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Original Article

A study on the effect of virtual communication skills education with a cognitive-behavioral approach on communication skills of midwifery personnel in healthcare centers

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Abstract

Background and aims: Effective communication between caregivers and clients is necessary for high-quality healthcare, and The ability to communicate with midwife caregivers is associated with better management of reproductive health problems in middle-aged women. This study aimed to investigate the effectiveness of communication skills training with a cognitive-behavioral approach to the communication skills of midwives in these people in the city of Shahrekord and the suburbs.

Methods: This quasi-experimental single-group study was designed in a pretest-posttest approach, participating 51 midwife caregivers working on a questionnaire and Barton's standard communication skills questionnaire filled by the research units in the Porsline webpage before, immediately after the intervention, and one month later. The intervention included teaching communication skills with a cognitive-behavioral approach using virtual education packages weekly during six sessions through WhatsApp messenger. Where appropriate, data were analyzed using the parametric repeated measure ANOVA or Friedman test. Statistical significance was defined as $P<0.05$, and analysis was done by using SPSS 24.

Results: The total communication skills were 65.2 ± 5.6 in the pre-intervention phase and increased to 67.1 ± 6.3 in the post-intervention stage. There was no significant difference in the subscales of verbal, listening, and feedback skills ($P>0.05$).

Conclusion: Despite a positive effect on the midwives' communication skills, virtual education of communication skills with a cognitive-behavioral approach could not significantly change the field. Therefore, it is necessary to conduct further studies in the field to determine effective educational methods for retraining healthcare providers.

Keywords: Virtual education, Communication skills, Cognitive-behavioral approach, Midwifery caregivers, COVID-19

Introduction

Communication skills refer to individuals' abilities to establish positive and effective verbal and non-verbal communication with others and evaluate their feelings and emotions (1,2). According to studies, many employees consider its effect on job success more important than their technical and specialized skills (3). The importance of such communication is more prominent, especially for primary healthcare teams, because primary care is the point of entry of people to the health system, and the ability to communicate is associated with better management of health problems that can affect the healthcare recipients' behavior and overall health outcomes (4). Healthcare providers play essential roles in supporting the clients' compliance with self-care principles, which may be providing information, emotional support, and helping the clients' lifestyles (5). Effective communication has positive outcomes in many aspects, including disease prevention, effects on recovery rate, adequate pain control, adherence to the treatment plan, and improvement of patients' psychological performance. However, the inability to establish proper communication is a powerful obstacle to healthcare, leading to the concealment of clients' problems and needs,

disruption in obtaining correct information, and reduced satisfaction (3,6). According to research on clients' satisfaction in health centers in Mozambique, positive interaction between healthcare providers and recipients could significantly increase the clients' satisfaction (7).

Research shows that health caregivers do not have the necessary ability to establish a good relationship with clients (3,8,9). A study's mean score of communication skills among nursing and midwifery students indicated difficulty in communication with clients (10). Taghizadeh et al reported that the level of verbal communication could have been more desirable among midwives, and only 38% of them were optimal (11). In a study by Emadzadeh et al, verbal communication skills were not desirable in 36.7% of the participants (9).

A significant goal of communication skills education is to allow learners to practice expressions and behaviors consistent with their personalities. The most critical communication skills, which must be learned in the healthcare system, are as follows: asking, explaining, and giving information, listening, reinforcing, and reflecting; and starting and ending communication according to the clients' satisfaction. Many skills include verbal and non-verbal aspects; hence, both aspects should be considered in communication skills education (12).

Due to the complexity of physiological and psychological changes in middle-aged women, the importance of practical communication skills in this age group is more evident because people must pass the middle-aged stage well to have the necessary psychological and self-care skills in old age. At this age, the most critical needs of women include the need for information, sympathy, positive feedback, and a suitable space to express feelings which can only be achieved through effective communication between the midwife and the client (13). Studies indicate that healthcare professionals need to be born with excellent communication skills. However, instead, they can understand the theory of good caregiver-client communication, learn, and practice this skill. They can modify their communication styles if there is sufficient motivation for self-awareness, self-monitoring, and education (14).

The ability to communicate is not only a personality trait but also refers to a series of skills that can be learned and improved. However, unique methods are needed to teach and learn them. A skill-based approach is necessary to change it (12). Research shows that healthcare providers in Asian countries experience higher levels of occupational stress than Western ones, so that Asian healthcare providers may take more advantage of a cognitive-behavioral approach. However, more research is needed to judge it (13). This approach can be fundamentally effective in improving people's communication performance due to intellectual change, reconstruction, and correction of cognitive distortions (12).

Today, in addition to paying attention to expertise and theoretical training, medical education focuses on communication and human skills. (15), but education for achieving optimal communication skills still need to be a priority of the educational program in the health care providing systems (16). Therefore, we conducted the present study to determine the effectiveness of virtual education of communication skills with a cognitive-behavioral approach to midwives' communication skills in the healthcare system of Shahrekord and the suburbs.

Materials and Methods

The present research was a quasi-experimental study approved by the Research and Technology Deputy of Yazd University of Medical Sciences with code 8570 and code of ethics IR.SSU.REC.1399.213. It had a before-after method in single-group and examined 51 midwifery caregivers working in health centers of Shahrekord and suburbs in Chaharmahal and Bakhtiari province from January to May 2021. Inclusion criteria: willingness to participate in the research, having a degree in midwifery at different levels of academic education, working in healthcare centers, at least one year of work experience, working in the target unit until the end of the research period, and having Android or IOS operating system based intelligent mobile phone. Exclusion criteria: missing more than two education sessions, leaving some parts of the questionnaire blank, and participating in similar simultaneous studies. The research tools included the demographic characteristics questionnaire and Barton's Communication Skills Questionnaire.

The demographic characteristics questionnaire comprised six questions about personal and occupational characteristics, including age, education level, years of service, place of service, marital status, and type of employment in the health system. The standard questionnaire of communication skills was prepared and adjusted by Barton in 1990, translated to Farsi, and validated by Mohammad Moghimi (17). The questionnaire comprised 18 questions in three fields, verbal, listening, and feedback skills. Each question was evaluated based on a five-point Likert scale of strongly disagree, partially disagree, neutral, partially agree, and strongly agree, with a score of 1 to 5, respectively. In this questionnaire, the lowest score was 18, and the highest was 90. A higher score indicated a higher level of communication skills. It has been used in many studies, and its scientific validity and reliability were confirmed using the content validity ratio (CVR) and Content Validity Index (CVI). Using Cronbach's alpha method, its reliability was 0.8 for the entire questionnaire, 0.714 for verbal skills, 0.705 for listening skills, and 0.700 for feedback skills (8,18,19). Data collection was performed in three stages before, immediately after the intervention, and during the follow-up stage (one month later).

The study included the research units based on the inclusion criteria after obtaining informed consent and permission from the ethics committee. A letter of

recommendation from the research and technology deputy of the university to present to the health center of Shahrekord County. According to the virtual intervention program and online questionnaires, a WhatsApp group was created, and participants joined due to the COVID-19 epidemic. The links between the demographic information and Barton's Communication Skills questionnaires, designed with Porsline software, were sent to the research participants in the virtual system. The participants received necessary explanations on the questionnaire method and were assured that their answers would remain confidential.

After data collection, virtual education packages of communication skills with a cognitive-behavioral approach prepared as multimedia and comprised of an audio file, a slide show, and practical assignments based on the scenario, were sent to the research units via the virtual environment in 6 weekly training sessions.

The educational content was in Farsi and was prepared to improve the ability to communicate effectively and positively with clients and use the principles of the cognitive-behavioral approach (Table 1). The participants asked their questions and doubts in online chats and received necessary advice and guidance from the researcher. The researcher provided necessary information about the way of coordination with the research units, such as reminding them to receive the packages, doing assignments, or willingness to have private chats.

The second stage, or post-test, was performed after the educational intervention by resending the questionnaire links to the participants in the virtual space. The data from the questionnaires were also collected similarly. The follow-up test was performed on the same individuals one month after the last education session, using the same questionnaires and the same method to evaluate the educational intervention's sustainability level. The data were then analyzed and underwent statistical examination by a statistical consultant who had no information about the type of intervention received by the research units.

Data were analyzed using SPSS version 24. The range, mean, and standard deviation were reported for quantitative variables and frequency and percentage for qualitative variables. The Kolmogorov-Smirnov test was used to examine the distribution of variables. In order to examine changes in three stages, the parametric repeated-measures analysis of variance was used for normally distributed variables, and the Friedman test for non-normal distributed variables. The score change between the follow-up stage and the beginning of the study was calculated and compared with zero, using the one-sample t-test or Wilcoxon median test where appropriate. Statistical significance was defined as $P < 0.05$, and analysis was done by using SPSS 24.

Results

The participants' age was from 25 to 56 years, with a mean of 40.04 ± 7.11 years. Their mean service experience was 14 ± 6.85 years. Table 2 presents the frequency of other characteristics of the units.

Based on the results, the mean communication skills score increased from 65.2 ± 5.6 in the pre-test stage to 67.1 ± 6.4 in the post-test stage and reached 66 ± 5.2 in the follow-up stage, indicating a partial difference in

Table 2. Frequency distribution of midwives' characteristics in the study

Variable	Level	Frequency	Percent
Service place	Village	41	80.4
	City	10	19.6
Education level	Associate degree	26	51
	Bachelor	24	47.1
	Master	1	2
Marital status	Single	2	3.9
	Married	46	90.2
	Divorced	3	5.9
Type of employment	Official	15	29.4
	Treaty	4	7.8
	Contract	17	33.3
	Company	12	23.5
	Project	3	5.9

Table 1. Education program

Session	Summary of the session content	Assignments
First	Introduction, statement of objectives, the definition of communication (purpose, role, and its levels and components). The importance of communication skills in health services. General introduction of the cognitive-behavioral approach	
Second	Types of verbal and non-verbal communication (body language), the way of interpretation, and the possibility of mistakes in interpretation according to psychological, cultural, and social fields	Practical work (providing examples of wrong communication patterns and group activity to analyze it)
Third	Getting feedback from reproductive health care at work in the last week, teaching listening skills, creating a general understanding of the roles of thoughts in feelings and behavior, and acquiring skills in recognizing and correcting distorted thoughts	Providing assignments about the identification of dysfunctional thoughts and unpleasant feelings
Fourth	Group activity in analyzing assignments of the previous session; teaching feedback skills, emotion management, and empathy skills, and their necessity in midwifery services	Providing relevant examples and practical assignments at the workplace
Fifth	Getting feedback and review of previous sessions, investigating assignments and virtual questions and answers as a group or individually in terms of each case, examining communication obstacles and factors that disturb the establishment of effective and positive communication	Group activity by presenting examples of communication obstacles
Sixth	The ability to communicate by proper use of various forms of communication skills; communication challenges in the care of middle-aged women (40-59 years old); summarizing and reviewing all sessions; performing the post-test	

communication skill score during the study. However, the repeated-measures analysis of the variance test did not show any significant trend in the communication skill score during the study ($P>0.05$). The verbal skill changed from 22 ± 2.9 to 22.2 ± 2.7 in the post-test and reached 22.6 ± 3.04 in the follow-up phase. The listening skills increased from 20 ± 3.7 in the pre-test to 20.5 ± 3.8 in the post-intervention phase but decreased to 18.9 ± 2.9 in the follow-up phase. Due to changes in the mean score of feedback skills from 23.2 ± 3.1 to 24.4 ± 3.4, there was a slight increase in the post-intervention phase compared to the pre-test, which partially continued in the follow-up phase (Table 3).

The mean scores of communications, verbal, listening, and feedback skills did not significantly change during the study. No, a significant change was found between the follow-up stage and the beginning of the study.

Discussion

The comprehensive review of studies on the effect of implementing communication skill education with a cognitive-behavioral approach for healthcare providers indicated no study that was utterly similar to the present research; hence, the researcher sought to use similar results that investigated the effects of communication skills on other subjects in the discussion and conclusion sections.

The analysis of research results indicated that implementing the communication skill education program with a cognitive-behavioral approach on WhatsApp could not statistically affect the mean score of midwifery caregivers' communication skills, both in general communication and verbal, listening, and feedback skills sub-scales. The research results were consistent with a review study by Moore et al on communication skills training for healthcare professionals working with people with cancer. This study, the third update of a review study in Cochrane collaboration, indicated that communication skills could have improved with experience. Therefore, considerable efforts have been made to implement courses that improve health professionals' communication skills. In this review study, the healthcare workers' performance was less close to reality than when communicating with real clients when facing the simulated patients, indicating that communication skill training courses only sometimes led to significant clinical results. It was consistent with the findings of two other studies that were measured with the same scales on actual and simulated clients, indicating that the benefits of communication skills training were less in actual status. In the intervention groups, there was no evidence of a significant difference in communication skills between healthcare workers, except for the skill of using open questions and showing empathy, which increased compared to the control groups, and different groups of the care team, including physicians and nurses, were not different in this field.

In the health service delivery system, service providers face a wide range of clients, each needing a different communication method. Meanwhile, midwives must communicate broadly with their diverse clients due to their roles in reproductive health, especially among middle-aged women. Despite the results of numerous studies about the positive effect of educational interventions on the communication performance of medical staff (14,20,21), there was no significant relationship between participation in an education course and the improvement of communication skills in midwives in research by Taghizadeh et al (11).

The possibility of insignificance changes in the mean score of midwifery caregivers' communication skills

Table 3. Mean ± standard deviation of pre-test, post-test, and follow-up scores for communication skills in feedback, listening, and verbal skills of midwives

Variable	Stage	Minimum	Maximum	Mean ± SD	Within group *P* value	Test power
Communication skills scores	Pre-test	47	76	65.22 ± 5.601		
	Post-test	51	79	67.10 ± 6.372	0.222[a]	0.33
	Follow-up	54	78	66.02 ± 5.176		
	Changes during the study	-19	23	0.87 ± 8.7	0.43[b]	0.12
Feedback skill	Pre-test	11	30	23.22 ± 3.145		
	Post-test	14	30	24.38 ± 3.394	0.09[c]	0.43
	Follow-up	18	30	24.44 ± 2.736		
	Changes during the study	-8	16	1.33 ± 4.5	0.058[d]	0.56
Listening skill	Pre-test	13	27	19.98 ± 3.690		
	Post-test	13	29	20.46 ± 3.831	0.064[a]	0.49
	Follow-up	12	25	18.94 ± 2.913		
	Changes during the study	-10	10	-0.98 ± 4.57	0.145[b]	0.33
Verbal skill	Pre-test	14	29	22.02 ± 2.902		
	Post-test	14	27	22.27 ± 2.750	0.181[c]	0.14
	Follow-up	14	29	22.65 ± 3.049		
	Changes during the study	-12	11	0.63 ± 4.56	0.375d	0.17

[a] The repeated measures analysis of variance was used. [b] The one-sample t-test was used. [c] Friedman test was used. [d] Wilcoxon median test.

before and after the intervention can be attributed to the excellent communication ability of the midwifery caregivers in the pre- and post-intervention stages because the mean score of midwifery caregivers' communication skills was 65.22 ± 5.601 out of the maximum score of 90 in the pre-intervention phase. Based on the scoring system of Barton's Communication Skills Questionnaire, 45.1% of the samples had high communication skills in the pre-intervention phase, and 54.9% had moderate communication skills. The result was consistent with research by Safavi et al. The total mean score of nurses' communication skills was 60.66 ± 6.45, and at the moderate level in this cross-sectional analytical study in which there were 210 nurses in Gilan hospitals were selected by stratified random sampling and evaluated using the same questionnaire (18). The results of research by Bagherzadeh et al (22) were inconsistent with the results of the present study because the scores of students' attitudes about the skill of communication with clients were desirable in only half of the cases. The results of the present study were inconsistent with the results of studies by Navabi and Asri, who reported inappropriate status of communication skills among healthcare workers (23), and Emadzadeh et al, who reported an unfavorable level of communication skills among midwives (9).

Based on the research results, the feedback skill had the highest score among the research units both in the pre- and post-intervention stages. Given the importance of this skill in creating an atmosphere of trust between the caregiver and the client and ensuring that the client received the educational material correctly from the caregivers, it can be considered a strong point in the communication skills of the midwife caregivers in this study but more extensive studies in this field seem reasonable to increase the generalizability of this content.

The WhatsApp social messenger was the educational intervention environment in the present study. It was considered suitable for many reasons, such as being available due to the problems of the COVID-19 epidemic and the ban on holding face-to-face training sessions. Based on various studies, including the study by Zolfaghari et al, Gustafon et al, Patell et al (24), and Emadzadeh et al (9), e-learning can be considered an independent method that has a potential impact on achieving educational goals. The effectiveness of virtual education courses, similar to face-to-face courses or more successful than them, can increase the learners' knowledge and learning. However, not all studies support this finding. In a review study, there was no significant difference between the effectiveness of digital communication education and traditional methods. In a randomized trial, which evaluated nearly 500 nursing and intern trainees in a simulation-based intervention with conventional training, the researcher could not find any improvement in the quality of the trainees' relationships with patients or their families. In a study by Allenbaugh et al, which was a short-term educational intervention consisting of a two-hour online program for health service providers, including physicians and nurses, even though there were detectable changes in employees' knowledge and attitudes about communication skills, the range of changes was low, especially for nurses. The results were not statistically significant in skill subscales, such as describing the medical status in simple and understandable language for the clients and providing sufficient explanations (14).

The difference in the researchers' results in comparing face-to-face and virtual methods was due to the difference in the populations, different views, and different times of using the electronic education method (9).

The cognitive-behavioral approach was used in the educational content of the sessions in this study. The positive effects of this approach were reported at a moderate level in a review study in China, assuming that it was compatible with the shared cultural values and beliefs because the non-compliance of cultural issues with the principles of this approach decreased its positive effects. Based on studies, the cognitive-behavioral approach in clinical samples was more effective than samples with non-therapeutic applications because the greater severity of the problems caused more willingness and cooperation of individuals to take advantage of treatment results (25).

Sasaki et al, who studied the effects of a communication skills training program based on the cognitive-behavioral approach principles in a randomized clinical trial, believed that communication skills training in medicine often required a few days to a few weeks and there was a positive correlation between the length of the training course and its effectiveness. They also reported that low-level cognitive-behavioral approach principles could be used in group training programs, books, and training in spaces to reduce psychological problems effectively. Thus, it could increase the individuals' flexibility in accepting new ways of thinking and acting. This study, which had a very short educational intervention and only lasted for a two-hour session, indicated that even though there was a significant improvement in the communication behaviors of the research units, there was no statistically significant difference between the control and intervention groups. Even though the effect size was small, the effect on communication behaviors was considered significant. The researchers of this study considered the short duration of the training course and the coincidence of the training program with the peak of work shifts as the possible reasons for such results (26). Despite increasing the number of training sessions to six and using home and workplace exercises as complementary programs in addition to training to increase the effectiveness of the training program in the present study, the results were consistent with the study mentioned above.

The results of a limited review study on 27 articles, which were often with educational interventions based on the cognitive-behavioral approach and their training time varied from 3 hours to 5 days, indicated that the findings about the effectiveness of training for health care

providers should be interpreted with caution because there was no strong correlation between the increase in knowledge following educational interventions and skill enhancement (5).

According to the assessment of the correlation between personal characteristics of midwifery caregivers, including age, service history, education levels, and employment status, with their communication skills, there was no significant correlation in the present study. It was consistent with the results of studies by Taghizadeh et al, Baghiani Moghadam et al (27), and Bagherzadeh et al (22), but the result was inconsistent with research by Pourasghar et al. In this descriptive and analytical study, which examined 409 employees of the Psychiatry and Burn Hospital in Sari in 2015, the older people had higher communication skills, and higher education levels helped to communicate well. Notably, the status of official employment and the increase in years of service were associated with a reduction in communication skills. The researchers attributed it to the reduction of motivation after being permanently recruited into the system, the employees' job burnout over time, and the adverse effects of using this skill (3).

Conclusion

According to this study, contrary to the conventional opinion or the exaggerated results of some studies about the positive effects of education, educational interventions only sometimes lead to positive and effective results. Furthermore, the COVID-19 epidemic caused special status in all personal, family, and social aspects of life, and the health sector employees were no exception. This situation is a confounder of the positive effects of education in this research.

The skill-based and experiential communication skills education can be more effective than teaching communication skills based on attitude or specific tasks. The present study measured changes in midwives' perceptions, not actual changes in communication skills. The changes in communication skill scores and the subscales in the pre and post-test phases may not reflect the realities of the midwife's communication skills because they must show their performance when facing real clients. Therefore, it suggested conducting further research on efficient educational methods and practical approaches to improve these skills in health personnel and achieve more reliable results with high generalizability.

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Authors' Contribution

Conceptualization: Sharifeh Golshahi, Behnaz Enjezab, Soleiman Kheiri, Mohammad Rabiei.
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Competing Interests

The authors declare that there is no conflict of interest.

Ethical Approval

Ethical considerations in this study included obtaining permission from the Ethics Committee of Yazd University of Medical Sciences with the code of ethics IR.SSU.REC.1399.213 and obtaining written consent from the participants to participate in the study.

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