu A, Bakir M. Clinical knowledge and attitudes of Turkish physicians toward rabies caused by animal bites. Japanese journal of infectious diseases. 2010;64(5):382-90.
12. Yilmaz R, Ozcetin M, Erkorkmaz U, Ozer S, Ekici F. Public knowledge and attitude toward Crimean Congo hemorrhagic fever in Tokat Turkey. Iranian journal of arthropod-borne diseases. 2009;3(2):12.
13. Moran D, Juliao P, Alvarez D, Lindblade KA, Ellison JA, Gilbert AT, et al. Knowledge, attitudes and practices regarding rabies and exposure to bats in two rural communities in Guatemala. BMC research notes. 2015;8(1):955.
14. ADESm Y, FAGBAMI A. BRUCELLOSIS: KNOWLEDGE, ATTITUDE AND PRACTICES AMONG OCCUPATIONALLY EXPOSED INDIVIDUALS IN OSUN STATE. Science Focus. 2005;10(1):38-41.
15. Çilingiroğlu N, Temel F, Altıntaş H. Public's knowledge, opinions and behaviors about Crimean-Congo Hemorrhagic Fever: An example from Turkey. Kafkas Univ Vet Fak Derg. 2010;16:S17-22.
16. Tabatabaei SM, Hassanzehi A, Pakzad A, Mohammadi M, Madani A. Factors Influencing Crimean-Congo Hemorrhagic Fever Risk Perceptions in the General Population, Southeast Iran. Int J Infect. 2014;1(1):e18150