

A Comparison between In-Presence and Distance Learning Methods on the Knowledge of Workers in Health Centers in Amol city, 2013

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Abstract: *Background:* Among all various activities around the country, those which are in relation with health, safety, convenience, and generally with social welfare of people have a great importance, among which, health centers are in a specific place of attention. Cooperating with and being supervised by health bureaus, the health centers are the pillars to perform health programs and also to execute health networks in Iran. In continuous medical learning programs, selection of learning method, during which the people will be streamed by learning process, is one of the problems for agencies or planners. Considering above mentioned instances, the researcher attempts to plan and perform this study and hopes to obtain effective results to improve continuous learning of practical nurses. *Goal:* The goal of this study is to compare in-presence learning method with distance learning method and define the effect of them on the knowledge of workers in health centers (practical nurses) in Amol City in order to reduce expenses. *Study Method:* The study is an applicable study from viewpoint of its goals. On the other hand, it is a descriptive study in case – control type. In this study, the researcher performs various learning programs in order to change the level of knowledge among workers of health centers and assesses this change during a comparison between primary and secondary tests. In this study, one group is control group and three groups are case groups, all of which are selected among practical nurses in Amol City by random selection method. The data is collected in two stages, before and after performance of learning program. The comparison is made by Mc Timar Test, paired t-test, analysis of variance and HSD test. *Findings:* According to results, it is specified that participation in classes is difficult for half of the studied units (51.7%) and 45.7% of people tend to pass their courses (studying hygiene) by distance learning methods (self-teaching + communicating with professors). *Conclusion:* Distance learning method has been more effective than in-presence learning method in elevation of the level of knowledge of people when trainees had been informed of final examination.

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1. Introduction

Among all various activities around the country, those which are in relation with health, safety, convenience, and generally with social welfare of people have a great importance, among which, health centers are in a specific place of attention. Cooperating with and being supervised by health bureaus, the health centers are the pillars to perform health programs and also to execute health networks in Iran.

In continuous medical learning programs, selection of learning method, during which the people will be streamed by learning process, is one of the problems for agencies or planners. Considering above mentioned instances, the researcher attempts to plan and perform this study and hopes to obtain effective results to improve continuous learning of practical nurses.

In 1991, Ashk-Torab considered and compared the effects and methods of lecture learning and the use

of instruction pamphlets to increase knowledge of nurses about Hepatitis B in hemodialyze section of hospitals of Ministry of Health, Treatment and Medical Learning of Tehran. The results of this study showed that learning through two different methods has been effective to increase the level of knowledge of nurses. But no significant difference was seen between the uses of these two learning methods. None of the methods was superior to the other one. It was also specified that the parameters of age, gender, marital status, working background in hemodialyze section, passing in-service courses, being instructed about hepatitis B and suffering background of trainees or their relevant from hepatitis have not been effective to increase the level of their knowledge after instructions.

A study was performed by Ghasemi to compare the effects of “lecture” learning method and “lecture and pamphlet” learning method on appearance of symptom of deceases in university hospitals of

Tehran. The data for this study was collected by means of a questionnaire and a check-list, and it was recognized after analysis that two learning methods have no difference.

Study Method:

The study is an applicable study from viewpoint of its goals. On the other hand, it is a descriptive study in case – control type. Statistical society of study includes 248 practical nurses who work in 141 health centers in Amol City. Through a primary test, those nurses who obtained a grade ranging 15 to 20 were set in a same cluster. A random selection method was enjoyed, during which 151 people were selected in four groups as following:

- 1) 48 people in in-presence learning group
- 2) 35 people in distance learning group who were informed of secondary test performance
- 3) 34 people in distance learning group who were not informed of secondary test performance
- 4) 34 people in control group

Data is collected by a questionnaire. The questionnaires used in primary stage were similar for all groups. Some explanations about study were described in the questionnaires and then, some basic questions about age, working history, marital status and the number of children were asked. To recognize interests and opinions of nurses about health learning, preferred learning method, studying and personal learning, and some other questions were presented in the questionnaire. The last part included 24 scientific questions to assess knowledge of nurses about various health instructions. Content Validity Method was used to define scientific value of the tool to collect data.

Findings of Study:

If we accept continuous learning of human power especially workers of different organizations as a necessity to have a comprehensive development in our country, and think about coordination between current executive affairs and modern science, doubtlessly we will discover the requirements to understand effective and appropriate learning methods for continuous learning of specific groups.

Total goal of this study is to have a comparative consideration of the effects of in-presence and distance learning methods focused on health learning content, to improve the knowledge of practical nurses of health centers in Amol City in 2010.

According to achievements about features of under study society, among all 151 studied nurses 17.2% were less than 37 years old, 53.6% were 37 to 39 years old and 29.1% were more than 39 years old. Average age of these people was 38.5 years old.

In this society, 25.8% of people had less than 15 years working background, 56.3% had 15 to 17 years working background and 17.9% had more than 17 years working background.

89.4% of under study subjects were married and only 10.6% of them were single.

According to participants in this research, their average study during last 5 years had been 3.9 hours per week (standard deviation: 4.69). Discussion with experts inside the organizations had no effect to increase scientific knowledge of nurses in health centers. 98.6% of participants believe a high importance for health learning courses to increase scientific knowledge of nurses. 54.3% of studied subjects intended to participate in final examination, but 45.7% did not.

62.3% of people had a positive viewpoint about “self-teaching” and accepted this statement: “If teacher acts as a source to resolve problems, people can reach an appropriate level of knowledge by personal learning”, but 26.5% had a negative viewpoint and 11.2% had no idea. 71.5% of participants explained that they have studied again their textbooks after graduation, and 89.4% of them declared that they have tried to find and study new resources.

According to consequences, it is obvious that about half of the studied subjects (51.7%) have problem to participate classes and 45.7% intend to pass learning courses (health learning courses) by distance learning methods (self-teaching + communication with professors).

Bases on above-mentioned outlines, it is understood that the studied subjects include middle-aged women who have reached about the middle of their working life, and most of them manage their houses and train their children, so it may be concluded that why more than half of nurses have problem to participate classes and prefer distance learning methods.

Although this society has a relatively low level of study, but personal study is an important factor among first three priorities to take scientific knowledge and even previous to common relearning courses; so, according to participants an acceptable percent of them study old and new scientific resources of health instruction, and many of them have pointed at importance and necessity of health instructions and principles to improve their efficiency. I also saw that unfortunately the experts of organization (probably due to few personnel) have not been able to play they role as a resource to solve problems and to transfer information whiting this group.

As it is mentioned, more than half of people intended to participate in final exam although they had to participate in other courses beside their all occupations. Doubtlessly, a part of such this intention can be attributed to competitive mentality of people (in chapter 2 we mentioned that such this mentality decreases in adults), but we may consider that in

mental background of these group, an individual will be granted by credits of a relearning course only if he or she participate in final exam.

It can be perceived that except for low level of studying, other features and opinions of studied society have created totally a suitable situation for researches.

About the first and the second goals of this study (definition of the effects of in-presence and distance learning methods on the level of scientific knowledge of nurses about health learning in health centers of Amol City) it is defined that learning through both methods is effective to improve the knowledge of nurses. The results of this study are coordinated with the results of the research by Yaghoobi and Ashk-Torab.

Lack of difference between knowledge score of control group in primary and secondary tests indicates that while performance of study, no factor instead of learning through these two methods has been effective; so, the second hypothesis is accepted (learning is effective on the level of knowledge of workers in health centers in Amol City in various health fields).

In none of test and control groups, required variables have been effective on the level of changes in knowledge of people. These variables include: working background, marital status, number of children, level of study, tendency to participate in final exam or not, positive or negative viewpoint about self-learning, restudying instruction pamphlets or not, finding and studying new resources, existence or lack of any problem about participation in classes and desired learning program.

In order to attain hypothesis 4 (there is no difference from level of knowledge about various health subjects between control group and the group which is training by distance learning method who are not informed of final exam performance, before and after taking self-learning pamphlets), the result of variance analysis and HSD Toockie Test shows that there is a significant statistical difference in average scores of secondary tests between four groups of nurses in this study (two by two and in all possible pairs). So, according to similarity and coordination of average scores of primary test of groups, it can be concluded that:

1- Distance learning method has been more effective than in-presence learning method on elevation of the level of knowledge of people when those who were passing courses had been informed of final exam. So, the fourth hypothesis of study based upon similarity of the effects of in-presence and distance learning methods, is rejected.

2- In cases that people who were passing distance learning courses had not been informed about

performance of final exam, obtained post-test scores have been too less than distance and in-presence learning groups and the difference has been significant. Such a difference can be attributed to variable of knowledge of people about final exam.

3- Although in secondary test, all learning groups had higher average scores in comparison with control group and these differences is meaningful statistically, but it should be mentioned that the difference between distance learning groups and control groups is too low. By the way, it may say that: fourth hypothesis of study according to similarity of the level of knowledge of people (about health learning subjects) is accepted during primary tests for distance learning group and control group, but the second part of this hypothesis according to similarity of knowledge during secondary tests and after passing learning courses is rejected.

Following results are achieved after comparing different methods of distance learning (from the viewpoint of obtained scores):

1- Among three methods used for self-learning, namely ordinary writing, planned learning and illustration, only two first methods create a statistical difference and improve the scores of distance learning group toward in-presence learning group, but as it is mentioned previously, the members of distance learning group had replied the questions of first section (about simple ordinary writing) better than members of in-presence group, and this difference was significant. So, in such a comparison, only the priority of planned learning method over two other methods is emphasized.

2- Among these three methods, only planned learning method creates statistical difference and improves the scores of members in distance learning group toward members of control group.

It may be said that comparing learning methods will be never completed. In this research, this subject is paid attention and depends on consideration and comparison of interests and opinions of members in in-presence and distance learning groups after passing instruction courses (there has not been any opportunity in this study to compare the function of people after learning).

According to results, 78.3% of people in both groups have assessed a high level of profitability for learning courses (about health learning) and there is no difference between the ideas of two groups. It may be added that while only 43.8% of people in in-presence group believe that the current teaching method (lecturing) is an interesting method, 89.6% of them believe a totally good capability for their teacher (researcher) and 10.4% believe an average capability, so, most of the members of in-presence learning group were satisfied.

Also, 77.1% of people in two groups have declared that the subjects to be studied have been highly new. 57.8% of them have assessed an average and ordinary level for difficulty or simplicity of subjects. Results of X^2 Test show no difference between two groups, but a significant difference ($P < 0.05$) was obvious between members of two groups in assessment of "self-learning". Most of the members of in-presence group (91.7%) had a positive imagination about their level of knowledge, but such imagination had been created in only 68.8% of members in distance learning group (although the latter group had obtained better scores in posttests). As this period was the first self-learning experience for 100% of members of distance learning group, inadequate self-confidence and disability to have a proper assessment for members were the reasons to create such a problem.

Also, the level of self-study among the members of distance learning group was significantly more than the members who decided to use classes, of course it was a natural subject. Both groups had decided to use practically their learnt subjects and the members of two groups had a high tendency in this regard. There was no significant difference between two groups; so, it can be concluded that in-presence and distance learning groups, both were equally able to motivate individuals to apply their learning in practice. A high percent of members in both groups believed that in-presence learning method was more successful than distance learning method. Although such this declaration is obvious more among the members of in-presence group, but there is no difference between two groups too. This situation may be attributed to lack of knowledge of people about personal capabilities and unrelated learning methods. The results also show that all members of two groups tend to participate in complementary courses after completion of regular courses and only two members in in-presence group have not such this tendency. In this connection, 65.1% of members have suggested compound method (self-learning + participation in classes) for complementary courses. 94% of studied subjects in both groups believe highly in experts and resources to remove scientific ambiguities and problems and two groups have no difference. So, in total comparison between two in-presence and distance learning methods, as:

1) Two methods are equal to create satisfaction, to motivate comprehensively to apply learning subjects practically and to explain subjects,

2) Members of distance learning group have learnt significantly more (when they have been informed of final exam) and learning process was more active,

3) Distance learning method is applicable for a large and distributed group of people with a low

expenses without suspending working places (although such this topic requires a separate study),

So, preference and superiority of distance learning method on in-presence learning method should be recommended in this study. The results of this study are coordinated with the results of the research of Yaghoobi and Ashk-Torab.

It also assists us to compare various distance learning methods used in this study. As it was mentioned, the situation of interests of distance learning group about various sections of this pamphlet is as following:

According to majority of members (60%), the subjects of third section (about various learning methods of health) are the most attractive and suitable subjects. So, it may be said that more attractive subjects are included in training program of this group which are close to their working areas and assist them in their duties. 45.7% of people like writing style and presentation of subjects in third section (illustration) and the same number of people (about 40%) prefer presentation style of second section (program learning), but ordinary writing style was not appreciated too much. The results of this study are coordinated with the results of the research of Yaghoobi and Torabi.

As it is observed, most of the people have allocated the least time to study illustrated section, but the most time to study planned section of pamphlet. A high percent of people (71.4%) believe that the subjects of second section are more complicated than two other sections. It should be said that first of all, the subjects of second section about learning psychology have been less perceptible and understandable because of being far from occupational problems, and lack of direct application possibility in job activities, so they are more difficult-to-understand. Second of all, preparation of planned learning texts requires high experience and skill and should be assessed in multi stages to offer a complete text at last. As it is explained, the above-mentioned planned text was not included in the great group (the last stage of assessment) due to short executive possibilities and so, existence of some deficiencies is inevitable. A series of similar problems may be accounted as the reason of complexity or more required time to read this section. It may be indicated that preparation of any type of learning text should be exactly accurate, as the illustrations of third section of self-learning text are related to a work by World Health Organization (WHO) which are assessed many times.

By means of mentioned subjects to compare different distance learning methods, it should be said that:

1) In comparison between scores, planned learning method has been more successful than two other methods.

2) To create motivation, planned and illustrated methods are almost similar and interested.

3) Planned learning method has been able to involve learners more with teaching-learning process and motivate them to study more and learn better the difficult subjects.

So, planned learning method is defined as the preferred method among distance learning methods in the current study, but generally it is emphasized that selection of a learning method should be according to many subjects such as learning topic, feasibilities, situation of learners, etc.

Suggestions of Researcher:

1) Whereas the findings of this study show the efficiency of distance learning methods in the society, it is necessary to refer the findings to planners and authorities of health center and executors of relearning courses. These authorities may hold theoretical relearning courses according to distance learning methods (to increase the knowledge of case group) and spend the feasibilities and expenses to hold complementary courses and instructive workshops.

2) It is suggested to Ministry of Health and Treatment to cooperate with university professors and learning technologists to prepare required learning subjects in self-learning style and in the form of book, pamphlet and journal, and offer them to practical nurses and students of Teacher Training Centers. Using colors, images and planned learning programs to compile such these books will create more attractiveness. Anyway, if the organization spends any expense to prepare these resources, required assessment plans should be taken to avoid wasting capitals (due to lack of social studying of provided subjects).

3) To pay more attention to learning group and to maintain a central role for them, it is suggested to take any step to provide their interests, requirements and problems. In this regard, active participation of learners should be attracted in all stages of learning, especially to define their learning requirements. To have higher coordination between in-service courses and problems of learning group, the learners may be granted by the right to select any option of in-presence learning method or distance learning method (such as personal projects, ...). It is always better to perform learning assessments according to learnt subjects of members not their physical participation in the classes.

4) It is suggested to highlight and introduce personal capabilities of nurses in health centers (and other workers) to strengthen their self-confidence to prepare them for their learning duties. Doubtlessly, distribution of the results of current study and other

similar researches will speed up the trend of creation of this mentality.

5) It is suggested to increase the study interest among people. Followings are some ways: creation of library potentialities, preparation of books and holding book fairs, definition of some experts inside the organization with various specialties for consulting services and removing scientific and practical problems of personnel (during study or work), holding book reading competitions and encouraging superior people, and introduction and description of provided feasibilities.

Suggestions for Further Projects:

Since any study can be a base and direction for further projects, following studies are suggested in this research:

- A comparative consideration of the effects of in-presence and distance learning methods on teaching other courses and in other groups.

- A comparative consideration of the effects of in-presence and distance learning methods on behavior of learners.

- A Comparative consideration of the level of memorization through in-presence and distance learning methods in Zeros Test.

- A consideration and comparison between various learning methods from cost – efficiency viewpoint.

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