Nurse Education Today 79 (2019) 175–179

Contents lists available at ScienceDirect

Nurse Education Today

journal homepage: www.elsevier.com/locate/nedt

# Role-play versus lecture methods in community health volunteers

Fatemeh Vizeshfar[a], Marzieh Zare[b], Zahra Keshtkaran[a,*]

[a] Department of Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran
[b] Student Research Committee, Shiraz University of Medical Sciences Shiraz, Iran

ARTICLE INFO

*Keywords:*
Volunteer
Role-play
Lecture
Education
Health knowledge

ABSTRACT

*Background:* Considering the key role of health volunteers in promoting community's health, their effective training is of particular importance. Training can be more effective through cooperative and learner-centered methods. Role-play is among the cooperative methods with numerous advantages. Considering the positive impact of training via various methods, we aimed to compare training through role-play and lecture on health volunteers' health knowledge in selected comprehensive health centers of Shiraz, Iran.

*Methods:* This quasi-experimental study was conducted on all health volunteers in four comprehensive health centers selected via random cluster sampling during the second half of 2017. The participants were divided into intervention and control groups and took part in the pretest based on the book entitled "Promotion of Breastfeeding". Based on the pretest results, health volunteers trained the participants in three educational sessions. The two groups were evaluated again immediately and two months after the intervention.

*Results:* The mean age of the participants was 49.97 ± 8.1 and 46.52 ± 10.74 years in intervention and control groups, respectively. Most participants were married (94.8%) and had diplomas (92.1%).A significant difference was seen between both groups in knowledge scores at the three time points ($P < 0.001$). A significant difference was found between the two groups regarding knowledge scores immediately and two months after the intervention ($P < 0.001$), indicating the effectiveness of training through role-play.

*Conclusion:* The advantages of role-play, including development of communication skills and active listening, resulted in the learners' enthusiasm and motivation. This method was accompanied with higher educational output as well as longer knowledge persistence. Role-play increased cooperation and group discussions performed after the role-play promoted the transfer emotional experiences.

## 1. Introduction

There is a severe shortage of healthcare workers throughout the world. In many developing countries, healthcare worker shortage is an important barrier against achievement of third millennium goals (Nullis-Kapp, 2005; Singh et al., 2016; Takasugi and Lee, 2012; Vareilles et al., 2017). One of the strategies used to solve this challenge is employing less educated staff. Such non-professional staff include Community Health Volunteers (CHVs) who are trained and provide health services locally. Health volunteers are defined as the individuals who contribute their time and energy to providing services for others and the society without any financial gains.

In other words, these individuals are trained to provide health services to their community, which will be eventually beneficial for the health system (Druetz et al., 2015; Kane et al., 2016; Wouters et al., 2012). In fact, CHVs are among the main components of the community (Glenton et al., 2010). Trained volunteers can transfer important health and cultural messages, make informed decisions, and enhance local people's access to primary healthcare services (Maes and Kalofonos, 2013; Zhao et al., 2015). Due to their close relationship with families as well as cultural, economic, and social similarities, CHVs can play a critical role in community empowerment, particularly in women (Kaveh et al., 2017). Since the past decade, primary healthcare systems have seriously focused on CHVs. In fact, CHVs have been considered to be an inseparable part of the World Health Organization (WHO) in providing services, workforce, information, and medicines, financial affairs, and management. Overall, it is one of the signs of social cooperation (Singh, 2015). Voluntary works, as a social manifestation, are based on ethical principles and represent altruism as well as individuals' responsibility to help peers. Indeed, individuals' cooperation in health-related activities has been highly approved. Evidence has indicated that such activities normally result in improvement and development of health services (Hustinx and F., 2003; Turner and Reynolds, 2010). Therefore, CHVs are employed to provide health, treatment, and social

* Corresponding author at: Department of Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran.
*E-mail addresses:* vizeshfarf@sums.ac.ir (F. Vizeshfar), zahra_keshtkaran@yahoo.com (Z. Keshtkaran).

https://doi.org/10.1016/j.nedt.2019.05.028
Received 30 October 2018; Received in revised form 24 April 2019; Accepted 16 May 2019

welfare services all around the world (Lewycka et al., 2013). Moreover, in many parts of the world, CHVs provide palliative care services to elderly people and individuals suffering from chronic diseases. In this context, volunteers directly contribute to supporting patients. Such activities include providing nursing care, preparing food and drinks, and providing social and emotional support including spending time with patients (Candy et al., 2015). Incorporating treatment activities into CHVs' responsibilities is a key factor in increasing their motivation and acceptance in the society (Mirzaei et al., 2017). Family health services and activities to fight against malaria, AIDS, etc. are being carried out by CHVs all around the world (Alami et al., 2013; Bocoum et al., 2014; Curtale et al., 1995). Iran also benefits from CHVs' cooperation. In Iran, volunteers mainly include married, housewives who are literate (Geraylo et al., 2013), are socially accepted, have enough time, interest, and motivation and are not paid for their social activities. They normally cover 50 households in their neighborhood (Hoodfar, 2010). They are the communication bridge between the society and healthcare services and represent people's cooperation in health promotion (Farsar et al., 2014).

Employing CHVs manifests the successful experience of people's cooperation (Miri et al., 2017). These individuals are highly effective in the society by increasing public knowledge level through providing information, eliciting the effects of destructive behaviors on health and advantages of following healthy lifestyles, changing attitude, and creating motivation for changing unhealthy behaviors (Yazdanpanah et al., 2013). To date, not only CHVs work in urban health stations, but they also cooperate with rural health centers and health homes.

Based on CHV program goals, volunteers are expected to learn primary health concepts and skills, transfer these concepts to the households under their coverage, follow up the households' health, collect vital statistics and information in the region, and attract people's cooperation for solving health-related issues (Farsar et al., 2014). Consequently, CHVs can play a key role in the development of the society (Vareilles et al., 2017); therefore, they should be selected and trained appropriately. In this context, training CHVs is of particular importance. Unplanned health education would be a useless attempt. On the other hand, selecting an educational model would result in beginning and continuing the program in a correct path (Pourhaji et al., 2012). Nowadays, cooperative and learner-centered methods, such as role-play, are being increasingly used. In this method, learners are required to imagine themselves in another person's position and play his/her role. This type of simulation is focused on learners' interaction with one another. Therefore, role-play has been considered to be an interactive, continuous, and dynamic method (El Tantawi et al., 2014). It is also one of the main methods for holding educational sessions. In this regard, psychology of learning has proved that monitoring roles is much more effective than hearing, because facial expressions, gestures, and body movements can be used, as well. Role-play or social performance is based on the fact that many values cannot be expressed through words in some circumstances and in case the required conditions are provided, more effective communications can be created (Wiles, 2014). The closer the learning environment to reality, the more effective the learning would be. In this context, simulated patients (healthy individuals or real patients) are trained to play the role of an actual patient with respect to medical history and physical findings (Xu et al., 2016). These individuals take part in the process of learners' education and evaluation by expressing their history and clinical problems, presenting specific clinical signs, and providing learners with appropriate feedbacks. On the other hand, learners practice various behaviors and teach the subjects (Gillespie et al., 2015; Navaee and Abedian, 2015).

To date, role-play is used for emotional release, attitude change, creating insight, and training novel behaviors (Feyzi et al., 2014). Moreover, this method is applied to train various groups at different levels (Cansever et al., 2015). The advantages of role-play include developing active listening and problem-solving skills, showing empathy, promoting teamwork, and creating effective communication (Rao, 2011). Also, this method enhances learners' enthusiasm and internal motivation, because they take part in training and follow group discussions, which helps them transfer their emotional experiences (El Tantawi et al., 2014).

Nowadays, CHVs are trained using the traditional or teacher-centered method. In this method, the instructor is mainly responsible for designing educational activities (Khatebian et al., 2014) and learners are less active. One of the advantages of teacher-centered methods, such as lecture, is training a large number of people within a specific time period (Lindsay et al., 2015). In this method, instructors are mainly the speaker and expect the learners to listen to them. Group discussion is not normally used and in case a question is asked, learners are not required to think about the issue. In fact, the main objective of this method is preparing learners for taking exams (Fisher et al., 2012). On the other hand, role-play is a learner-centered method (Mumtaz and Zahra, 2016). Using this method for consultation skill training and group education creates a positive experience in learners. In this way, learners learn to use these skills under real circumstances and, at the same time, experience the process of professionalization (Schlegel et al., 2012). Novel educational approaches have also put emphasis on cooperative learning.

Up to now, many studies have been conducted on the effectiveness of various educational methods in Iran and other parts of the world. Among cooperative learning methods, role-play has been found to enhance learners' cooperation. It is superior to teacher-centered methods with respect to creating motivation and strengthening communication and critical thinking skills. Considering CHVs' pivotal role in increasing individuals' and families' knowledge levels, promoting society's health level, and changing health behaviors, training them regarding cooperative methods is of utmost importance. Considering the important role of community health nurses as trainers of various social groups, we aimed to compare the effects of role-play and lecture methods on CHVs' knowledge in comprehensive health centers of Shiraz, Iran, during 2017–2018.

## 2. Materials and methods

Because of, in this study we were done intervention (role play), not complete randomization in sampling, This study was conducted through quasi-experimental on 76 CHVs in the selected comprehensive health centers of Shiraz, southern Iran in 2017. Considering Confidence Interval (CI) of 95%, 80% power, and $\alpha = 0.05$, a sample size of76 participants was determined for the study (38 in the intervention group and 38 in the control group). The participants were selected through two-stage cluster sampling. In doing so, four comprehensive health centers were selected through lottery. Then, all CHVs in two centers were allocated to the intervention group and all those in the other two centers were assigned to the control group using lottery. The inclusion criteria of the study were active participation in educational programs and willingness to take part in the research. The exclusion criteria were absence in more than one educational session and missing the posttest.

At first, the researcher explained the study objectives and procedures to the participants and obtained their written informed consents. This study extracted from a MS dissertation in community health nursing and was approved by the Ethics Committee of Shiraz University of Medical Sciences, Shiraz, Iran (NO: IR.sums.REC.1396.106). All the participants were informed about the study objectives and signed written informed consents for taking part in the study. Data were collected using health volunteers' health knowledge questionnaire designed by the Ministry of Health and Medical Education that it's validity has been approved by a competent committee of the Ministry of Health, and the reliability of the questionnaire was confirmed by Cronbach's alpha 0/7. So, the CHVs were asked to complete the health volunteers' health knowledge questionnaire as the pretest. The participants in the intervention group took part in three 90-min educational sessions held

once a week based on the book entitled “Promotion of Breastfeeding”. It should be noted that based on national and local health problems, one book was selected to be taught in all comprehensive health centers of the country in each season. “Promotion of Breastfeeding” was being taught at the time of study and therefore chosen for interventional sessions.

Data were collected using health volunteers' health knowledge questionnaire designed by the Ministry of Health and Medical Education. This questionnaire contained 24 multiple-choice items. Correct and incorrect/no-response items received 1 and 0 scores, respectively. Additionally, the total score of the questionnaire ranged from 0 to 20. Accordingly, scores 16–20, 12–15, and 0–11 represented excellent, good, and weak knowledge levels, respectively. This questionnaire included two sections, the first of which dealt with demographic information and job tenure. This part contained 12 items related to age, education level, occupation, marital status, husband's age and occupation, number of children, history of diseases, family history of diseases, history of working as a CHV, and motivation behind working as a CHV. The second section of the questionnaire assessed the volunteers' knowledge of breastfeeding based on the educational content.

The participants in the intervention group were trained using role-play method. In so doing, the researcher with the help of volunteers selected a three-subject group and provided them with a specific scenario to practice within a week. Then, they were given the required instruments to practice more within a day. At the beginning of the first session, the researcher mentioned the study objectives and procedures. Then, the importance and benefits of breastfeeding and how to hold the infant while breastfeeding were played by the selected group. In the second session, methods of pumping and storing breast milk were played by the selected group. Finally, weaning the child off breast milk was played in the third session. It should be noted that the previously taught issues were reviewed and the volunteers' questions were answered at the beginning of each session. Moreover, the volunteers expressed their opinions about the educational content at the end of each session. Besides, all contents were wrapped up at the end of the sessions. Afterwards, the participants were asked to complete the health volunteers' health knowledge questionnaire once again as the posttest. It should be mentioned that the participants were provided with a booklet on the received educational contents. The participants of both groups completed the study questionnaires again two months after the intervention. At the end of the study, the participants of the control group were also provided with the educational booklets. After all, the data were analyzed using SPSS software, version 23.

## 3. Results

The results of Kolmogorov-Smirnov test revealed the normal distribution of the data at the three time points ($P < 0.05$).Quantitative and qualitative demographic characteristics are presented in Tables 1 and 2. Accordingly, the mean ± SD age of the participants was 49.97 ± 8.1 years in the intervention group and 46.52 ± 10.74 years in the control group (Table 1). Most participants in the intervention (94.8%) and control (92.1%) groups were married. Also, most of the participants in the intervention (75.9%) and control (60.5%) groups had diplomas (Table 2).

**Table 1**
Comparison of the distribution of the participants' quantitative demographic features.

| Group | Role-play ($n$ = 38) | Lecture ($n$ = 42) | $P$-value |
|---|---|---|---|
| Statistic | Mean ± SD | Mean ± SD | |
| Variable | | | |
| Age | 49.97 ± 8.12 | 46.52 ± 10.74 | 0.12 |
| Husband's age | 57.05 ± 9.25 | 54.05 ± 11.53 | 0.23 |
| Number of children | 3.05 ± 1.43 | 3.22 ± 1.37 | 0.6 |

**Table 2**
Comparison of the frequency distribution of the participants' qualitative demographic features.

| Group | Role-play (n = 42) | | Lecture (n = 42) | | $P$-value |
|---|---|---|---|---|---|
| Frequency | Number | Percent | Number | Percent | |
| Variable | | | | | |
| Marital status | | | | | |
| Single | 2 | 5.3 | 3 | 7.9 | |
| Married | 36 | 94.8 | 35 | 92.1 | 0.22 |
| Education level | | | | | |
| Primary school | 15 | 39.5 | 14 | 36.8 | 0.97 |
| Diploma | 22 | 75.9 | 23 | 60.5 | |
| MSc. and above | 1 | 26 | 1 | 2.6 | |
| Motivation behind working as a community health volunteer | | | | | |
| Helping others | 19 | 50 | 13 | 34.2 | 0.4 |
| Being beneficial to the society | 6 | 15.8 | 7 | 18.4 | |
| Both | 13 | 34.2 | 18 | 47.4 | |

The results revealed no significant differences between the two groups regarding quantitative and qualitative demographic characteristics ($P > 0.05$). Thus, the two groups were homogeneous in this regard.

The results of ANOVA showed a significant difference in the two groups' knowledge scores before and immediately and two months after the intervention ($P < 0.05$). Accordingly, knowledge scores of both groups increased after the educational intervention (Table 3).

Before the intervention, no significant difference was found between the two groups with respect to the mean score of knowledge ($P = 0.45$). However, a significant difference was observed in this regard immediately and two months after the intervention ($P < 0.05$). Accordingly, the intervention group participants' knowledge scores had increased after the intervention (Table 4).

Pearson's correlation test was used to assess the relationship between knowledge and demographic characteristics. The results indicated a significant relationship between the history of working as a CHV and knowledge score two months after the intervention ($r = 0.22$, $P < 0.05$). This might be due to the fact that longer history of working as a CHV would result in higher experience and information, eventually leading to higher health knowledge. However, no significant relationships were observed between knowledge score and other variables ($P > 0.05$).

## 4. Discussion

CHVs play a critical role in primary healthcare provision. We found an increase in the two groups' knowledge scores after the intervention. Yet, role-play was significantly more effective compared to the lecture method. This might be attributed to the appropriate ground for volunteers' cooperation in the role-play method. In the traditional method, on the other hand, learners take a passive position that does not provide the ground for their cooperation. By Searching in search engines and valid site such as, Pub Med, EMBASE, the Cochrane Library, Scopus, CINAHL, not found similar study and in discussion use study about role playing or Comparison role play and other educational method. Ostovar and colleagues compared role-play and classical methods regarding menstrual health in middle school students and came to the conclusion that role-play was more effective compared to the lecture method (Ostovar and Fararuie, 2012). Wang and colleagues also performed a study entitled “promotion of Chinese nursing students' communication skills via video games and role-play method”. The

**Table 3**
Comparison of the mean scores of knowledge in role-play and lecture groups before, immediately, and two months after the intervention.

| Group | Mean ± SD (before the intervention) | Mean ± SD (after the intervention) | Mean ± SD (two months after the intervention) | *P*-value |
|---|---|---|---|---|
| Knowledge score (role-play group) | 9.36 ± 4.28 | 16.92 ± 1.82 | 16.36 ± 1.66 | < 0.001 |
| Knowledge score (lecture group) | 10.18 ± 2.87 | 13.89 ± 2.14 | 11.71 ± 2.17 | < 0.001 |

**Table 4**
Comparison of the two groups regarding the mean scores of knowledge before and immediately and two months after the intervention.

| Variable | Knowledge score (before the intervention) | Knowledge score (after the intervention) | Knowledge score (two months after the intervention) |
|---|---|---|---|
| Statistic | Mean ± SD | Mean ± SD | Mean ± SD |
| Group | | | |
| Role-play | 9.57 ± 4.25 | 16.92 ± 1.80 | 16.47 ± 1.65 |
| *P*-value | 0.45 | 0.000 | 0.000 |
| Lecture | 10.18 ± 2.82 | 13.89 ± 2.14 | 11.71 ± 2.17 |
| *P*-value | 0.45 | < 0.001 | < 0.001 |

results demonstrated that both role-play and video games enhanced the students' knowledge and attitude (Wang et al., 2015). Consistently, Takemura and colleagues conducted a study entitled “utilization of role-play method among M.Sc. students of biology” in Japan and reported that role-play was more effective than other methods in biology classes (Takemura and Kurabayashi, 2014). Susanna and co-workers also found that using role-play in nursing education could create the opportunity for investigation of interactions with others, which could eventually enhance the students' self-awareness and ability to review their future professional identity. In fact, playing the role of a patient could provide the ground for experiencing patients' views (Arveklev et al., 2018). Susanna and colleagues also did a review study entitled “utilization and application of drama in nursing education” and proposed that drama in primary courses of nursing education was effective in improving nurses' knowledge levels. Indeed, it could be vastly regulated depending on various situations (Arveklev et al., 2015). Other studies comparing role-play and lecture or group discussion methods have also reached similar results. They have all confirmed the effectiveness of role-play in increasing knowledge and consultation, speaking, and writing skills (Alluri et al., 2016; Azzopardi et al., 2014; Luiz Adrian et al., 2015). Nonetheless, and co-workers compared the effects of role-play, lecture, and electronic education on nursing students' knowledge and satisfaction in Iran. The results showed that lecture method was superior to role-play at the first stage immediately after training. However, role-play was more effective at the second stage one month after training (Pourghaznein et al., 2015). This can be justified by the fact that lecture method is effective in increasing knowledge because when individuals see the questionnaire items, they become curious to find the related issues. In fact, lecture is an educational method in which subjects are taught through question and answer. Thus, this educational method is effective in gaining knowledge immediately after training. On the other hand, role-play is more effective in the long run (Maddry et al., 2014). Overall, role-play is an efficient method for transferring knowledge and experiences to various health sciences groups.

## 5. Conclusion

Role-play is an attractive and effective method for training CHVs. In addition to creating relationships among CHVs, this method improves teamwork spirit, causes volunteers to learn from each other, and results in motivation and positive experiences.

## 6. Study limitations

One of the limitations of this study was that role-play is a costly and time-consuming method. Thus, future studies are recommended to employ other cost-effective educational methods. Another study limitation was the volunteers' unfamiliarity with the role-play method and its features. Therefore, courses on various educational methods are recommended to be held for CHVs.

## Declaration of Competing Interest

None.

## Acknowledgements

This article was extracted from a MS dissertation in community health nursing written by Marzieh Zare and financially supported by the Research Vice-chancellor of Shiraz University of Medical Sciences (grant No. 96-14995). Hereby, the author would like to express their gratitude to the healthcare volunteers for participating in this study.

## References

Alami, A., Nedjat, S., Majdzadeh, R., Rahimi Foroushani, A., Hoseini, S.J., Malekafzali, H., 2013. Factors influencing women's willingness to volunteer in the healthcare system: evidence from the Islamic Republic of Iran. East Mediterr. Health J. 19 (4), 348–355.
Alluri, R.K., Tsing, P., Lee, E., Napolitano, J., 2016. A randomized controlled trial of high-fidelity simulation versus lecture-based education in preclinical medical students. Med. Teach. 38 (4), 404–409. https://doi.org/10.3109/0142159x.2015.1031734.
Arveklev, S.H., Wigert, H., Berg, L., Burton, B., Lepp, M., 2015. The use and application of drama in nursing education—an integrative review of the literature. Nurse Educ. Today 35 (7), e12–e17. https://doi.org/10.1016/j.nedt.2015.02.025.
Arveklev, S.H., Berg, L., Wigert, H., Morrison-Helme, M., Lepp, M., 2018. Nursing students experiences of learning about nursing through drama. Nurse Educ. Pract. 28, 60–65. https://doi.org/10.1016/j.nepr.2017.09.007.
Azzopardi, T., Johnson, A., Phillips, K., Dickson, C., Hengstberger-Sims, C., Goldsmith, M., Allan, T., 2014. Simulation as a learning strategy: supporting undergraduate nursing students with disabilities. J. Clin. Nurs. 23 (3–4), 402–409. https://doi.org/10.1111/jocn.12049.
Bocoum, F.Y., Kouanda, S., Zarowsky, C., 2014. Barriers to antenatal syphilis screening in Burkina Faso. Pan Afr. Med. J. 17 (Suppl. 1). https://doi.org/10.11694/pamj.supp.2014.17.1.3423.
Candy, B., France, R., Low, J., Sampson, L., 2015. Does involving volunteers in the provision of palliative care make a difference to patient and family wellbeing? A systematic review of quantitative and qualitative evidence. Int. J. Nurs. Stud. 52 (3), 756–768. https://doi.org/10.1016/j.ijnurstu.2014.08.007.
Cansever, Z., Avsar, Z., Tastan, K., 2015. Third year medical school students' experiences of revealing patients' stories through role playing. Eur. J. Med. 47 (1), 26–31. https://doi.org/10.5152/eajm.2014.53.
Curtale, F., Siwakoti, B., Lagrosa, C., LaRaja, M., Guerra, R., 1995. Improving skills and utilization of community health volunteers in Nepal. Soc. Sci. Med. 40 (8), 1117–1125.
Druetz, T., Kadio, K., Haddad, S., Kouanda, S., Ridde, V., 2015. Do community health workers perceive mechanisms associated with the success of community case management of malaria? A qualitative study from Burkina Faso. Soc. Sci. Med. 124, 232–240. https://doi.org/10.1016/j.socscimed.2014.11.053.
El Tantawi, M.M., Abdelaziz, H., AbdelRaheem, A.S., Mahrous, A.A., 2014. Using peer-assisted learning and role-playing to teach generic skills to dental students: the health care simulation model. J. Dent. Educ. 78 (1), 85–97.
Farsar, A., Younesi, M., Fattahi, L., Ahmadnia, H., Mohammadinia, N., Kalantari, B., 2014. Comparison of the performance of health volunteers in the health centers of Shahid Beheshti University of Medical Sciences. Community Health. *1* (1), 11–20.
Feyzi, A., Mesrabadi, J., Zavar, T., 2014. Meta-analysis of the effects of group teaching methods on academic performance. J. Educ. Learn. 6 (2), 1–31.
Fisher, M.J., Taylor, E.A., High, P.L., 2012. Parent-nursing student communication practice: role-play and learning outcomes. J. Nurs. Educ. 51 (2), 115–119. https://doi.org/10.3928/01484834-20111216-04.
Geraylo, S., Karimian Kakolaki, Z., Safdari, F., Morowati, M., Motaghi, B., Sharifi, E.,

2013. Effects of health education on the knowledge and attitude of health coordinators towards gestational diabetes in Minoodasht. Q. J. Diabetes Nutr. Faculty of Nursing and Midwifery, Zabol. 3 (1), 19–28.
Gillespie, G.L., Brown, K., Grubb, P., Shay, A., Montoya, K., 2015. Qualitative evaluation of a role play bullying simulation. J. Nurs. Educ. Pract. 5 (7), 73–80. https://doi.org/10.5430/jnep.v5n6p73.
Glenton, C., Scheel, I.B., Pradhan, S., Lewin, S., Hodgins, S., Shrestha, V., 2010. The female community health volunteer programme in Nepal: decision makers' perceptions of volunteerism, payment and other incentives. Soc. Sci. Med. 70 (12), 1920–1927. https://doi.org/10.1016/j.socscimed.2010.02.034.
Hoodfar, H., 2010. Health as a context for social and gender activism. Female Volunteer Health Worker in Iran 36 (3), 487–510.
Hustinx, L., F., L., 2003. Collective and reflexive styles of volunteering: a sociological modernization perspective. Volunt. Int. J. Volunt. Nonprofit Org. *14*, 167. https://doi.org/10.1023/A: 1023948027200.
Kane, S., Kok, M., Ormel, H., Otiso, L., Sidat, M., Namakhoma, I., ... de Koning, K., 2016. Limits and opportunities to community health worker empowerment: a multi-country comparative study. Soc. Sci. Med. 164, 27–34. https://doi.org/10.1016/j.socscimed.2016.07.019.
Kaveh, M.H., Rokhbin, M., Mani, A., Maghsoudi, A., 2017. The role of health volunteers in training women regarding coping strategies using self-efficacy theory: barriers and challenges faced by health volunteers in empowerment of women. Asian Pac. J. Cancer Prev. 18 (9), 2419–2424. https://doi.org/10.22034/apjcp.2017.18.9.2419.
Khatebian, M., Sangestani, G., Oshvandi, K., 2014. Midwifery student's experience of role-playing as a teaching. Nurs. Educ. 3 (1), 61–70.
Lewycka, S., Mwansambo, C., Rosato, M., Kazembe, P., Phiri, T., Mganga, A., ... Costello, A., 2013. Effect of women's groups and volunteer peer counselling on rates of mortality, morbidity, and health behaviours in mothers and children in rural Malawi (MaiMwana): a factorial, cluster-randomised controlled trial. Lancet 381 (9879), 1721–1735. https://doi.org/10.1016/s0140-6736(12)61959-x.
Lindsay, S., McDougall, C., Sanford, R., Menna-Dack, D., Kingsnorth, S., T., A., 2015. Exploring employment readiness through mock job interview and workplace role-play exercises: comparing youth with physical disabilities to their typically developing peers. Disabil. Rehabil. 37 (18), 1651–1663.
Luiz Adrian, J.A., Zeszotarski, P., Ma, C., 2015. Developing pharmacy student communication skills through role-playing and active learning. Am. J. Pharm. Educ. 79 (3). https://doi.org/10.5688/ajpe79344.
Maddry, J.K., Varney, S.M., Sessions, D., Heard, K., Thaxton, R.E., Ganem, V.J., ... Bebarta, V.S., 2014. A comparison of simulation-based education versus lecture-based instruction for toxicology training in emergency medicine residents. J. Med. Toxicol. 10 (4), 364–368. https://doi.org/10.1007/s13181-014-0401-8.
Maes, K., Kalofonos, I., 2013. Becoming and remaining community health workers: perspectives from Ethiopia and Mozambique. Soc. Sci. Med. 87, 52–59. https://doi.org/10.1016/j.socscimed.2013.03.026.
Miri, M., Ramazani, A., Hanafi, H., 2017. The influence of performing "The Health Communication Plan" in suburban villages on the health knowledge and attitude of rural women. J. Birjand University Med. Sci. *12* (1,2), 31–37.
Mirzaei, Kh., Nesari Ashkezari, Sh., Khadivzadeh, T., M., T.S., 2017. The effect of education based on systematic comprehensive health education and promotion model to health volunteers on their female clients' knowledge regarding breast cancer screening. J. Midwifery Reprod. Health *5* (3), 998–1007 (doi: 1022038/jmrh.2016.7979).
Mumtaz, S., Zahra, T., 2016. Role-play as a learning modality in Pakistan. Clin. Teach. 13 (2), 124–129. https://doi.org/10.1111/tct.12406.
Navaee, M., Abedian, Z., 2015. Effect of role play education on primiparous women's fear of natural delivery and their decision on the mode of delivery. Iran. J. Nurs. Midwifery Res. 20 (1), 40–46.
Nullis-Kapp, C., 2005. Health worker shortage could derail development goals. Bull. World Health Organ. 83 (1), 5–6.
Ostovar, R., Fararuie, M., 2012. Comparison of Classic vs Role plays Taeching Methods on Menstrual Hygiene Behavior of Secondary School Girls in Iran. *Social Determinants of Health Research Center, Yasuj Univercity of Medical* Sciences, pp. 410–419 18(5).
Pourghaznein, T., Sabeghi, H., Shariatinejad, K., 2015. Effects of e-learning, lectures, and role playing on nursing students' knowledge acquisition, retention and satisfaction. Med. J. Islam Repub. Iran 29, 162.
Pourhaji, F., Vahedian, M., Esmaeili, H., 2012. Investigating the knowledge, concepts and health behaviors of Mashhad Health Volunteers on Breast Cancer. In: *Iranian Breast Cancer Schedule,* Fifth Year, 5(4), pp. 45–52.
Rao, D., 2011. Skills development using role-play in a first-year pharmacy practice course. Am. J. Pharm. Educ. 75 (5), 84. https://doi.org/10.5688/ajpe75584.
Schlegel, C., Woermann, U., Shaha, M., Rethans, J.J., van der Vleuten, C., 2012. Effects of communication training on real practice performance: a role-play module versus a standardized patient module. J. Nurs. Educ. 51 (1), 16–22. https://doi.org/10.3928/01484834-20111116-02.
Singh, P., 2015. 1 Million Community Health Workers in sub-Saharan Africa. *Columbia University, Earth Institute, Interchurch Center*, *New York*. https://doi.org/10.1016/S0140-6736.
Singh, D., Cumming, R., Mohajer, N., Negin, J., 2016. Motivation of community health volunteers in rural Uganda: the interconnectedness of knowledge, relationship and action. Public Health 136, 166–171. https://doi.org/10.1016/j.puhe.2016.01.010.
Takasugi, T., Lee, A.C., 2012. Why do community health workers volunteer? A qualitative study in Kenya. Public Health 126 (10), 839–845. https://doi.org/10.1016/j.puhe.2012.06.005.
Takemura, M., Kurabayashi, M., 2014. Using analogy role-play activity in an undergraduate biology classroom to show central dogma revision. Biochem. Mol. Biol. Educ. 42 (4), 351–356. https://doi.org/10.1002/bmb.20803.
Turner, J.C., Reynolds, K.J., 2010. The story of social identity. In: Postmes, T., Branscombe, N.R. (Eds.), Rediscovering Social Identity: Core Sources. Psychology Press, UK.
Vareilles, G., Pommier, J., Marchal, B., Kane, S., 2017. Understanding the performance of community health volunteers involved in the delivery of health programmes in underserved areas: a realist synthesis. Implement. Sci. 12. https://doi.org/10.1186/s13012-017-0554-3.
Wang, W., Liang, Z., Blazeck, A., Greene, B., 2015. Improving Chinese nursing students' communication skills by utilizing video-stimulated recall and role-play case scenarios to introduce them to the SBAR technique. Nurse Educ. Today 35 (7), 881–887. https://doi.org/10.1016/j.nedt.2015.02.010.
Wiles, A.M., 2014. Ethical dilemmas in the biology undergraduate classroom: role-playing congressional testimony. J. Microbiol. Biol. Educ. 15 (2), 227–228. https://doi.org/10.1128/jmbe.v15i2.753.
Wouters, E., Van Damme, W., van Rensburg, D., Masquillier, C., Meulemans, H., 2012. Impact of community-based support services on antiretroviral treatment programme delivery and outcomes in resource-limited countries: a synthetic review. BMC Health Serv. Res. 12, 194. https://doi.org/10.1186/1472-6963-12-194.
Xu, X.F., Wang, Y., Wang, Y.Y., Song, M., Xiao, W.G., Bai, Y., 2016. Role-playing is an effective instructional strategy for genetic counseling training: an investigation and comparative study. BMC Med. Educ. 16 (1), 235. https://doi.org/10.1186/s12909-016-0756-4.
Yazdanpanah, B.S.M., Vafaei, F., Salary, M., Yosofy, M., 2013. Community based participatory research a model for health promotion. J. School of Public Health and Health Research Institute 11 (1), 17–28.
Zhao, L., Xie, H., Dong, R., 2015. Volunteers as caregivers for eldery with coronic diseases: an assessment of demand and cause of demand. Int. J. Nurs. Sci. 268–272. https://doi.org/10.1016/j.ijnss.2015.08.003.