

Assessing the Observance of Adult Learning Principles in the Implementation of in-Service Training Programs and the Effectiveness of these Programs from the Perspective of pre-Hospital Emergency Staff in Bam and Jiroft Universities of Medical Sciences in 2018

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Abstract

Introduction: *In-service training is one of the types of training that organizations provide for the development of themselves and their employees. Since adults are trained in these programs, it is necessary to consider the principles of adult education in planning the educational process; Therefore, this study was conducted to evaluate the principles of adult learning in the implementation of in-service training programs and the effectiveness of these programs from the perspective of pre-hospital emergency staff in Bam and Jiroft Universities of Medical Sciences in 2018.*

Methods: *This research is a descriptive-analytical cross-sectional study that was performed on 167 employees of the Center for Management and Medical Accidents and Emergencies of Bam and Jiroft in 2018. The data collection tool was a three-part questionnaire including the first part of demographic information, the second part of the questionnaire on the observance of adult learning principles in in-service training and the third part of the questionnaire on the effectiveness of in-service training from a personnel perspective. The validity and reliability of the questionnaire have been reviewed and confirmed in several studies. Data were analyzed using SPSS software version 20.*

Results: *Of the 167 participants in this study, 16 (9.6%) were female and 151 (90.4%) were male. In terms of degree, bachelor's degree with 86 people (51.5%) is the most and diploma degree with 7 people (4.2%)*

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is the least. There was no significant difference between the observance of adult learning principles in terms of demographic variables and also between the effectiveness of education and demographic variables, but there was a statistically significant relationship between the observance of adult learning principles and the effectiveness of in-service education.

Conclusion: *Considering the significant relationship between adherence to the principles of adult learning and the effectiveness of in-service training, it is suggested that in order to increase the effectiveness of in-service training in the planning, implementation and evaluation stages, be reviewed in terms of compliance with adult learning principles.*

Keywords: *In-service training, pre-hospital emergency, principles of adult education*

Introduction:

Due to the rapid and rapid transformation of human knowledge and information, everything is changing drastically and organizations as an open system interact with their environment and need to respond to environmental changes to survive (1). Institutions that focus on education and human resources and consider it a policy and strategy are more successful. One of the types of training that organizations provide for the development of themselves and their employees is in-service training (2). In-service training is an activity that is developed in order to maintain and increase the ability and competence of employees to perform their assigned tasks, thereby helping the organization to achieve its goals within the framework of its mission (3, 4). In-service training courses also reduce the need for staff control and increase interest in doing work and are one of the basic and effective strategies in maintaining and productivity of human resources. Another advantage of staff training programs is the optimal use of manpower, tools, facilities and proper and desirable management of the organization (5). But just doing the training without considering the results is definitely useless and will not be effective. Today, one of the most effective ways to evaluate the effectiveness of education is to assess the views of education stakeholders about educational programs. Therefore, determining the level of satisfaction of different groups regarding educational activities and their continuity, is a kind of indicator of the optimal performance of educational operations (6).

A study by Zandi et al. (2012) aimed at examining the educational needs of Shiraz University of Medical Sciences staff in order to provide an appropriate educational model and improve human resources shows that there was a statistically significant difference between the existing and desired level of knowledge, skills and attitudes of staff. And the gap between the current and the desired situation was significant and tangible, and there was a need to hold short-term training courses and make qualitative changes. In the end, they concluded that examining and recognizing educational needs is the need for a successful educational system. Usually, this action is the first step in staff training planning and in fact the first factor in creating and ensuring the effectiveness of training and improvement function, which if done correctly will provide a more objective basis for planning and the possibility of meeting the needs of the organization to job areas. And staff and ultimately its efficiency will increase (7). To develop in-service training courses for employees, features such as: adapting the content of the courses to their job needs, proper use of distance learning methods to reduce staff access to opportunities and attention to the dimensions and types of issues required by staff should be considered. Pay attention (8). A study was conducted by Mashayekhi et al. In 2016 with the aim of examining the level of observance of the principles of design and implementation of educational workshops in the field of health of Arak University of Medical Sciences. The results of this study show that the design of the workshops was optimal but the performance of the workshops was moderate. The highest score in the design section was related to matching the content with the objectives

and the lowest score in this section was related to the appropriate number of participants, learners' knowledge of the prerequisites and the appropriateness of the time of theoretical and group discussions.

In the implementation section, the highest score was related to teachers' behavior and impact on learning, clarity of goals and the lowest score in this section was related to the scientific accuracy of the content, lack of complete connection between the content and learners' needs and inappropriate group work (9).

In-service training is an element of the adult education system. Since adults are trained in these programs, it is necessary to consider the principles of adult education in planning the educational process (10). The theory of andragogy (adult education) states that adults are experienced, independent and self-directed. Thus, they can meet their daily needs in demand, be interested in a problem-oriented approach, have more intrinsic motivation, focus on practical solutions, and have lifelong and automated learning (11, 12, 13). Motivation plays a very important role in adult education. Creating a relationship between time, talent, adult needs, the characteristics of educational programs and the selection of real and short-term goals are factors that have a great impact on adult motivation. Agentalind and Johnson state that the feeling of need and internal and external feedback is necessary to attend and follow in-service programs. The real goals of the programs will not be achieved if individuals are forced to participate in in-service training courses solely on the basis of educational regulations or other external incentives (14). Considering that based on the principles of effective education, design of educational programs and empowerment of learners should be done in accordance with the needs, individual differences and background conditions, so the features expressed in adults have many practical implications for teachers in designing and Effective implementation of training programs. Some of the applications of adult characteristics recognition are: Flexibility in choosing time, place and teaching-learning methods, using active and participatory teaching methods, providing appropriate opportunities to play the role and application of what they have learned, involving adults in the curriculum design and evaluation process, benefiting from learners' experiences, ideas and information in the education process, Identify and explain learning outcomes for them; In addition, in order to create and strengthen meaningful learning, it is necessary to explain and examine the impact of the educational program on improving their skills and abilities in solving professional problems (15, 16). Some other principles of adult education that should be considered in planning the educational process are: Coordination of missions and goals of education with the missions and goals of the organization and with the characteristics of the educational system of the society, the existence of a constructive and positive relationship between the learner and the teacher, being respected, and the integration of theoretical and practical training. Each of these principles can have a special impact on in-service training and lead to the development and advancement of adults' abilities and guarantee their quality and efficiency (17).

Employees in the field of health services should be constantly in touch with new medical advances during their service and update their knowledge. Because staff knowledge and skills in health-related speech are of particular importance, in-service training is also of particular importance to this group (2, 18).

Pre-hospital emergency staff are health care personnel whose primary focus is on providing advanced emergency medical care to emergency patients in critical condition. These staff must have the sophisticated knowledge and skills needed to care for and transport patients to be competent to save lives in an emergency (19); And the more correct, accurate and faster the care of these patients, the lower the morbidity and mortality (20). These cares are based on independent judgment and decision-making skills and prioritization gained through training. Pre-hospital emergency staff should have extensive knowledge of all medical and nursing subgroups (21). But sometimes these people either do not have the proper training to work in complex pre-hospital conditions or do not have the necessary equipment. Numerous studies have also shown that sometimes the services provided in the emergency room do not comply with the instructions, which puts the patient's safety at risk. Therefore, improving the knowledge and skills of this group of the

health system will facilitate the provision of emergency care. Due to the significant differences that exist in therapeutic interventions compared to international standard protocols. There is a need for systematic qualitative studies, equipment improvements, curriculum quality improvements, and treatment protocols to improve the emergency medical service system (22, 23, and 24). Therefore, evaluation of in-service training programs from the perspective of learners can be effective in identifying the needs, strengths and weaknesses of programs, issues and shortcomings, ways to maintain and promote strengths and suggestions to eliminate weaknesses and help us in It helps to determine the effects and results of retraining and the need to review them; And considering that this study has not been done in pre-hospital emergency in the country, so this study aims to investigate the observance of adult learning principles in the implementation of in-service training programs and the effectiveness of these programs from the perspective of pre-hospital emergency staff in universities of science Bam and Jiroft medicine was performed in 2018.

Material Methods:

This descriptive-analytical cross-sectional study was performed in 2018 in Bam and Jiroft Medical Emergency and Accident Management Center; The purpose of this study was to evaluate the level of observance of adult learning principles in the implementation of in-service training programs and the effectiveness of these programs from the perspective of pre-hospital emergency staff in Bam and Jiroft universities of medical sciences. Staff participated in the study if they had the consent and conditions to enter the study. The research sample was the same as the research community. In this study, census method was used. In order to achieve the objectives of the research, the researcher, by observing ethical considerations and receiving a letter of introduction from the School of Nursing and Midwifery and a code of ethics from the Vice Chancellor for Research and Technology of Bam University of Medical Sciences, referred to Bam and Jiroft Medical Emergency Management Center. Permission was obtained from emergency officials to state the objectives and benefits of the research. Then the sampling stage of the study began. The researcher goes to the staff and after providing sufficient explanations to the subjects before starting the research about the goals and process of the work, emphasizing the confidentiality of the information collected and reassuring to leave the research project if desired, Informed consent form was obtained from the subjects.

The data collection tool was a questionnaire developed in previous studies and consisted of three parts: The first part includes questions related to the collection of demographic information of the study participants, which included age, gender, level of education, work experience and teaching experience in in-service training courses. The second part included questions to assess the level of adherence to the principles of adult learning in in-service training (13 items). The response to each item is scored on a 5-point Likert scale. Each item has "always", "often", "sometimes", "rarely", "never" sections. The score of each item is between 1 and 5; Which is given a score of 5 for "always" and a score of 1 for "never". Therefore, the minimum and maximum scores in this section were 13 and 65, respectively. The third part included questions to evaluate the effectiveness of in-service training from a personnel perspective (11 items). The response to each item is scored on a 5-point Likert scale. Each item has sections "strongly agree", "agree", "have no opinion", "disagree", "strongly disagree". The score of each item is between 1 and 5; "I totally agree" with a score of 5 and "strongly disagree" with a score of 1. Therefore, the minimum and maximum scores in the questionnaire to evaluate the effectiveness of in-service training from the perspective of personnel were 11 and 55, respectively.

The validity and reliability of the questionnaire have been evaluated in several studies with a validity of 85%; To confirm the reliability, Cronbach's alpha method was used, which the reliability of the adult education principles questionnaire was 75% and the reliability of the in-service training questionnaire was 76.3% (10).

Data were analyzed using SPSS software package version 20 and using descriptive statistics and inferential statistics with a significance level of $\alpha \leq 5\%$.

Results:

Out of 167 participants in this study, 61 (36.5%) were from Bam and 106 (63.6%) were from Jiroft. 16 (9.6%) were female and 151 (90.4%) were male. In terms of degree, bachelor's degree with 86 students (51.5%) was the highest and diploma degree with 7 students (4.5%) was the lowest. 149 (89.2%) of the participants had an operational position and 18 (10.8%) had a staff position. In terms of place of work, urban operations with 87 people (52.1%) had the highest and staff operations with 18 people (10.8%) had the lowest. 162 people (97.0%) do not have teaching experience. The minimum age was 21 and the maximum was 46. Minimum work experience was 1 year and maximum 24 years. The minimum adherence to the principles of adult learning was 13% and the maximum was 65%. The minimum effectiveness of in-service training was 11% and the maximum was 55%. In this study, there was a significant relationship between adherence to adult learning principles and the effectiveness of in-service training ($p < 0.001$, $r = 0.418$). Average level of observance of adult learning principles in terms of place of work (according to independent t-test, with $p = 0.71$), gender (according to independent t-test with $p = 0.472$), degree (according to ANOVA method with $p = 0.828$), place of work (According to ANOVA method with $p = 0.839$), teaching experience (according to independent t-test with $p = 0.392$) were not significantly different.

The mean effectiveness of in-service training was not significantly different in terms of city of service (according to independent t-test, with $p = 0.764$), gender (according to independent t-test with $p = 0.215$). In this study, the effectiveness of in-service training in terms of degree (according to ANOVA test with $p = 0.557$). Place of service (according to ANOVA test with $p = 0.216$) Teaching history (according to independent t-test with $p = 0.139$) were not significantly different.

In the present study, there was no significant relationship between the level of adult learning principles and age ($p = 0.541$), work experience ($p = 0.878$) and also between the effectiveness of in-service training and age ($p = 0.435$), work experience. ($p = 0.743$).

Discuss:

Based on the results obtained in this study, it was found that there is a significant relationship between adherence to the principles of adult learning and the effectiveness of in-service training, which is consistent with the results of Hosseinpour (2012) (10).

The reason for this similarity can be due to the similarity in individual, evolutionary and professional characteristics of the studied samples, the proximity of the number of studied samples and the use of the same study tool. Failure to consider issues such as ethnicity, selection of training tools and methods (based on environmental characteristics, personality and national, regional and professional identity) and the principle of coordination can reduce the effectiveness of in-service training courses (17).

Failure to review the effectiveness of the training can lead to ignorance of the outcome of the courses, which can be one of the biggest problems of training because it is not possible to comment with certainty on the effectiveness of the training (25); Therefore, it is suggested that the learning and performance skills of staff be evaluated continuously and at regular intervals. In addition, it is suggested to use up-to-date and efficient models in the field of health sciences for proper evaluation (2). Because the high effectiveness of training can be associated with increasing the ability of employees, which can be a reason to observe the principles of learning in in-service training courses.

Findings from this study showed that the effectiveness of training is not desirable, which was consistent with Ebrahimi (2012) (26), but the findings of Zarparvar et al. (2013) show that nurses and head nurses perform training courses. Have evaluated positively and stated that in-service training has an effect on their job performance (4) which is inconsistent with the results of the present study. The reason for this discrepancy can be found in the implementation methods of in-service training in different environments. Other reasons include ethnic and cultural differences, different evaluation tools, and lack of interest or support from managers (27).

Based on the findings of the present study, it was found that the degree of adherence to the principles of adult learning is not desirable and the type of training used in in-service training courses is more teacher-centered than inclusive. Non-interaction of teaching methods, lack of students' participation in the discussion and lack of interaction between teacher and learners can be possible reasons for the ineffectiveness of these trainings, which was similar to Hosseinpour (2012) study (10). Instructors' lack of knowledge about the principles of adult education and their characteristics, non-compliance with the principles of adult education may cause staff to not participate in subsequent in-service training courses. In-service training is in most cases non-interactive and it is not possible to share learners' experiences in it.

Lectures by professors, their unfamiliarity with new teaching methods and patterns, especially participatory methods can be one of the main reasons for dissatisfaction of participants in these programs. Participation in educational activities is one of the important principles of adult education that is emphasized by most theoretical perspectives in this field. Adult teaching methods should be flexible and, given the differences, allow learners to progress at their own pace. Learning objectives should be properly explained at the beginning of the training course for learners to be aware of the objectives and approaches. It is also possible to support their intrinsic motivation to learn by providing a learning environment that engages learners and encourages them to be active participants (5, 17, 28). Since the field of emergencies and emergencies is providing services to the most diverse and sensitive group of patients has always been of particular importance (29). Therefore, it is suggested that experienced specialists and the best teaching methods be used in these courses, taking into account the differences of learners, inclusive teaching methods and observing the principles of adult education.

According to the statistical results, the observance of learning principles did not show a significant difference between the two sexes, but it was more in women than men, which is one of the reasons why women value learning principles more. In Dehghani (2015) study on the application of education principles in in-service education programs to primary school teachers in Yasuj, a significant difference was observed between the two sexes in observing learning principles and women followed learning principles more than men. (17) which was not consistent with our study, which could be due to the small sample size of women in the present study.

Conclusion:

Based on the results of the study, due to the significant relationship between adherence to the principles of adult learning and the effectiveness of in-service training and given that the adherence to the principles of adult learning is not desirable, we can expect that the effectiveness of education by increasing adherence to the principles of adult learning Increase; Therefore, it is suggested that in order to increase the effectiveness of in-service training in the planning, implementation and evaluation stages, they should be reviewed in terms of compliance with the principles of adult learning. Observance of the principles of adult education in the planning and implementation of these trainings can improve the quality of these programs and provide the possibility of achieving the ultimate goals of in-service training.

The limitations of this study include the following:

- 1- The unwillingness of the staff to participate in the research, which we tried to increase their willingness to cooperate in the project by explaining the objectives of the project and the usefulness of the results in order to improve the level of training.
- 2- In this study, considering that the method of data collection is based on personal report, which can face limitations according to the subjects under study, the most important and serious issue is the accuracy of the answers provided by the samples. And how can the information provided by the respondents be trusted? Because most of us have a laid back attitude when it comes to painting a picture about ourselves. Of course, researchers often have no choice but to assume that most respondents are right (15). In the present study, an attempt was made to increase the accuracy of their answers by explaining the objectives and importance of the study to the participants. It is also recommended to use more accurate methods such as interviews in future studies to examine because the individual differences and honesty of the participants in answering the questions can affect the results of the study.
- 3- Other limitations of this study include the limited population of the study, which can affect the generalizability of the results. Therefore, it is suggested that in future studies, a wider research community be used to obtain results with greater generalizability.

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