

Original Article

The effective compatible in-service training: A structured review of literature

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ARTICLE INFO

Received 8 July 2015
 Revised 23 August 2015
 Accepted 28 December 2015
 Published 29 December 2015

Available online at:
<http://npt.tums.ac.ir>

Key words:

staff training,
 educational effectiveness,
 educational model,
 meta-synthesis,
 structured review

ABSTRACT

Background & Aim: Undoubtedly, the knowledge and skills of the employees lead to the survival of the organization. The purpose of this study is to investigate the important issues in designation and implementation of staff in-service training models to determine a framework for designing the efficient nursing continuing education models.

Methods & Materials: This study is a structured review based on Cochrane five-step protocols, in which 18 qualitative articles from six English, and three Persian databases were extracted and analyzed using seven-step process of Noblit and Hare method in meta-synthesis without any limit of time. The English databases included "Science Direct, PubMed, Google Scholar, EBSCO, Proquest, and SAGE Journals" and Farsi databases were "Noormags, Iran Doc, and SID." A standardized protocol along with specified criteria was used to study selection.

Results: In the initial analysis of findings four themes were extracted: process for staff training, method for staff training, educational effectiveness, and specific model for staff training. The final analysis of findings showed that the models presented in the field of staff training can be generally divided into three categories: (a) Models that deal with the designation of processes and functions of staff training, (b) models that focus on the effectiveness of staff training, and (c) models that deal with both aspects.

Conclusion: This study highlights the important role of effectiveness strategies as well as compatible training functions in designing the nursing staff in-service training models. In this way, the staffs motivate to participate actively in the organizational trainings.

Introduction

Organizations require to continuous adaptation to the environmental conditions and in-service training of human resources along with organizational performance management is the first step to achieve sustainable successes (1). The most important factors in the prosperity of great organizations are the creation of knowledge, innovation and using competitive advantages (2). In general, in-service training

is the acquisition of defined knowledge, skills, values, beliefs and attitudes which are necessary for the development of the organization (3). In-service training of nursing staff is also very important and has an important role in improving the quality of hospital services. reconstruction and improvement of nursing in-service training pattern improve patient care quality (4). In-service staff training involves a wide range of actions and processes that show the map or path of implementation of training and determines the cycle of operations and their precedence (5). Planning, implementation, evaluation, and development of education are considered as the main functions of educational management

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which is remembered as the educational process (6). Determining the educational process is one of the most important steps in designing and managing the educational systems (7). Some experts have more emphasis on the necessary functions in this field. From Singer's viewpoint (8) main stages of staff in-service training includes needs assessment, designation of the educational program, selection of learning methods, and evaluation of learning outcomes. Craig (9) believes that the staff in-service training process consists of five stages: Analysis, design, development, implementation, and evaluation, which is briefly called ADDIE. Stone (10) believes that the staff in-service training process involves three basic steps: needs assessment, implementation, and evaluation. Other experts put more emphasis on educational methods and teaching tools. Chang (11) defines the instructional process as the steps of recognizing the needs, instructional designing, producing tools, using proper techniques, evaluation of results and follow-up. Some scholars consider the method of teaching and conveying information as the most important component of staff in-service training. Dugan Laird believes that the preliminary stages of staff training designation include discovery and exploration of the issue or problem, identifying inefficiencies causing the problem, identifying solutions, and selecting the best solution (12). Bradford believes that in-service training programs should be effective in recognizing the organizational defects, curing deficiencies and improvement of the individual performance (13). According to Sahinidis and Bouris (14) training should be compatible with organizational culture. Some researchers have mentioned multidisciplinary, case study format, dynamic training process, comprehensive, and community building as the five features of in-service training model (15). According to the mentioned issues, despite the large volume of texts, articles and papers in the field of designing of organizational training models some of which are about the staff training process and functions and some other focus on implementation method of organizational training, the basic and fundamental issues in designation and implementation of staff training models is unclear. This study seeks to understand the fundamental issues in designation and implementation of staff training models and to determine a framework for designing and implement-

ing impressive nursing staffs training models.

Methods

The systematic review of the literature was conducted based on Cochrane five step protocols. At first review question formulated. This study seeks to answer the following questions:

- What are the common themes in researches related to staff in-service training models?
- What are the focal issues in designation and implementation of staff in-service training models?

In the second step, searching and selecting of studies performed. Since the search strategy was reviewing the exquisite and innovative researches, just the English or Persian published full-text articles, including qualitative and quantitative studies, were reviewed without any limit of time. Because of the restrictions of access to English journals, only electronic articles were included. The English databases "Science Direct, PubMed, Google Scholar, EBSCO and Proquest along with SAGE Journals" and Farsi databases "Noormags, Iran Doc, and SID" were used to search the following substantive keywords:

"Staff training model," "Organizational training model," "Staff training management," "Organizational training management," "Organizational education management," "Organizational education model," "Staff training design," "Organizational training design," "Organizational education design," "staff training," "Continuing education," "Nursing staff training."

Finally, 18 qualitative researches were entered the study. Selected studies had four characteristics:

The research question was clear, the findings were reliable, and the results were applicative and were described clearly. Exclusion criteria of articles were as follows:

Languages other than English or Persian, only abstract available, views of experts, not expressing the methodology and results, concerning academic training models, studying only one component of the staff training process, exclusively examine the effects of staff training on various aspects of the organization, news, books, and reports.

The process of selecting articles consisted of two phases. In the first stage, the title and abstracts of articles were studied for a possible compromise with the inclusion criteria and secondly full-texts of articles selected in the first

stage were reviewed to determine whether they met inclusion criteria. Selection of articles was done by two authors (Ch, M-A, A). Researchers independently extracted data from the studies and entered in the code sheet.

In third stage quality of study evaluated. Methodological quality of the studies was evaluated separately by two evaluators (Ch, M- A, A). The quality of the articles was assessed using the adapted version of the STROBE. Those articles which had great differences with the minimum of critical evaluation criteria were excluded from the study. Disagreements were resolved through discussion between browsers. If the disputes were not resolved, the third browser (E, A) was referred. Extracting data from studies and data synthesis were the final steps of review.

The analysis process

In this study, the seven-step process of Noblit and Hare (16) method in meta-synthesis was used to extracting data and data analysis. At first, the selected studies were thoroughly studied and summarized by the research team and then their goals, questions, and results were examined according to the scientific principles of staff training models. Then, each member of the research team separately extracted the key concepts of the studies using qualitative and conceptual methods and finally the key

concepts were determined through discussion among members of the research team. Key concepts are presented as the themes extracted from the studies. In the next step, the relational framework of the studies was determined with regard to the key concepts extracted from studies. Then, the studies were translated to each other in two dimensions (reciprocal translation and reputational translation) and it was determined where they match and where they have conflict with each other. Finally, the line of argument was determined by combining the concepts extracted from studies and expressing the synthesis was performed.

Results

In search of electronic databases, a total of 5004 English and Persian articles were found. 4816 articles were excluded via studying title and abstracts. After full text study, 18 articles were selected for final analysis (Figure 1).

The selected studies have been conducted in the time range of 1984-2013 in different parts of the world, and all of them are qualitative. One study was conducted in India, one study in Romania, one study in Denmark, two studies in China, one study in Malaysia, two studies in Iran, one study in Canada and eight studies in Us, as well just four studies were in the field of nursing (Table 1).

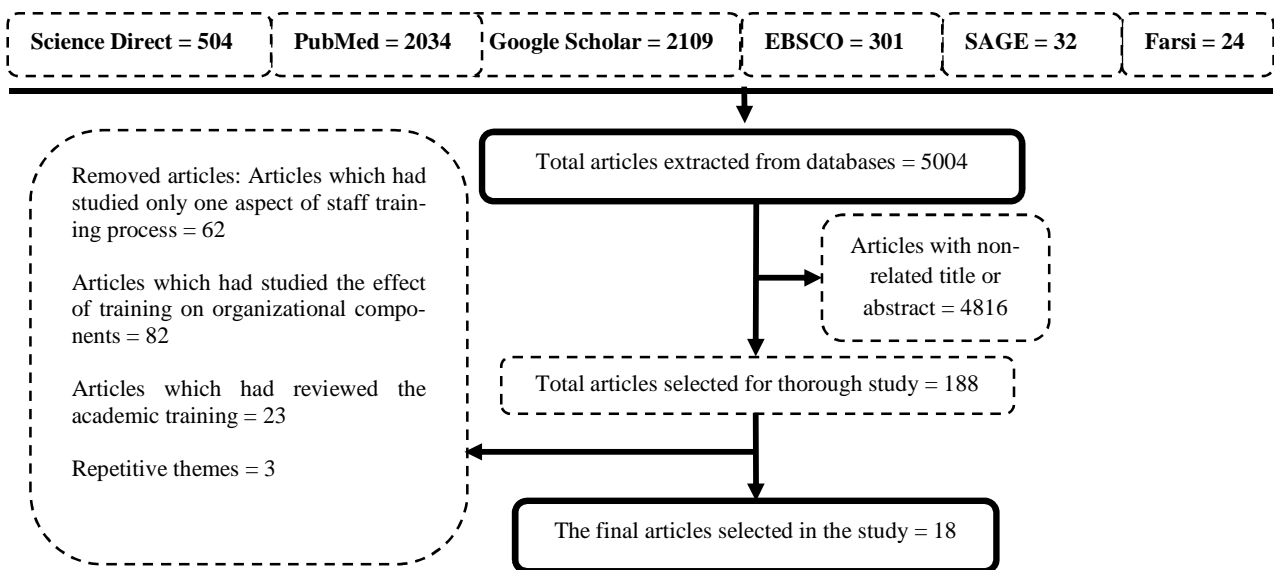


Figure 1. The process of searching and selecting articles

Table 1. The selected researches on staff training models

First author, year of publication and country of study	The purpose of the study	Method	Results
Yamada and Montague, USA	Presenting an educational model for staff training in orthopedic therapy	Interventional-action research	Providing a four-step model of staff training process as well as a method of teaching staff (17)
Ducharme and Feldman, Canada	Comparison of staff training strategies to promote generalized teaching skills	Comparative	General case training is more effective than single case training, written instructions and common stimuli training (18)
Smith (2001), Australia	Presenting flexible delivery model of training in the workplace	Synthesis	Providing a three-part model of flexible education at workplace (19)
Chen and Klimoski, USA	Development of a model for human resources training	Review article	Providing a three-step model of training and development process of human resource as well as a way to design a teaching and learning process (20)
Sum, USA	Presenting a framework for managing training programs in organizations	Scientific literature review and interview and delphi	Providing a three-step model for staff training with each step including consecutive sub-steps (21)
Balkin and Richebe, USA	Development of a gift exchange perspective on organizational training	Review-analytic	Providing the model of organizational training from the perspective of profit exchange (gifts) based on the principles of social exchanges within the organization (22)
Fardanesh and Karami, Iran	Identification of desirable educational planning model for industrial educations	Comparative	Constructivism instructional designing model for management level and systemic instructional designing model for staff groups is appropriate and effective (23)
Sanders, USA	Staff training, management support and monitoring the restraint use and costs of work-related injuries	Interventional-action research	Staff training with practical approach as well as support and follow-up by management through monitoring and following-up the results is effective (24)
Xu and Wang, China	Training system design for middle-level manager in coal enterprises	Scientific literature review and delphi	Competence-based education raises the level of staff performance and help them to adapt to the changing environment (25)
Pourkarimi et al., Iran	Designing an educational system for Iran's red crescent human resources	Scientific literature review and delphi	Designing a four-stage model for staff training inspired by the models of Goldstein and ISO 10015 (26)
Weaver et al., USA	Studying simulation-based team training in healthcare	Systematic literature review	The team communications and shared subjective models lead to training effectiveness (27)
Mat, Malaysia	Presenting problem-based learning using systems approach	Review-analytic	Providing a systemic model of training based on problem-based learning (28)
Li and Tang, China	Research on personnel training model of URT under instruction of CDIO	Descriptive-analytic	The training model CDIO is an effective model for professional and post-professional training by increasing basic knowledge, personal abilities, teamwork skills and the system abilities (29)
Ammentorp et al., Denmark	Mandatory communication training of all employees with patient contact	Intervention	Providing a model focused on the process and method of staff training in the field of mutual understanding of the patients problem and how to respond it (30)
Bluestone et al., USA	Identification of effective in-service training design and delivery	Integrative review	Intervention trainings are more effective than verbal trainings and lectures, and the use of multiple techniques is one of the effective methods in In-service trainings (31)
Parsons and Rollyson (2012), USA	Evidence-based staff training	Descriptive-analytic	Evidence-based staff training is an effective model in teaching staff behavioral skills and techniques (32)
Dragomiroiu et al., Romania	Staff training description and analysis	Review-analytic	Introductory tutorial by explaining the general policies of the organization and representing the interests of the organization for employees creates a sense of belonging to the organization and improves the staff performance (2)
Mahajan and Nagendra (2014), India	Developing a training model to teach IT for visually impaired students	Comparative	Designing a training model with emphasis on training methods and practices (33)

URT: Urban rail transit, CDIO: Conceive-design-implement-operate

Table 2. Analytical features of the models reviewed in this research

Models	Classification	
	Staff training process	Effectiveness of staff training
Samsiah, Li and Tang, Dragomiroiu et al.	Particular process of staff training	Not considered specifically
Vichet, Hong-Hua	Changes in the subsidiary steps	Not considered specifically
Chen and Klimoski	Specific model	Attention to the training method, attention to the prerequisites
Yamada and Montague, Ammentorp et al.	Specific model	Attention to the training method
Pourkarimi et al.	Specific model	Attention to the motivation
Ducharme and Feldman, Fardanesh and Karami, Bluestone et al., Parsons and Rollyson	Not considered	Attention to the training method
Balkin and Richebe	Not considered	Attention to the rules of social interactions
Smith	Not considered	Attention to the training method, development of specific strategies , factors related to learners, required fields at the workplace
Sanders	Not considered	Applicability, management supervision
Weaver et al.	Not considered	Team communications, shared subjective models
Mahajan and Nagendra	Not considered	Attention to the training method, attention to the training tool

Key concepts extracted from the researches include:

- Specific model of staff training
- Method for staff training
- Educational effectiveness
- Process for staff training.

a. Specific model of staff training: This theme refers to the models that are specifically designed for staff-training based on certain organizational objectives and conditions

b. Process for staff in-service training: This theme indicates that some functions have been provided for staff training in certain researches that generally correspond to the five listed functions but add some reforming changes in their primary and secondary functions

c. Method for staff in-service training: This theme refers to models that their components include specific methods for staff in-service training interestingly different from the existing models

d. Educational effectiveness: This theme refers to two issues: One is that staff in-service trainings should be in such a way the learners learn them well and the other is that the staff should utilize their taught while working.

Based on research findings, two major themes include the basis and foundation of designing and implementing the staff in-service training models which are as follows:

- Staff in-service training process and functions
- The effectiveness of staff in-service training.

A summary of the analytical features of the models studied in this research and the type of the relationships between them are presented in table 2.

Discussion

The investigations reviewed in this study divided into three groups. In the first group, five researches were placed that solely focused on designing the exquisite process of staff in-service training. The main difference between these researches is that some of them have designed a specific and particular process of staff training appropriate to the type of organization and objectives of the study which are completely different from the well-known and traditional models. Traditional models include educational need assessment, planning, implementing, and evaluation. For example, the model provided by Mat et al. (2011) has three components: Input, process and output. Indeed main functions of staff training in this model includes set outputs, introduced in training methods and implementation of education. These functions are completely different from popular models of staff training process (educational need assessment, planning, implementing and educational evaluation). Researches fell in this field include Samsiah, Li and Dragomiroiu. Some other reviewed investigations in the first group have created changes in the subsidiary steps of the customary models of staff training (Vichet, Hong-Hua). As an example sum Vichet (2007) in a qualitative research has presented a model of staff training that

includes: planning and instructional designing, implementation and evaluation of educational curriculum. He has provided different sub-functions that are distinct from existing patterns.

In the second group four researches clustered. These researches have focused on staff in-service training process and at the same time paid particular attention to the effectiveness of training. Since the effectiveness of staff in-service training is learning and applying the taught, these researches mainly present a special process of in-service training besides focused on factors such as training method, training prerequisites, and creating incentives for effectiveness of the trainings (Chen and Klimoski, Yamada and Montague, Ammentorp et al., Pourkarimi). Majority of the researches reviewed in this study (9) were placed in the third group and have mostly focused on the effectiveness of in-service training (Smith, Balkin and Richebe, Sanders, Weaver et al., Mahajan and Nagendra, Ducharme and Feldman, Fardanesh and Karami, Bluestone et al., Parsons and Rollyson). In general, a review on the models provided on staff in-service training from 2007 to 2013 suggests that the focus of the proposed models is mainly on educational effectiveness. The difference of these studies is in providing different solutions to achieve this aim. These researches have no attention to the process

and functions of education, but in contrast they evaluate multiple and various factors that influence the effectiveness of in-service trainings. Factors such as training methods, applicability, team communications, rules of social interactions, factors related to learners, necessary fields in the work environment, shared subjective models, and training tool. The classification of reviewed investigations has presented in figure 2. As a result, the functions of staff training and educational effectiveness are the most important approaches in the researches entered in this study. The functions of staff training based on the scientific references include training needs assessment, planning, implementation, evaluation, and development of education (6) but organization can develop native functions according to the needs. The educational effectiveness is the effective learning and applying the knowledge during the work processes. The effectiveness of staff training emphasize on topics such as practicability of trainings, management supervision, team communications, shared subjective models, attention to the training method, attention to the training tools, creation of the necessary field in the work environment, creating self-directed trainings, creating spontaneous learning and paying attention to the rules of social interactions.

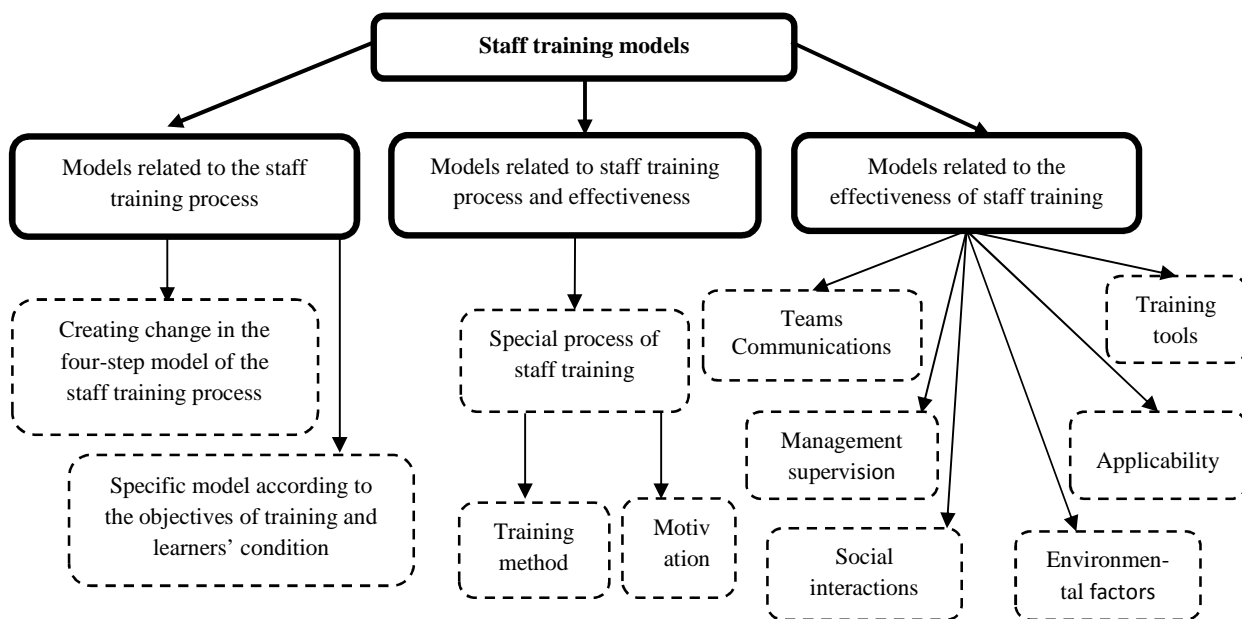


Figure 2. The trend of researches in designing the models of staff training

This study emphasizes on the importance of “Effectiveness approaches” besides the “Native training functions” in designing the nursing staff in-service training models. Designing the “effective and compatible nursing staff in-service training process” provides specific model of training that focused on:

- Customization and adjustment of methods, tools and styles of training implementation
- Increasing the nursing staff motivation to participate actively in organizational trainings so that they learn the presented trainings well and perform them well too.

Acknowledgments

This study is extracted from Ph.D. thesis by the first author in health service administration in the Baqiyatallah University of Medical Sciences, Tehran, Iran.

Conflict of interest

The authors declare no conflict of interest.

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