ORIGINAL ARTICLE

التحقيق في الثقافة المعلوماتية لطلاب الطب بجامعة جونديشابور للعلوم الطبية في الأهواز بخصائصهم الديموغرافية في العام الدراسي ٢٠٢٠-٢٠٢١

الخلفية: المعرفة المعلوماتية تمكن المتعلمين من إتقان محتوى المعلومات وتوسيع استكشافهم والتحكم بهم لمعرفة المزيد. يعتبر محو الأمية المعلوماتية عنصرا أساسيا في تطوير التعلم المستقل والفعال في التعليم العالي. كان الغرض من الدراسة هو تقييم تنظيم واستخدام المعلومات الإلكترونية وعلاقتها ببعض الخصائص الديموغرافية للطلاب.

الطريقة: في هذه الدراسة الوصفية التحليلية ، شمل المجتمع المدروس جميع طلاب الطب من السنة الثالثة إلى السنة السابعة للطب في جامعة جونديشابور للعلوم الطبية في الأهواز في العام الدراسي ٢٠٢٠-٢٠٢١. تألف حجم العينة من ٣٠٢ شخصًا ، تم إسقاط ٢٨ شخصًا منهم. تم جمع البيانات باستخدام استبيان محو الأمية المعلوماتية متضمنًا ٣٠ فقرة وخمس مهارات. تم التحقق من صحة وموثوقية الاستبيان. كانت طريقة أخذ العينات العشوائية بسيطة. لتحليل البيانات ، تم استخدام الإحصاء الوصفي والتحليلي باستخدام برنامج SPSS عند مستوى أهمية $p <0.05$.

النتائج: كان متوسط درجات معرفة القراءة والكتابة المعلوماتية لطلاب الطب ٢,٧٢ ± ٠,٥٦ من ٥. أظهرت مقارنة متوسط درجات معرفة القراءة والكتابة المعلوماتية بين مستوى معرفة القراءة والكتابة المعلوماتية لطلاب الطب في الدورات الأساسية ، والتدريب المهني ، والتدريب الداخلي ، أن هناك فرقًا مهمًا من الناحية الإحصائية ، وكذلك في المستويات العليا يرتفع مستوى المعرفة المعلوماتية للطلاب.

الاستنتاجات: أظهرت نتائج هذه الدراسة أن متوسط معرفة القراءة والكتابة المعلوماتية لطلاب الطب كان معتدلاً. نظرًا لأن الطلاب كانوا يدرسون للحصول على درجة الدكتوراه المهنية ، فإن الأمر يتطلب اهتمامًا خاصًا لتحسين مستوى محو الأمية لديهم.

الكلمات المفتاحية: التربية المعلوماتية ، طلاب الطب ، التكنولوجيا ، تقويم المعلومات

Investigating the information literacy of medical students of Jundishapur University of Medical Sciences in Ahvaz with their demographic characteristics in the academic year 2020-2021

Background: Information literacy enables learners to master information content and expand their exploration and control to learn more. Information literacy is an essential element in the development of independent and effective learning in higher education. The purpose of the study was to evaluate the organization and use of electronic information and its relationship with some demographic characteristics of students.

Method: In this descriptive-analytical study, the studied population included all medical students from the third to the seventh year of medicine at Jundishapur University of Medical Sciences in Ahvaz in the academic year of 2020-2021. The sample size consisted of 302 people, of which 28 people were dropped. Data was collected by using information literacy questionnaire including 30 items and five skills. The validity and reliability of the questionnaire has been checked. The random sampling method was simple. To analyze the data, descriptive and analytical statistics were used using SPSS software at a significance level of $p<0.05$.

Results: The mean score of information literacy of medical students was 2.72± 0.56 out of 5. Comparing the mean scores of information literacy between the level of information literacy of medical students in basic, clerkship and internship courses showed that there is a statistically significant difference, as well as in higher levels the level of information literacy of students increases.

Conclusions: The results of this study showed that the average information literacy of medical students was moderate. Since the students were studying for a professional doctorate, it requires special attention to improve their literacy level.

Keywords: Information Literacy, Medical Students, Technology, Information Evaluation

Abdolhussein Shakurnia[1], Mahya Kavossi[2], Mostafa Albokordi[3], Nasrin Khajeali[4,*]

[1]Department of Immunology, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

[2]General Practitioner, Jundishapur University of Medical Sciences, Ahvaz, Iran

[3]Department of Community Medicine, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

[4]Education Development Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

[*]Ahvaz Jundishapur University of Medical Sciences,
Golestan St.
Ahvaz, 6135715794
Iran

Tel: +98 9166008373
Email: nasrinkh2009@yahoo.com

تعلیمی سال ۲۰۲۰-۲۰۲۱ میں اہواز میں جندیشا پور یونیورسٹی آف میڈیکل سائنسز کے میڈیکل طلباء کی آبادی کی خصوصیات کے ساتھ معلوماتی خواندگی کی چھان بین

پس منظر: معلوماتی خواندگی سیکھنے والوں کو معلوماتی مواد میں مہارت حاصل کرنے اور مزید جاننے کے لیے اپنی تلاش اور کنٹرول کو وسعت دینے کے قابل بناتی ہے۔ اعلیٰ تعلیم میں آزاد اور موثر سیکھنے کی ترقی میں معلوماتی خواندگی ایک لازمی عنصر ہے۔ مطالعہ کا مقصد تنظیم اور الیکٹرانک معلومات کے استعمال اور طلباء کی کچھ آبادیاتی خصوصیات کے ساتھ اس کے تعلق کا جائزہ لینا تھا۔

طریقہ: اس وضاحتی تجزیاتی مطالعہ میں، مطالعہ شدہ آبادی میں ۲۰۲۰-۲۰۲۱ کے تعلیمی سال میں اہواز میں جندیشا پور یونیورسٹی آف میڈیکل سائنسز میں میڈیسن کے تیسرے سے ساتویں سال تک کے تمام میڈیکل طلباء شامل تھے۔ نمونے کا سائز ۳۰۲ افراد پر مشتمل تھا، جن میں سے ۲۸ افراد کو ڈراپ کیا گیا۔ معلومات خواندگی کے سوالنامے کا استعمال کرکے ڈیٹا اکٹھا کیا گیا جس میں ۳۰ اشیاء اور پانچ مہارتیں شامل ہیں۔ سوالنامے کی صداقت اور اعتبار کی جانچ کی گئی ہے۔ بے ترتیب نمونے لینے کا طریقہ آسان تھا۔ ڈیٹا کا تجزیہ کرنے کے لیے، وضاحتی اور تجزیاتی اعدادوشمار کو SPSS سافٹ ویئر کا استعمال کرتے ہوئے $p <0.05$ کی اہمیت کی سطح پر استعمال کیا گیا۔

نتائج: میڈیکل طلباء کی معلوماتی خواندگی کا اوسط سکور ۵ میں سے ۲٫۷۲ ± ۰٫۵۶ تھا۔ بنیادی، کلرک شپ اور انٹرن شپ کورسز میں میڈیکل طلباء کی معلوماتی خواندگی کی سطح کے درمیان معلوماتی خواندگی کے اوسط سکور کا موازنہ کرنے سے معلوم ہوا کہ اعدادوشمار کے لحاظ سے ایک اہم فرق ہے۔ ، نیز اعلیٰ سطحوں پر طلباء کی معلوماتی خواندگی کی سطح میں اضافہ ہوتا ہے۔

نتیجہ: اس تحقیق کے نتائج سے ظاہر ہوا کہ میڈیکل کے طلباء کی اوسط معلومات خواندگی اعتدال پسند تھی۔ چونکہ طلباء پیشہ ورانہ ڈاکٹریٹ کی تعلیم حاصل کر رہے تھے، اس لیے ان کی خواندگی کی سطح کو بہتر بنانے کے لیے خصوصی توجہ کی ضرورت ہے۔

مطلوبہ الفاظ: انفارمیشن لٹریسی، میڈیکل اسٹوڈنٹس، ٹیکنالوجی، معلومات کی تشخیص

بررسی سواد اطلاعاتی دانشجویان پزشکی دانشگاه علوم پزشکی جندی شاپور اهواز با از ویژگی های جمعیت شناختی آنان در سال تحصیلی ۱۴۰۰-۱۳۹۹

زمینه و هدف: سواد اطلاعاتی فراگیران را قادر می سازد تا بر محتوای اطلاعات تسلط پیدا کنند و کاوش و کنترل خود را گسترش داده و بیشتر بیاموزند. سواد اطلاعاتی یک عنصر اساسی در رشد یادگیری مستقل و مؤثر در آموزش عالی است. هدف مطالعه ارزیابی سازماندهی و استفاده از اطلاعات الکترونیکی و ارتباط آن با برخی از ویژگی های جمعیت شناختی دانشجویان می باشد.

روش: در این مطالعه توصیفی-تحلیلی، جامعه مورد مطالعه شامل کلیه دانشجویان پزشکی سال سوم تا هفتم پزشکی در دانشگاه علوم پزشکی جندی شاپور اهواز در سال تحصیلی ۱۴۰۰-۱۳۹۹ بود. نمونه ها ۳۰۲ نفر بودند که ۲۸ نفر ریزش نمونه وجود داشت. گردآوری داده‌ها با استفاده از پرسشنامه سواد اطلاعاتی، مشتمل بر ۳۰ گویه و پنج مهارت بود انجام شد. روایی و پایایی پرسشنامه بررسی شده است. روش نمونه گیری تصادفی ساده است. برای تجزیه و تحلیل داده ها از آمار توصیفی و تحلیلی با استفاده از نرم افزار SPSS در سطح معناداری $p< ۰/۰۵$ استفاده شد.

یافته ها: میانگین نمره سواد اطلاعاتی دانشجویان پزشکی ۰/۵۶±۲/۷۲ از نمره کل ۵ بود. مقایسه میانگین نمرات سواد اطلاعاتی دانشجویان پزشکی در مقاطع پایه، کارآموزی و کارورزی نشان داد که از نظر آماری تفاوت معناداری وجود دارد و در مقاطع بالاتر سطح سواد اطلاعاتی دانشجویان افزایش می یابد.

نتیجه گیری: نتایج این مطالعه نشان داد که میانگین سواد اطلاعاتی دانشجویان پزشکی در حد متوسط است. از آنجایی که دانشجویان در مقطع دکتری حرفه ای تحصیل می کردند، برای ارتقای سطح سواد آنها توجه ویژه ای می طلبد.

واژه های کلیدی: سواد اطلاعاتی، دانشجویان پزشکی، فناوری، ارزشیابی اطلاعات

INTRODUCTION

Information literacy is a set of capabilities, and requires individuals to "understand when they need information to be able to locate, evaluate, and use the information effectively." This type of literacy is common to all disciplines, all learning environments, and all levels of education. Information literacy enables learners to master the content of information and expand their exploration, and have more control on their learning (1).

An information literate, is one who can choose a topic and the appropriate terms for that topic, know the policy of searching in different sources of information, and be able to analyze the collected data for evaluation, relevance, quality and usefulness and correctly direct the information to knowledge production (2). In the basic definitions, information literacy only included library or bibliographic skills, but in recent years, information literacy training has critical and analytical thinking skills in terms of information use .The ability to create new ideas from current information and previous knowledge is also included (3).

Despite the importance of information literacy for students in conducting research and educational activities and need of students to have information acquisition skills, there is a lot of evidence that students for learning courses and research lack sufficient skills; therefore, many students leave their courses with only a little knowledge in research. Obviously, students without the necessary research skills and information literacy after graduation will not be able to work effectively and optimally in advanced environments with new technologies (4).

The problem is that the realization of lifelong learners is a central mission of higher education institutions. But evidence shows that only a very small number of universities consider it necessary to assess students' information literacy as a part of their graduation requirements, so many students drop out of their courses with little knowledge (3). In the field of research, it is necessary to know how to use research tools and evaluate resources. Therefore, students without the necessary research skills and information literacy, after graduation, will not be able to work effectively and favorably in advanced information and technological environments (5). On the other hand, information professionals in the university environment cannot hold enough formal information literacy training sessions for students, while there is a constant need for this type of training and its role in educational institutions (6). Despite the importance and need for this skill for students, there is a lot of evidence that students lack the information literacy so they need to take some of their courses so as not to become lifelong learners. Research on the study of students' information literacy shows that students' information literacy is at an unfavorable level (6-8).

There is a lot of evidence that students lack the necessary information literacy to pass some of their courses to become the lifelong learners. The research conducted regarding the study of students' information literacy shows that students' information literacy is at an unfavorable level.

Also, studies conducted in Iran indicated that the level of information literacy of students is at an undesirable level, so teaching information literacy to students seems necessary (8-10). In this study, the researchers intend to investigate the level of information literacy of medical students of Jundishapur University of Medical Sciences in Ahvaz and its relationship with demographic indicators.

According to these results, students should be taught the level of information literacy. But when it comes to education, it is a matter of measuring the quantity and quality of what is learned (9). Accordingly, measuring students' information literacy is essential. Therefore, the need for planning to teach students 'information literacy skills doubles the need to assess the status of students' information literacy. Therefore, the present study aimed to assess the information literacy and ability of medical students in three basic sciences, internship and internship in classifying, evaluating, organizing and using electronic information and its relationship with their demographic characteristics.

METHODS

In this descriptive-analytical study, the study population included all medical students studying at Ahvaz Jundishapur University of Medical Sciences in the academic year of 2020-2021 in the number of 1430 students. According to Morgan's table, 302 of them were selected by simple random sampling. Inclusion criteria were studying in medicine as well as willingness to participate in the study. The exclusion criteria were unwillingness to participate in the study and completion of the questionnaire.

A questionnaire developed by Yazdani et al (2012) was used to collect data to assess the level of information literacy of Payame Noor students in Hamadan. In a study conducted in 2012, Yazdani calculated the reliability of the questionnaire after being performed on a sample of 78 people using the Cronbach's alpha test and reported the Cronbach's alpha coefficient of the questionnaire as 0.94. In this study, the face, content, and construct validity of the questionnaire have also been reported as desirable (0.83) (11).

This questionnaire consists of 30 items and five skills and standard information literacy skills approved by the "Association of College and Research Libraries". These skills include: information needs (5 questions), information retrieval (10 questions), information evaluation (2 questions), information organization (7 questions), and information exchange (dissemination) (6 questions). The scoring method of the questionnaire was 5-point Likert type and each of the answers had a score of 1 for very low, 2 for low, 3 for medium, 4 for high, and 5 for very high, respectively. In this study, all items of the questionnaire were expressed in a positive way and no negative items were used in the questionnaire. In other words, all items were scored directly or positively.

Data were analyzed using SPSS software version 18 and one-way t-test, independent t-test, ANOVA, Pearson correlation coefficient, and linear regression, as well as $p < 0.05$ was considered as a significant difference.

In order to comply with ethical principles, the questionnaires were completed anonymously by students and the confidentiality of participants' information was carefully observed.

RESULTS

Out of 302 questionnaires distributed among students, 274 questionnaires that were completely completed were examined (90.7% response rate). Of these, 107 (39%) were male and 167 (61%) were female with a mean age of 24.1±1.5 years. Of these, 52 (19%) were studying in basic sciences, 140 (51%) were studying in clerkship and 82 (30%) were studying in internships.

The mean score of medical students' information literacy was 2.72 ± 0.56 out of a total score of 5. The average scores of students' information literacy and its various dimensions are shown in the table below. Comparison of mean scores with one-sample t-test showed that the level of information literacy of students in all dimensions except the information exchange dimension is significantly lower than the average of 3 (Table 1).

Comparison of the average level of information literacy of students by gender showed that there is a statistically significant difference between the level of information literacy of male and female students and the level of information literacy of male students is significantly higher than the level of information literacy of female students (p = 0.027). (Table2)

ANOVA test was used to compare the average level of information literacy of medical students by degree. The results showed that there is a statistically significant difference between the level of information literacy of medical students in basic, clerkship, and internship levels, and in higher levels the level of information literacy of students increases (Table 3).

Pearson correlation coefficient test was used to investigate the relationship between students' information literacy with the variables of age, gender, students' educational level, and parents' education level. The results showed that there is a positive and significant relationship between students' information literacy and research variables (Table 4).

Table 1. Comparison of average information literacy of students with average level

Variable	Mean± SD	t	P value
Information needs	2.79±0.72	4.83	0.00
Location information	2.72±0.65	7.12	0.00
Information evaluation	2.54±0.89	8.42	0.00
Organize information	2.53±0.64	11.96	0.00
Exchange of information	2.92±0.70	1.88	0.061
Total score	2.72±0.56	8.35	0.00

Table 3. Comparison of the average scores of students' information literacy by degree

Variable		Mean± SD	F	P value
I Information needs	Basic	2.10±0.81	29.067	0.0001
	Clerkship	2.79±0.69		
	Internship	3.00±0.68		
Location information	Basic	2.46±0.65	6.838	0.001
	Clerkship	2.59±0.70		
	Internship	2.87±0.70		
Information evaluation	Basic	1.82±0.78	21.272	0.0001
	Clerkship	2.58±0.89		
	Internship	2.74±0.90		
Organize information	Basic	1.99±0.66	22.086	0.0001
	Clerkship	2.50±0.69		
	Internship	2.73±0.60		
Exchange of information	Basic	2.77±0.88	6.642	0.002
	Clerkship	2.73±0.74		
	Internship	3.10±0.69		
Total	Basic	2.37±0.51	5.089	0.001
	Clerkship	2.71±0.51		
	Internship	2.94±0.55		

Table 2. Comparison of average scores of students' information literacy by gender

Variable		Mean± SD	t	P value
Information needs	male	2.77±0.85	4.13	0.001
	female	2.68±0.73		
Location information	male	2.55±0.69	3.41	0.004
	female	2.65±0.52		
Information evaluation	male	2.62±1.02	1.04	0.030
	female	2.38±0.86		
Organize information	male	2.56±0.71	0.025	0.081
	female	2.41±0.70		
Exchange of information	male	2.92±0.76	0.056	0.188
	female	2.80±0.77		
Total	male	2.81±0.59	2.22	0.027
	female	2.65±0.52		

Table 4. Correlation coefficients between information literacy and research variables

Variable		Age	Father's education	Mother's education
Information needs	r	0.308	0.231	0.232
	p	0.001	0.001	0.001
Location information	r	0.168	0.302	0.340
	p	0.040	0.001	0.001
Information evaluation	r	0.253	0.208	0.215
	p	0.001	0.001	0.001
Organize information	r	0.239	0.226	0.258
	p	0.001	0.001	0.001
Exchange of information	r	0.171	0.320	0.392
	p	0.030	0.001	0.001
Total	r	0.276	0.242	0.286
	p	0.001	0.000	0.000

Linear regression model was used to predict the effect of demographic variables on students' information literacy level. The variables of gender, age, and education of parents were studied using linear regression analysis and enter method, which showed significant results of the model: The results showed , R^2 set 0.210, $p<0.000$,$F=15.487$ .As can be seen from the set r^2, this model with five variables explains 21% of the changes in students' information literacy.

As can be seen in Table 5, maternal age and education were significant predictors, but predictors of father's age, sex, and education were not significant. Since the absolute value indicates that the predictor variable has a great effect on the criterion variable, so based on the t-statistic in Table 5, it can be concluded that the student's degree has more predictive power among other variables in this model. Therefore, students' educational level and mothers' education level are the best predictors of students' information literacy (Table 5).

DISCUSSION

The findings of this study, which was conducted to determine the level of information literacy of medical students in Ahvaz Jundishapur University of Medical Sciences, showed that the average score of information literacy and its dimensions in medical students is moderate, which is consistent with the findings of some studies. Sedghi (2016) in a study showed that the skills of the research community in understanding the need for information, search strategies, locating information, the use of information, the combination of information, and in terms of information evaluation was moderate. The general results of the research showed the average information literacy of graduate students. The results showed that there is a significant relationship between master's and doctoral degrees with the level of information literacy (12), which is consistent with the results of the present study.

By the increase of academic years, information literacy is one of the capabilities that students acquire during their studies. This will lead to relevant and specialized searches from various information sources which is in line with Taslimi's research, Panahi Rova, with the title of examining the level of information literacy skills of post-graduate students of Hamedan University of Medical Sciences (13,14).

Ebrahimi (2017) in a study showed that the average information literacy of undergraduate students was moderate and students were in a better position in information skills than other skills. Other findings showed that boys' information literacy is higher in problem definition skills than girls (15) which is consistent with the results of the present study in terms of differences in information literacy in different educational levels in terms of differences based on gender. The mismatch can be due to differences in the sample under study.

Gholami (2014) studied 433 students in a descriptive study titled "Assessment of Information Literacy of Undergraduate Students of Malek Ashtar University of Technology in Shahin Shahr". He used a 43-item questionnaire based on the 6 skills of Eisenberg& Berkowitz. During this study, it was found that the information literacy of the students was at an average level (16), which is somewhat similar to the present study.

Razmkhah (2015), in a study with the aim of investigating the information literacy of academic staff members and doctoral students with the aim of developing practical knowledge in relation to the level of information literacy in performing evidence-based care procedures, indicated that among faculty members and specialized doctoral students, nursing and midwifery faculty of Tabriz University of Medical

Table 5. Results of linear regression model for demographic variables

Variables	Not standardized coefficients		Standardized coefficients	t	p
	B	Std. Error	Beta		
Constant	2.033	0.665	-	-3.105	0.002
Age	0.006	0.031	0.015	0.182	0.856
Gender	0.096	0.062	0.083	1.536	0.126
Grade	0.305	0.068	0.376	4.475	0.000
Father's education	0.022	0.043	0.053	0.507	0.612
Mother's education	0.150	0.044	0.354	3.369	0.001

Sciences, the information of faculty members and students in all skills related to evidence-based care and information literacy standards, except for the standard of "information exchange and dissemination" is more than the average of the index, and the lowest is related to the "results evaluation" index, which is only the "results evaluation" index. It was consistent with the present study, which can be caused by the difference in the studied sample or the difference in learning methods. The average level of information literacy was also on the rise, which is in line with the results of the present study too. In Razmkhah's study, the target group was faculty members and doctoral students, while in the current study, medical students of three levels of basic sciences, clerkship and internship, this difference in results may be for this reason (17).

The low average score of the "Evaluation" factor compared to other indicators of information literacy in this research showed that, unfortunately students of the three levels of basic sciences and internship, have not acquired the skills of critical thinking, creative thinking, problem solving, questioning, and comparing different information sources with each other. In general, they have not acquired media and information evaluation skills, which is one of the most basic and difficult steps in teaching information literacy to any individual.

Therefore, it is better to hold training courses on critical thinking skills, creative thinking, problem solving, and questioning for both academic staff members and students so that they can acquire the skills to evaluate all types of information literacy and have a correct judgment about them. Of course, it is better to teach this skill to children from childhood through the education system, which requires policy and planning by decision makers in the country.

Ashraf Rizi et al. (2013) in a study showed that the average media and information literacy was above average and relatively favorable. The comparison between gender, marital status, media, and information literacy showed that there is no significant difference between information literacy and the mentioned variables, but there is a significant difference with the educational level variable (18), which is consistent with the present study.

The present study showed that the level of information literacy of male students is significantly higher than the level of information literacy of female students, that can be the basis of the differences in the psychological and personality characteristics of men and women which has caused these results, boys usually define their problem very clearly without paying attention to the details that cause ambiguity and confusion., while girls often "due to their special characteristic of paying attention to details, they may not be able to define the problem as clearly as boys."

Alipour et al. (2021) in their study conducted among postgraduate students of Zahedan Medical Sciences stated that the "information exchange and dissemination" index had the highest average and the "result evaluation" index had the lowest average, which was consistent with the present study. The average level of information literacy of the students was average (19). The results were consistent with the present study. In the study of Alipour, there was a significant relationship between the level of information literacy of students and the level of family income. In the present study, the level of education of mothers was found to be the best predictor of students' information literacy. In fact, it seems that the higher the level of education of the mother, the more capable the mother will be with information and communication, so she can raise her children with a deeper and more critical view. The way of education has the effect on children that they analyze the issues around them by examining their information and analysis. As a result, mother's literacy level can be a predictor of students' information literacy level, although there was no similar study in this field (20).

By involving mothers in the educational planning of students, we can use their knowledge in changing family patterns, technological changes, trends and opinions of society and legislation. Expanding these skills is valuable for parents, especially mothers and students. Mothers not only play the role of teachers, but also play an important role as coaches and supporters in the development of students

Measuring the information literacy level of three levels of medical students was one of the strengths of this study, which made it possible to compare their information literacy level. On the other hand, the limitedness of the research community can be considered as the weak point of this research, and it is suggested that more studies be done at the regional or national level.

The results of this study showed that the average information literacy of medical students was average. Since the students were studying at the professional doctoral level, it requires special attention to improve their literacy level. Since the evaluation index has obtained the lowest average among information literacy indicators, the university officials should organize classes and educational workshops and even conferences with topics related to the evaluation and analysis of media and information, including critical thinking, problem solving, questioning and identification, and authentic media to improve students' information literacy levels.

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. The ethics committee of Jundishapur University of Medical Sciences approved this research, ethics code IR.AJUMS.REC 1396.841.

ACKNOWLEDGEMENT

The authors would like to thank all the students who participated in this study.

Financial Support: This research is approved and financially supported by the research committee of Jundishapur University of Medical Sciences grant number GP. 96.85.

Conflict of interest: The authors declare that there is no conflict of interest.

REFERENCES

1. ALA. Information Literacy Competency Standards for Higher Education-introduction. Guidelines & Standards: Information Literacy Competency Standards for Higher Education; 2002. Available From: http://archive.ala.org/acrl/il/toolkit/intro.html#f1. Accessed February 8, 2012. DOI: 10.18352/lq.8167
2. Williams MH, Evans JJ. Factors in information literacy education. Journal of Political Science Education. 2008;4(1):116-30.
3. Kohi K, Niroomand L, Dindar Farkosh F, Tajik Esmaeili S. Qualitative Comparison of Media Literacy with Internet Filtering among Male and Female Students in Ilam. Women Studies. 2019;10(30):99-114. Persian.
4. Kamalipour M, Azad M, Ashkani N, Esmaeilzadeh Z. Students' Media Literacy and Information Literacy in Para Medicine, Nursing and Midwifery Faculties of Bandar Abbas University. J Mod Med Info Sci. 2017;3(1):37-43. Persian.
5. Meulen DV. Teaching undergraduates research skills by doing and reflecting. InCeROArt. Conservation, exposition, Restauration d'Objets d'Art 2017 May 22 (No. HS). Association CeROArt asbl. https://doi.org/10.4000/ceroart.5055
6. Mariño R, Habibi E, Morgan M, Au-Yeung W. Information and communication technology use among Victorian and South Australian oral health professions students. Journal of dental education. 201;76(12):1667-74.
7. Alishan Karami N, Bakhatyarzadeh A, Khajeh E, Safa O. Information Literacy of Medical Students Studying in Second Year of Bandar Abbas of Medical School, 2002-3. Nama (Res Electronic J Inform Sci) 2007;7(1). Persian.
8. Choi JR, Straubhaar J, Skouras M, Park S, Santillana M, Strover S. Techno-capital: Theorizing media and information literacy through information technology capabilities. New media & Society. 2020:1461444820925800. https://doi.org/10.1177/1461444820925800
9. Bazrafkan L, Hayat AA, Abbasi K, Bazrafkan A,Rohalamini A, Fardid M. Evaluation of information literacy status among medical students at Shiraz University of Medical Sciences. Journal of Advances in Medical Education & Professionalism. 2017; 5(1):42 .PMID: 28124020. Persian.
10. Karami Namivandi S, Sharifi SM, Janavi E. Identifying Solutions for Increasing Media and Information Literacy among Faculty Members and Students of Iranian Universities. Journal of Communication Research. 2017;24(92):99-124. https://doi.org/10.22082/cr.2017.58194.1270Persian.
11. Yazdani F. Designing a tool for assessing information literacy of students of Payame Noor University of Hamadan Province. Quarterly Journal of Information and Communication Technology in Educational Sciences. 2012;4(2):29-52. Persian.
12. Sedghi S, Abdi F, Panahi S. Informational literacy level of postgraduate faculty students of rehabilitation sciences at Iran university of medical sciences based on the eisenberg model. J Mod Med Info Sci. 2018; 4(1):30-38. Persian.
13. Taslimi M. The evaluation of information literacy in both scientific and practical experts PolyAcryl Iran [Dissertation]. Esfahan: Esfahan; 2011. Persian.
14. Panahirava N, Mokhatab M. Survey the information literacy skills of graduate students in Hamadan University of Medical Sciences. Proceedings of the first congress of new technologies to achieve sustainable development; 2014 Jan 4; Tehran: Iran. Minushahr: Mehr Arvand University; 2014. Persian.
15. Ebrahimi Z, Faghih Aram B. The Relationship between Media Literacy and Information Literacy with Metacognitive Skills and Creativity of Students of Islamic Azad University, Islamshahr Branch. Quarterly Journal of Communication Research, 2018; 24(4):125-52. https://doi.org/10.22082/cr.2017.28792.Persian.
16. Golami T. Evaluation of information literacy of undergraduate students of Malek Ashtar University of Technology Shahinshahr. Quarterly Journal of Information Systems and Services. 2015; 4(15):1-12. Persian.
17. Moghadam HS, Salami M, Narimani MR, Razmkhah M. The rate of information literacy of faculty members and PhD students of faculty of nursing and midwifery based on successful evidence healthcare. Journal of Nursing Education. 2016;5(4):60-68. Persian.
18. Ashraf Rizi H, Ramezani A, Aghajani H, Kazempour Z. Assessing students' media and information literacy Isfahan University of Medical Sciences. Quarterly Journal of Information Systems and Services. 2014;6(2):17-34. doi: 10.5455/aim.2014.22.393-397. Persian.
19. Alipour J, Farsadhabibi H, Karimi A. Media and Information Literacy Among Postgraduate Students. Applied Health Information Technology. 2021;2(1):2-10. DOI: 10.18502/ahit.v2i1.6163. Persian.
20. Kiani H, Tajdaran M, Poya K. The effect of parents' education level and in improving information literacy of pre-university students in public and private high schools. Journal of Knowledge Studies. 2016;9(32):81-8. Persian.