ORIGINAL ARTICLE

The Effect of Electronic Training on the Midwives' Communication Skills with Clients in the City Health Centers (under Coverage of No. 2 Mashhad Health Center)

Ali Emadzadeh[1]; Shokoofeh Mazhari Ravesh[1,*]; Mehri Yavari[2]; Hasan Gholami[1]
[1]Department of Medical Education, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
[2]Mental Health and Management Department, Faculty of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran

[*]Department of Medical Education, School of Medicine, Mashhad University of Medical Sciences
Azadi Sq.
Mashhad, 9177948564
IRAN

Tel: +985 138 002 432
Fax: +985 138 002 737
E-mail: Mazharish1@mums.ac.ir
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Background: Communication skill is considered as one of the main features of employees in the health centers. The midwives should make an influential connection with their patients in order to realize the purposes of health. Electronic training is a new method that is accessible and flexible for learning. The present study aimed to determine the impact of electronic training on communication skills of midwives.

Methods: This is a semi-experimental study. 33 midwives working in the health centers in Mashhad participated in the study. Firstly, their communication skill was assessed via direct observation and using the checklist, in which, the validity was 84% and the reliability was 86% evaluated by the test – retest method. The participants had communication skill training by electronic method and were evaluated after the training. The data were analyzed by SPSS and Paired t test, Wilcoxon, Kolmogorov-Smirnov.

Results: The results present that there is statistically significant difference in the scores of communication skill before and after intervention ($p<0.05$). The average score of communication skill of the midwives was 1.26 before training and changed to 1.75 after intervention. Furthermore, the communication skill of midwives was reported weak before training, only 46.1% of them had communication skill thoroughly, and after intervention the percentage of the people enhance to the appropriate level and in accordance with the results 77.8% of them could gain good communication skill.

Conclusions: The midwives' communication skill increased after training. Therefore, electronic training could be used in order to gain better communication skill among the midwives.

Keywords: Communication Skills, Electronic training, Midwives

دراسة مستوى تأثير التعليم بالاسلوب الإلكتروني على مهارة إيجاد الارتباط مع المراجعين عند القابلات العاملين في المراكز الصحيه المدنيه-

المقدمه : إن المهارات الإرتباطية تعتبر من أهم الخصائص اللازمة عند العاملين في المجالات الطبية و الصحية و إن القابلات في سبيل الحصول على الأهداف يجب أن يكون لديهم إرتباط مؤثر مع المراجعين . وإن التعليم الألكتروني هو أسلوب حديث و سهل الوصول و ذو مرونه في التعليم الإلكتروني على مهارة ايجاد التواصل عند القابلات .

أسلوب العمل : اشترك ثلاث و ثلاثون من القابلات العاملات في المراكز الطبيه، في هذه الدراسة النصف تجريبية في البداية تم مشاهدة مهارة التواصل بشكل مباشر وأيضا تم إستخدام أستمارة بالضريب السندى ٠،٨٤ و الثبوت ٨٦٪ و بعد ذلك تم تعليم مهارة التواصل بالأسلوب الإلكتروني و من ثم تم تقييم هذه المهارة بواسطة استمارات . تم تجميع المعلومات و تحليلها عبر برنامج SPSS و إختبار T الزوجي، ويلكسون، كليموجروف – اسميرنف، ضريب الترابط بيرسون و اسبيرمان.

النتائج: أشارت النتائج ألى إختلاف واضح في معدل المهارات التواصلية عند القابلات قبل و بعد المداخلة التعليمية $P<0.05$. حيث أن معدل علامة مهارة التواصل عند القابلات قبل التعليم إرتفعت من ٢٦،١ إلى ٧٥،١ بعد التعليم . و أيضا بناء على المعطيات المرتبطة بهذه المهارة عند القابلات قبل هذه الدراسة أشارت إلى ضعف شديد بحيث أن قبل التعليم كان هناك ١،٤٦٪ من القابلات لديهم مهارة تواصل بشكل كامل (المهارة الكلامية ٩،٣٦٪ و المهارة الغير كلامية ٦،٣٣٪) و بعد التعليم إرتفعت نسبه المهارة الإرتباطية بشكل واضح ($p>0.05$) و أشارت النتائج إلى أن ٨،٤٧٪ من القابلات قد امتلكوا هذه المهارة بشكل عالي جدا.

الأستنتاج: إرتفعت نسبة المهارات التواصلية و الإرتباطية عند القابلات بعد المداخلة، لذا نستطيع القول أن التعليم الإلكتروني مفيد في مجال إمتلاك مهارة التواصل عند القابلات.

الكلمات المفتاح: مهارات التواصل – التعليم الإلكتروني – القابلة .

قاین یونیورسیٹی کی میڈیکل یونیورسٹی اور دیگر یونیورسٹیوں میں طلباء کی تنقیدی فکر اور خوش رہنے کا جائزہ۔

بیک گراونڈ: تعلیم میں پیشرفت کرنا ان مسائل میں سے جن پر اعلی تعلیم کا شعبہ اور یونیورسٹی نظام تعلیم بہت زیادہ تاکید کرتا ہے۔تنقیدی فکر اور مسئلے کو حل کرنے کی صلاحیت اعلی تعلیم اور یونیورسٹیوں کو اعتبار عطا کرتی ہے۔خوشی اور خوش رہنا انسان کا یا بنیادی جذبہ ہے جو فردا اور معاشرے کی سلامتی میں اہم کردار ادا کرتی ہے اور انسان کی تنقید فکر کو پروان چڑھانے میں رول ادا کرتی ہے۔ یہ تحقیق مختلف یونیورسٹیوں کے طلباء کے درمیان تنقیدی فکر کا جائزہ لئے جانے کے لئے انجام پائي ہے۔

روش: یہ تحقیق ایک تجزیاتی تحقیق ہے جس میں قاین کی مختلف یونیورسٹیوں کے دو سو چوالیس طلباء نے شرکت کی۔ تحقیق میں شرکت کرنے والے طلبا کو رائٹکس کا تنقیدی فکر کا سوالنامہ اور آکسفوردؒ یونیورسٹی کا سوالنامہ جس میں خوش رہنے کےبارے میں سوال کئے گئے تھے دیا گیا۔ ڈیٹا کا ایس پی ایس اور ایڈیٹ چودہ نیز پیرسن ٹسٹ، ٹی ٹسٹ اور اینووا ٹسٹ کے ذریعے تجزیہ کیا گیا۔

نتیجے: تحقیق میں شرکت کرنے والے دو سو چوالیس طلبا میں سے ایک سو ترسٹھ لڑکے تھے اور اکیا سی لڑکیاں تھیں۔تحقیق سے پتہ چلتا ہے کہ تنقیدی فکر، خوش رہنے میں یونیورسٹیون میں آپس میں کافی فرق پایا جاتا ہے، اس کے علاوہ خوش رہنے اور تنقیدی فکر میں بھی خاصہ رابطہ پایاجاتا ہے۔

سفارشات: طلباء کے درمیان تنقیدی فکر کو پروان چڑھانے کے لئے کوشش کرنی چاہیے اور اساتذہ کو چاہیے کہ وہ تعلیم کی نئي روشوں سے استفادہ کرتے ہوئے طلباء کے خوش رہنے کے سامان فراہم کریں۔

کلیدی الفاظ: خوش رہنا، یونیورسٹی اور تنقیدی فکر۔

بررسی تاثیر آموزش به شیوه الکترونیک برمهارت برقراری ارتباط با مراجعین در ماماهای شاغل درمراکز بهداشتی درمانی شهری

مقدمه: مهارت‌های ارتباطی به عنوان یکی از مهمترین ویژگی‌های لازم برای شاغلین مراقبت های بهداشتی توصیف شده است و ماماها در راستای نیل به اهداف باید ارتباط مؤثری با مددجویان داشته باشند. جهت دسترسی آسان و قابل انعطاف یادگیری، آموزش الکترونیک روشی نوین می‌باشد، از این رو مطالعه حاضر با هدف تعیین تاثیر آموزش الکترونیک بر مهارت برقراری ارتباط ماماها شد.

روش کار: در این مطالعه نیمه تجربی، ۳۳ نفر مامای شاغل در مراکز بهداشتی درمانی شرکت داشتند. ابتدا مهارت ارتباطی آنان از طریق مشاهده مستقیم و با استفاده از چک لیست با ضریب روایی ۰،۸۴ و پایایی به روش بازآزمایی ۸۶٪ اندازه‌گیری شد سپس مورد آموزش مهارت‌های ارتباطی به شیوه الکترونیک قرارگرفتند و مجددا مهارت ارتباطی آنان توسط چک لیست سنجیده شد و داده‌های حاصل جمع آوری و با نرم افزار spss و آزمون تی زوجی، ویلکاکسون، کلموگروف-اسمیرنف، ضریب همبستگی پیرسون و اسپیرمن تجزیه و تحلیل شد.

نتایج: نتایج حاصل از تجزیه و تحلیل داده ها نشان دهنده اختلاف معنادار نمره مهارت های ارتباطی ماماها در قبل و بعد از مداخله آموزشی می‌باشد($p<۰/۰۵$)، بگونه‌ای که میانگین نمره مهارت برقراری ارتباط ماماها در قبل از آموزش از ۱/۲۶ به ۱/۷۵ در بعد از آموزش تغییر یافت. همچنین براساس یافته‌های حاصل از تحقیق، به طور کلی مهارت برقراری ارتباط ماماها در قبل از آموزش ضعیف گزارش‌شده بود، بطوری که در قبل از آموزش تنها ۴۶/۱٪ افراد مهارت ارتباطی را به طور کامل دارا بودند (مهارت کلامی۳۶/۹٪ و مهارت غیرکلامی ۲۳/۶٪)، که بعد از آموزش در صد افراد با سطح مطلوب مهارت ارتباطی در سطح معناداری ($p <۰/۰۵$) افزایش داشت و براساس نتایج ۷۷/۸ درصد افراد توانستند مهارت برقراری ارتباط مناسبی با مراجعین خود برقرار نمایند.

نتیجه‌گیری: مهارت‌های ارتباطی ماماها پس از مداخله افزایش یافته است. بنابراین می‌توان از آموزش الکترونیک جهت کسب مهارت برقراری ارتباط مناسب‌تر در ماماها استفاده نمود.

واژه های کلیدی: مهارت های ارتباطی، آموزش الکترونیک، ماما

INTRODUCTION

Nowadays, medical education focuses on human and communication skills rather than specialization and theoretical education (1). Communication is a human skill that could be enhanced by education and training that is known communication skill. These skills are inseparable part of clinical activities of a doctor (2). One of the most important aspects of the medical sciences is the human aspect and communication skill is considered as one of the main general skills (3). Different studies have presented that communication skills training for the staff are one of the main methods to improve the quality of care, since it results in the change of their behavior and attitude toward the efficiency of the skills, the enhancement of their job satisfaction and also recognition of the patients' needs, making positive change in the clinical condition and gaining the patients' satisfaction (4). Consequently, communication skill is recommended as the most important feature required for the people working in primary health care centers (5) and is considered as one of the indexes of eligibility criteria and capability of the health care personnel (6, 7).

Mothers' health is known as one of the development indexes and millennium development goals that could be upgraded with effective strategies for health. The enhancement of the communication between mother and midwife is one the most influential strategies to increase the quality of midwifery services and enhance the mothers' health. In other words, an appropriate communication could be even more influential than pharmacotherapy in some cases. In addition, inappropriate communication could have negative effect on the improvement of the patient and even deprive the patient from a healthy life permanently (9). Furthermore, the studies have shown that communication problems are the main cause of complaint among pregnant women and most of them complain about the amount and quality of the data they receive (10). Therefore, the enhancement of the communication with the midwife is one of the most effective strategies to develop the quality of midwifery services and the mothers' health (8).

One of the suggested approaches to teach clinical skills and eliminate the gap between education and clinical situations, is to change the traditional teaching methods including lecture to programs that increase the clinical skills and decision making practices. Clinical training requires different training situations and different teaching methods should be used to teach clinical skills (11). Meanwhile, teaching via the internet is a new method that has conquered some barriers to learning in the traditional methods. It is more accessible and flexible to learn from the internet, (12) it assists to provide services with efficient and low cost method (13).

In electronic learning system, the learner and the teacher make communication using the tools and equipment provided by technology (14). Teaching via the internet is a new easy to access and flexible method to learn. This method is accessible for people who live in far places, in addition, the cost of travel, waste of time and the problems of substituting human resources reduces and also it facilitates the exchange of information and skills that confirms the cost effectiveness of the method (15).

It should be noted that the number of applicants for retraining courses is increasing day by day among the midwives, while the in-person courses are not sufficient, on the other hand, most of the applicants are working in deprived and far areas and have lots of social and family responsibilities, that makes it difficult for them to participate in the in-person courses. E-learning could be a solution to this problem and solve it (16).

METHODS

This is a quasi-experimental study, with intervention and pre-test and post-test method. The sample population was all the midwives working in the Health Centers and subsidiaries places that work under the supervision of health center of zone two of Mashhad. The sample was, according to the research community and included all the midwives that provide services before, during and after pregnancy.

Firstly, the research was explained to the participants and they received the informed consent form, then, the researcher went to the health centers in person and determined the communication skills in accordance with the checklist.

The data were collected by the demographic questionnaire and the checklist of communication skills. The checklist was developed in accordance with the Calgary- Cambridge guide to the medical interview. This guide explained the process of communication skills in five steps in medical interview, including:

30. The beginning of the interview, 2. Data collection, 3. Physical examination, 4. Description and programming, 5. The end of the session (17). The checklist of the present study included 15 items. Thirteen items had three modes "thorough implementation of the skill, the incomplete implementation of the skill, not implement the skill". The other two items had only two modes "thorough implementation of the skill and not implement the skill".

The validity of the checklist was determined using content validity. It was assessed 84% using the experts' opinions. Test-retest method was used to determine the reliability. The test was held at two times (within two weeks) with the same group of the participants and the score were compared together. The reliability coefficient was 86% in accordance with the test-retest method.

Then, the content of the training course, including introduction, principles of interpersonal communication skills, principles of patient-doctor communication, appropriate communication techniques, effective verbal and nonverbal skills to begin a meeting, data collection of the patient, training and ending the session were provided in multi-media formats. The content was reviewed by the teachers of medical education and midwifery and they confirmed the validity.

In the next step, the content of the course was provided on the portal in cooperation with the Virtual Training Center of Mashhad University of Medical Sciences. Each participant had a username and password to sign in the portal and study the program online or off line. Then, they had three weeks to study the program and after one month their communication

Table 1. Demographic feature including age and work experience

Variable	Mean	Standard Deviation	Least	Most
Age	34.87	5.76	24	49
Work Experience	9.06	4.99	1	18

skills were assessed again. In the end, the data were analyzed via SPSS, Paired t test, Wilcoxon test and Spearman and Pearson correlation coefficient.

RESULTS

In the present study, the total number of the study population was 45 midwives. 12 of them were extracted at the beginning or during the study due to lack of required qualification such as not working in the midwifery section, having less than 6- months work experience in the health center, not having access to the internet and the content of the course, or having problem to thoroughly study the content of the course during the study, moving from their work place.

The participants' mean age was 35 and the mean of their working years was 9. 79% of the midwives were married. Most of them had B.S., 55 percent of them were officially employed and the 9 percent of them were not employed officially and had employment contract. Most of the participants were interested in their major and work place.

The results showed that there is no significant relationship between the impact of e-learning on the performance of the midwives and their demographic information including age, work experience, marital status, degree, employment condition, and interest in the field. It is declared that the mentioned factors have no impact on the enhancement of communication skills after the training. There was only significant relationship between the impacts of e-learning on the midwives' performance based on their interest in the workplace. The results show that if the midwives were interested in their workplace they had better performance in communication.

In relation with the impact of e-learning on the communication skill with the patients among the midwives working in the health centers, the results showed that, in accordance with the probability of paired t-test, the mean score of the midwives' communication skill was 1.26 in pre-test and 1.75 in post-test which is a statistically significant difference ($p \leq 0.0001$). In other words, training has had a positive effect on the enhancement of communication skills of the midwives (table 6). Furthermore, the results showed that e-learning has had a positive influence on the verbal and non-verbal communication skills of the midwives. The score of verbal communication was 1.13 before the intervention and increased to 1.70 after the training (table 7). In addition,

Table 2. Frequency distribution based on marital status

Marital status	Absolute frequency	Relative frequency
Single	7	21%
Married	26	79%

Table 3. Frequency distribution of midwives based on education

Degree	Frequency	Percentage of frequency distribution	Cumulative frequency	Percentage of cumulative frequency
Associate Degree	3	9%	3	9%
Bachelor	30	91%	33	100%
Total	33	100%		

Table 4. Frequency distribution based on the employment status

Employment status	Frequency	Percentage of frequency distribution	Cumulative frequency	Percentage of cumulative frequency
Official agreement	18	55%	18	55%
Contractual agreement	3	9%	21	64%
Casual agreement	8	24%	29	88%
Project agreement	4	12%	33	100%
Total	33	100%		

Table 5. Frequency distribution based on the interest in the field		
Interest in the field	**Absolute frequency**	**Relative frequency**
Yes	30	91%
No	3	9%

the score of non-verbal communication skill developed from 1.53 to 1.84 after the training (table 8).Table 9 presents the frequency distribution of the study population based on the variables of the study. In accordance with the results of the indexes of participants' scores of the variables (communication skill, verbal and non-verbal communication) in the pre and posttests, it was determined that the percent of the participants that gain the total score (score 2) increased in all variables of the study after the intervention. The ones that gained score one or zero (including incomplete implementation and did not have the skill) decreased in all mentioned variables which shows the positive impact of training on the communication performance of the midwives.

DISCUSSION

Communication skills training is one of the medical education arenas and is dependent on it that is considered more in the recent years. Moreover, several studies have been conducted on it and its impact on the results of the treatment and the quality of care. The studies show that training has a significant impact on the communication performance of the midwives and other staffs working in the health centers.

However, different studies have reported weakness of the health service providers and midwives in communication skills. The result could be due to lack of training. Consequently, it is recommended to have communication skill training programs to enhance the performance of the staff. Among the teaching methods, e-learning has become very popular owning to different various benefits.

In accordance with the results of the present study, the communication skills of the midwives are weak in the pretest, and only 46.16 percent of the participants had the skill thoroughly. Then, after the intervention and training the percentage of the people who had the skill thoroughly was reported 77.82%, which showed the positive impact of training on the performance of the midwives. This result is consistent with the study of Katebi et al. That reported communication skill training increases the score of midwives' scores of communication behavior. The midwives' mean score of communication, increased from 86.42% to 97.76 after the intervention during 2 – 4 week (8). Furthermore, in the review study conducted by Liu and his colleagues in china, it was presented that the results of most of the studies show the communication skill of the doctors and medical students could be enhanced by communication skills training (18) that is consistent with the results of the study of Cinar et al. in Turkey conducted for the residents of Emergency Medicine (19).

In addition, it is consistent with the study of Watling and Brown conducted on neurology residents showed that their communication skills increased after participation in a communication skill training workshop and the participants stated that these trainings could enhance the interaction of the patient and the doctor (20).

The results of the study showed that verbal communication

Table 6. The impact of e-learning on the communication skills of the midwives					
Steps	**Mean**	**Number**	**Standard deviation**	**T-test**	**Significance level**
Pre-test	1.26	33	0.17	-13.68	0.0001
Post-test	1.75	33	0.13		

Table 7. The impact of e-learning on the verbal communication skill					
Steps	**Mean**	**Number**	**Standard deviation**	**T-test**	**Significance level**
Pre-test	1.13	33	0.20	-13.12	0.0001
Post-test	1.70	33	0.15		

Table 8. The impact of e-learning on non-verbal communication skill					
Steps	**Mean**	**Number**	**Standard deviation**	**Wilcoxon**	**Significance level**
Pre-test	1.53	33	0.30	-3.92	0.0002
Post-test	1.84	33	0.17		

Table 9. Descriptive indexes of the scores of the participants in the variables of the study

Variable	Level of skill	Pretest		Posttest	
		Absolute frequency	Relative frequency	Absolute frequency	Relative frequency
Verbal communication skills	thorough implementation of the skill (score 2)	122	36.96	241	73.03
	the incomplete implementation of the skill (score 1)	131	39.69	81	24.54
	not implement the skill (score 1)	77	23.33	8	2.42
Non-verbal communication skills	thorough implementation of the skill (score 2)	107	64.84	145	87.87
	the incomplete implementation of the skill (score 1)	39	23.63	15	9.09
	not implement the skill (score 1)	19	11.51	5	3.03
Communication skills	thorough implementation of the skill (score 2)	229	46.16	386	77.82
	the incomplete implementation of the skill (score 1)	170	34.27	96	19.35
	not implement the skill (score 1)	96	19.35	13	2.62

skill was not desirable before training while there was a significant difference after the intervention. The study of Taghizadeh and his colleagues presented that the level of verbal communication is not desirable among the midwives and only 38% of them are at an optimum level, (21) in addition, the study of Barati and his colleagues declared that verbal communication skill of the participants was 36.7% which is not desirable (22). These results are consistent with our study. However, our result is not consistent with the study of Pakgohar that reported the verbal skill of more than 50% of the counselors of family planning are in a desirable level (23).

The results of the study showed that although non-verbal communication skills of the midwives were desirable to some extent, their non-verbal communication enhanced after the training which determines the efficiency of the training. In this regard, the results of the study of Sadeghi Sharme, Amiri and his colleagues showed that although the non-verbal communication skills of the nurses were in high level before intervention (72.3%), training has had a positive effect on the behavior of the nurses with the patients and caused the enhancement of their communication skills and their non-verbal communication skill increased after the intervention to 79.20% which is consistent with the present study (4).

The results of different studies have shown that e-learning could be an independent method that have the potential impact to reach educational purposes. In the analysis of the e-learning educational method, the results showed that the impact of e-learning courses is similar to in-person in the enhancement of learning and knowledge. The study of Mohammad Hussein Delshad and his colleagues presented that web-based training has gained the satisfaction of the staff of health centers (24). Weber and his colleagues used a computer to teach physical examination of the abdomen to the students and midwifery, it was determined that this method could help the weaker students more (25). In addition, Kuo et al showed that e-learning increased knowledge and self-confidence of mothers to take care of their babies (26). All these studies are consistent with our study. However, some studies have reported different results. Gustafson and his colleagues conducted a study using computer- based education to teach about breast cancer. Their results showed that there was no significant difference between the two groups of computer-based and brochure-based training (27). The study of Mitra Zolfaghari and his colleagues on the impact of e-learning and lecture methods about the health of mother and child to the nursery students of Tehran University of Medical Sciences showed that the results of the groups were similar (28). It seems that the difference in the findings of the studies is due to the difference in the study population and their different points of view and the different of time by using e-learning method.

In relation to the influence of e-learning on the performance of midwives and their personal information, the results showed that lack of influence of each component of the increase of communication skill is due to training, which is consistent with the study of Amini and his colleagues (29). However, the study of Barati and his colleagues showed that age, gender, degree is the most important influential factors on the communication skills. Furthermore, in the study of Amiri et al, there was a significant difference between age and the score of communication skills. The nurses who were older than 40 gained the highest score of communication skill, (4) which is consistent with the study of Rezaee and his colleagues on doctors' communication skill and the study of Rezaee determined that the doctors that were elders and had more work experience, paid more attention to communication skill and gained higher score (30) it is not consistent with the study of Barati and ours. In relation to the reduction of the level of application of communication skills with the level of interest in the workplace, it is probable that the lower level of interest in the workplace results in burnout and lack of motivation that could influence their performance and communication skill. The higher level of staffs' skills could be due to their less work experience and lower age in comparison to others that could be explained by considering the high level of motivation, which is

consistent with the study of Barati and his colleagues (22). Since in the health system of Iran, health care providers and midwives are the first people who provide services, they shoulder the first level of responsibility, their skills should be improved in this respect. Therefore, in accordance with the important role of communication skills and the results of the present study, the level of communication skills was not desirable among the midwives. Furthermore, e-learning has had a positive effect on the communication skills of the participants. Therefore, it is recommended to have continuous training programs as a practical part of the education in order to increase the quality of care and upgrade the health system level. In accordance with the benefits of the e-learning method, it could be used as a complementary program or substitution for the traditional and current methods.

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