

# The Lived Experience of Nurses on the Role of Continuing Education Programs in Promoting Their Knowledge, Skills, and Attitude Toward Non-Communicable Diseases

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## Research Article

**Keywords:** Continuing professional education, Lived experience, Nurses, Qualitative study

**Posted Date:** May 11th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-431307/v1>

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# Abstract

## Background

Continuing professional education is essential for nurses to provide quality patient care and upgrade their professional skills and competence. The need for continuing medical education (CME) has become more apparent in the face of advances in medical science, the ever-changing healthcare system, and the important role nurses play in improving health care. It is therefore imperative to explore nurses' experience of CME courses and the extent to which such programs are effective. The present qualitative study aimed to assess the lived experience of nurses on the effect of CE programs in promoting their knowledge, skill, and attitude toward non-communicable diseases.

## Methods

This qualitative study was conducted in 2019-2020 at various hospitals affiliated to Shiraz University of Medical Sciences (Shiraz, Iran). The target population was nurses actively working in the chronic wards of these hospitals. The participants were selected using maximum variation sampling, including nursing managers, education and clinical supervisors, and staff nurses. Data were collected through individual, face-to-face, semi-structured interviews and analysed using the conventional content analysis method. Data trustworthiness was assessed according to the criteria proposed by Guba and Lincoln.

## Results

Analysis of the interview data resulted in 230 primary codes based on which 15 subcategories, 6 categories, and 3 themes were identified. The extracted themes were training to improve knowledge and attitude, training to improve professional skills, and the need for effective training programs. The associated categories were training to improve clinical knowledge, training to improve professional attitude, training in clinical skills related to holistic and person-centred care, communication skills training, incorporate the fundamentals of effective training, and recognize common challenges and barriers to effective training.

## Conclusion

Professional competence and performance of nurses can be improved through intrinsic motivation stimulation, planning and implementation of training programs based on professional needs, and effective assessment of the teaching/learning process.

## Background

The deployment of skilled health care personnel is a major contributing factor affecting the performance of healthcare systems worldwide. Recent marked progress in the effectiveness and efficiency of healthcare systems has been directly attributed to proper education and regular training of healthcare professionals, through which staff acquire up-to-date knowledge and skills and adopt a positive attitude

toward improving health care duties [1][2][3]Advances in medical sciences and subsequent technological innovations have encouraged health care professionals to continuously update their knowledge and clinical skills[4]. Nurses,as important members of medical teams,should also receive continuing medical education (CME) to keep pace with advances in therapeutic processes to efficiently contribute to patient care(3). Nowadays, CME courses are considered as an effective method toward sustained learning and improving the attitude of health care professionals. It has been reported that sustained learning will encourage health care professionals to provide optimal care and contributes to maintaining sustainable performance[5].A previous review study on the concept of CME courseshas indicated that in-service training of health care personnel enhances their knowledge, skills, motivation, and attitude which in turn positively affects their self-esteem, performance, and job quality[6].

The responsibility of health care professionals is not limited to prolonging life, but also improving patients'comfort, well-being, and quality of life[7]. Providing quality health care in combination with the fulfilment of patients' psychological, social, and spiritual needs positively affects their acceptance of the illness, their self-esteem, and will ultimately increase life expectancy[8]. This has become more important since non-communicable diseasesarethe leading causes of death in the world[9]. For instance, cardiovascular and chronic lung diseases, stroke, and type 2 diabetes are among the top 6 leading causes of death in the Eastern Mediterranean region and Iran. The prevalence of these diseases in Iran is exacerbated by urbanization, changesin lifestyle due to industrialization, changes in age composition, and population ageing[10][11][12].

Considering the multi-dimensional nature of health education, a qualitative research approachis the best method tostudythe livedexperience of health care professionals. In contrast with a quantitative method, it allows a detailed description ofthe experiences of those involved in patient care based on their values, culture, attitudes, beliefs, and social interactions [13][14][15]. The present qualitative study aimed to assess the lived experience of nurses on the effect of CME programs in promoting their knowledge, skills, and attitude toward non-communicable diseases.

## Methods

### Study design and participants

The present qualitative study was conducted in 2019-2020 at various hospitals affiliated to Shiraz University of Medical Sciences (Shiraz, Iran). The target population was nurses actively workingin internal wards of the above-mentioned hospitals.The purposive sampling method was used to recruit participants and the sampling continued until data saturation, such that no new information could be extracted[1][2]. The participants were selected using maximum variation sampling in terms of sex, education, rank, and years of work experience. The inclusion criteria were at least a bachelor's degree in nursing,  $\geq 2$  years of work experience, mental and physical ability to participate in an interview, and willingness to take part in the study. The exclusion criteriawere unwillingness to participate in the study or refrain from responding to questions. Accordingly, a total of 8 individuals includinga chief nurse ( $n=1$ ), education supervisor

(n=2), clinical supervisor (n=1), head nurse (n=1), and staff nurse (n=3) were recruited. Demographic characteristics of the participants are presented in Table 1.

## **Data Collection**

A total of 8 individual, face-to-face, semi-structured interviews were conducted using an interview guide (Table 2). The interviews were held at a pre-arranged time in a private and quiet location at the workplace of the participants. Audio recordings of the interviews were made with the prior permission of the participants. Each interview started with a set of open questions, e.g., "What is your impression of the continuing education course that you followed?" followed by detailed questions to extract extra information and for clarification.

## **Data analysis**

The conventional content analysis method was used to identify themes from the interview data. Content analysis of the data was performed using the 5 steps proposed by Graneheim and Lundman. Initially, after each interview, the audio recording was transcribed verbatim and read several times to immerse in the data and to obtain a thorough understanding of its content. Then, words, sentences, or paragraphs containing important information were identified and classified as semantic units from which primary codes were extracted. These codes were then compared, merged, and grouped in terms of similarities and differences to identify subcategories. Categories were similarly extracted from the subcategories, from which the themes were subsequently identified[3][4]. Data organization and analysis were performed using MAXQDA 2007 software.

## **Rigor**

Various criteria have been proposed to determine trustworthiness in qualitative research. However, the most comprehensive set of criteria is proposed by Guba and Lincoln; namely credibility, dependability, confirmability, and transferability[5][6]. The credibility criterion was fulfilled through the prolonged engagement of the research team with the study, verifying transcriptions to conform to the statements made by participants, spending sufficient time to build rapport with the participants to obtain accurate information, and confirming the information through member checking. Dependability criterion was fulfilled through peer debriefing and review of the data analysis process by the research supervisor. Confirmability criterion was fulfilled through verbatim transcription of audio recordings and reconfirming transcripts, semantic units, and primary codes with the participants. Transferability criterion was fulfilled through purposive sampling of the participants with maximum variation.

## **Ethics approval and consent to participate**

To comply with ethical considerations, research permission was obtained from the Ethics Committee of Shiraz University of Medical Sciences. (Ethics no: IR.SUMS.REC.1399.548) Also, by providing participants with information about the objectives of the research and obtaining permission to record audio, they were

assured that the information gathered would remain confidential. They were also told that they could leave the study whenever they wanted.

## Results

Analysis of the interview data resulted in 230 primary codes based on which 15 subcategories, 6 categories, and 3 themes were identified (Table 3). **Training to improve knowledge and attitude**

The categories associated with this theme were training to improve both the clinical knowledge and professional attitude of nurses. Training to improve clinical knowledge was strongly recommended as a prerequisite for effective nursing care and was directly associated with faster recovery of patients. The participants indicated that improving clinical knowledge and the competence to recognize minor medical problems should be the key items in such training. Furthermore, they stated that the main requirements for effective nursing care are gaining up-to-date knowledge, application of evidence-based nursing practice according to professional standards, and anticipation of unforeseen situations that require immediate resolution. Two participants stated:

*"Patients expect to receive care according to professional standards of nursing practice and require care to be conducted correctly and appropriately."* [P1]

*"Anticipating a patient's reaction to minor medical issues is inherent to nursing care, which requires knowledge and skill. For instance, I immediately suspect low levels of blood glucose as soon as a diabetic patient becomes aggressive."* [P2]

Training to improve the professional attitude of nurses was related to the observance of the Patients' Rights Charter, a humane attitude toward patients, the importance of time management in providing quality nursing care, and prevention of harm to patients. The underlying philosophy of such training should be based on the spiritual narrative "Whoever saves a life, it is considered as if he saved an entire world". A participant stated:

*"It is important to continuously train nurses, particularly novice nurses, in respecting the dignity of patients and implementing the Patients' Rights Charter. Essential in nursing practice is to treat patients with respect, respect their rights and preferences, request their permission before conducting medical procedures, and respect their privacy and confidentiality."* [P4]

### 1- Training to improve professional skills

The categories associated with this theme were training in clinical and communication skills. According to the participants, optimal care can be achieved through effective nurse-patient communication. It is therefore essential that nursing care is based on mutual trust and the use of verbal and nonverbal communication techniques. In order to cover various facets of patient needs, holistic and person-centred care includes aspects such as physical and mental health needs, spiritual care needs, facilitating the needs of dying patients, follow-up care, and guidance of patients toward recovery. A participant stated:

*"Patients suffering from chronic diseases experience physical, mental, spiritual, and financial issues on top of having to deal with discouraging news about their illness and family frustration. They are constantly anxious about the course of their illness and face the fear of death. Mere fulfilment of their physical needs without addressing mental care needs may negatively affect their recovery process and lead to severe depression. These patients should receive comprehensive care."* [P5]

## **2- Need for effective training programs**

Categories associated with this theme were the incorporation of training fundamentals for the effective transfer of knowledge as well as recognition of common challenges and barriers to effective training. An effective training course requires a well-thought-out plan to create a high-quality program, proper implementation, and effective evaluation of the teaching/learning process. The first step in formulating a training program is to identify the specific needs of the target population. A participant stated:

*"There is a huge difference between developing a training program for adults or for children. The attention of adults is attracted when the program addresses their questions and covers their immediate needs. In fact, current training evaluation forms are simply standard surveys and do not assess the need fulfilment of the participants."* [P7]

The participants emphasized the importance of proper implementation of a training program. Learners have a higher motivation to engage in and complete the course if the instructor presents up-to-date information, uses interactive learning techniques, and initiates group discussions. A participant stated:

*"I only have good memories of those training courses that were lively, interactive, and included Q&A sessions or discussion groups. I always remember these instructors and what they taught me."* [P1]

The participants indicated the importance of evaluating a training course to assess its effectiveness. Feedback from learners is essential to determine the effectiveness of the course, the competence of the instructor, and the extent of knowledge or skill acquisition by the participants. Two participants stated:

*"Post-training evaluation is an essential part of any training course. It is important not only for the organizers to evaluate the program, but also for us to gauge how much we have learned."* [P6]

*"What helps me to remember what I have learned from a training program are Q&A sessions, group discussions, and most importantly the feedback evaluation form."* [P5]

Timing was a typical obstacle to effective training, especially when training sessions coincided with participants' professional/personal duties. The effect was amplified by instructors teaching outside their area of expertise, presenting outdated topics through traditional teaching methods, and poor facilities. These in turn led to a decrease in motivation to actively participate and learn. In the worst-case scenario, a course was attended for the sole purpose of obtaining the required certificate or fulfil compulsory attendance. A participant stated:

*"Nothing is worse than attending an evening training course after a long day at work. It is really tiresome to have to attend long lectures in a setting that lacks ventilation and proper facilities."* [P8]

## Discussion

Nurses play a critical role in the healthcare system. Their clinical competence is known to be directly related to continuing professional development. Hence, we aimed to assess factors that influence the effectiveness of continuing education in improving the knowledge, skills, and attitude of nurses caring for patients with non-communicable diseases. Analysis of the interview data resulted in the identification of three themes, namely training to improve knowledge and attitude, training to improve professional skills, and the need for effective training programs.

Improving knowledge is one of the key success factors in nursing care. The participants were of the opinion that providing evidence-based nursing care is indicative of improved nursing knowledge. In two different studies, Chong et al. and Tame reported that nurses' eagerness to learn more, upgrade their knowledge, and improve professional skills through CE courses[1][2]. In another study, McDiarmid stated that participants in their CE course were highly motivated to increase their professional knowledge in order to improve patient care[3]. Keshmiri et al. reported improved quality of nursing care by those who participated in their special CE course based on the competency model[4][25].

Coban and colleagues quoted a definition of attitude as a relatively stable organization of beliefs, feelings, and tendencies toward a thing or a person - an attitude object [5][26]. The attitudes of nurses toward their work, profession, organization, and administration will predict the behaviours that they will show in these fields. The administrators of nursing services can contribute to both the nursing service and the development of its staff by evaluating their attitudes and taking actions according to the results[6]. Our participants indicated that training courses emphasizing the importance of time management as well as respect for patient dignity would ultimately improve the attitude of nurses. Gardiner et al. believe that excessive focus on providing care to patients might distract nurses from managing their time, which in turn negatively affects patients[7]. Maintaining discipline in the workplace is essential to the nursing profession. Nurses should continuously provide optimal care, truthfully respond to patients and their family caregivers, maintain patient confidentiality, and respect the Patients' Rights Charter[8].

The participants described improving professional skills (e.g., clinical skills) as an important aspect of optimal nursing care. Clinical skills encompass all aspects of care such as holistic care (physical, psychological, and also the needs of dying patients), management of the physical environment, and provision of guidance to hospitalized patients from admission to discharge. Dewar et al. described a nurse as a person that pays attention to all care needs of patients, even minor issues and routine care[9]. Boswell et al. also emphasized the spiritual care needs of patients [10]. In a previous study, Watson suggests that proper nurse-patient communication to gain the patients' trust is an integral part of

nursing knowledge and skills[11]. In other words, nurses should present themselves in a manner that patients gain confidence in their knowledge and skills.

The effectiveness of training is judged on the basis of the knowledge acquired by the learners and the extent to which the developed skills practically benefit the organization concerned. It is therefore essential to observe the fundamentals of effective training which includes planning and developing an effective program, its proper implementation, and effective evaluation of teaching/learning process. It is also required to recognize challenges and barriers to effective training in a timely manner and overcome these issues as the training progresses. In line with our findings, Islamian et al. stated that assessment of the effectiveness of training programs is not properly conducted[12]. Instructors of training courses are the main contributors to the effectiveness of training. Based on Edgar Dale's learning pyramid, the more objective and first-hand the direct learning experience is, the greater the learning curve and the longer it lasts[13]. In addition to the importance of good content, the use of teaching techniques that increase participation contributes to the effectiveness of training. In a study conducted in Australia on educational needs, Booth and Lawrence highlighted the importance of selecting a training method based on comprehensiveness and active learning principles[14]. Davis et al. reported the superiority of interactive courses that increase participant engagement (e.g., workshops, group discussions, and even participating in clinical rounds) over lecture-based refresher courses[15]. In two other studies, White et al. and Hofer et al. reported positive results from workshop-based retraining courses that were based on problem-based learning method[16]. In line with our results, Jalali showed that 22% of their study participants stated the importance of presenting up-to-date information during CE courses[17]. Islamian et al. reported that almost all of their study participants stressed the importance of the use of experienced instructors for a successful instructor-led learning experience. They also stated an inherent conflict between inappropriate teaching methods and effective learning. Moreover, they concluded that typical challenges associated with teaching and learning processes are inappropriate methods of knowledge transfer, the lack of motivated instructors, and unfamiliarity with the latest teaching methods. The findings of a study by Farmani and Zaghimi indicated a moderate match between the content of CE courses and the professional needs of participants[18]. In another study, Grisetti and Jacono stated that CE programs should be developed in accordance with the needs of the target population, incorporate the fundamentals of effective training, and should always include effective evaluation of learners. They concluded that such courses are only effective if the needs and expectations of learners are fulfilled[19]. Similarly, Chong et al. stated that training programs should at least meet the minimum educational and professional needs of nurses[20].

In line with a study by Davis et al.[21], our participants described the evaluation process as inappropriate, both in terms of effectiveness and allocation of sufficient time. Quoting the findings of Nolan [22], Richards and Potgieter reported that stimulation of individual motivation is the most significant contributing factor for participation in continuing professional development. In addition, implementation of change is smoother when employees are highly motivated and appropriate environmental infrastructure is supportive of the change [23], otherwise, the effectiveness of CE courses could be negatively affected[24].



Considering the potential difficulties in educating employees, it is essential to address challenges and overcome barriers associated with effective CE. In a previous study, Zang and Petrini reported that time constraints due to job or family responsibilities are the main obstacles for nurses to participate in CE courses[25]. Another study also reported that job responsibilities and subsequent lack of time were the main obstacles to participation and resulted in the importance of CE being downplayed[26]. This issue is highly applicable to physicians who spend excessive time in the clinic and do not have the opportunity to follow multiple CE courses. In this case, practical solutions such as self-assessment methods could contribute to maintaining professional competence. In line with our findings, Mohammadi and Dadkhah reported that 55% of nurses appraised the suitability of educational facilities as moderate [27].

### **Study limitations**

The main limitation of this study was the sole participation of actively employed nurses at hospitals in Shiraz. Therefore, our findings cannot be generalized to other populations or hospitals in Iran. In addition, the study did not include distance learning courses and only focused on in-person CE sessions. It is recommended that further studies are conducted in other teaching hospitals across the country to include the lived experiences of other nurses in the development of more effective CE courses.

### **Application of research findings**

The findings of the present study can be used to re-evaluate nursing education programs and CE courses in terms of content, training methods, and evaluation of learners. Our findings will also help health policymakers to improve the quality of nursing education and promote effective CE programs.

## **Conclusion**

Nurses spend most of their time caring for patients and thus play an important role in the healthcare system. Considering the high prevalence of death due to non-communicable diseases, the lived experience of nurses on the effect of continuing education is valuable. Based on the experience of nurses caring for patients with non-communicable diseases, professional competence and performance of such nurses can be improved through intrinsic motivation stimulation, planning and implementation of training programs based on professional needs, and effective assessment of the teaching/learning process. Considering the challenges associated with in-person training due to shortage of time and more recently the added time implications due to the COVID-19 pandemic, further studies should focus on the effectiveness of remote teaching methods.

## **Declarations**

### **Ethics approval and consent to participate**

This study was conducted in accordance with the World Medical Association's Declaration of Helsinki. To comply with ethical considerations, research permission was obtained from the Ethics Committee of

Shiraz University of Medical Sciences (ethics code: IR.SUMS.REC.1399.548). Also, by providing participants with information about the objectives of the research and obtaining permission to record audio, they also were assured that the information gathered would remain confidential; then **"informed consent was provided by all the participants "** They were also told that they could leave the study whenever they wanted.

## **Funding**

The present article was extracted from a thesis written by Maryam Zaree .The design and implementation of the project was financially supported by Shiraz University of Medical Sciences, Shiraz, Iran (Grant No. 21423-01-01-98).

## **Authors' contributions**

MZ participated in the design of the study, acquisition, analysis, interpretation of data, manuscript drafting, and final approval of the version to be published.

LB supervised the study and participated in the design of the study, analysis, and interpretation of data, and proofreading of the manuscript.

SM was involved in the design of the study and submission of the manuscript. All authors have read and approved the final manuscript.

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## **Consent for publication**

Not applicable

**Availability of data and materials:** The confidentiality of the identity of the participants. Data are however available from the authors upon reasonable datasets generated and analysed during the current study are not publicly available due to request.The datasets generated and/or analysed during the current study are available in the Dr L.Bazrafkan repository.

## **Competing interests**

The authors declare that they have no conflict of interest.

## Acknowledgement

The authors express their gratitude to the university authorities for granting permission to access participants databases and to conduct the study. We would like to thank the Deputy of Research at Shiraz University of Medical Sciences for financial support. We also would like to express our gratitude to hospital authorities for their support and the participants for their active participation in the study.

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## Tables

**Table 1:** Demographic characteristics of the participants.

Participant	Sex	Age (years)	Marital status	Education level	Function	Work experience (years)
P1	Female	44	Married	BSc	Chief nurse	15
P2	Female	48	Single	MSc	Education supervisor	16
P3	Female	39	Married	PhD	Education supervisor	12
P4	Male	31	Married	MSc	Clinical supervisor	7
P5	Female	42	Married	MSc	Head nurse	15
P6	Male	35	Married	BSc	Staff nurse	6
P7	Female	38	Single	BSc	Staff nurse	12
P8	Female	45	Married	BSc	Staff nurse	20

**Table 2:** Semi-structured interview guide.

Interview guide	
1	Which CME courses have you attended so far? Which topics were covered? How did you experience the training courses?
2	Please give an example of a CME course that has improved your knowledge, skills, and attitude (e.g., cardiovascular disease, cerebral palsy, trauma, addiction, etc.)
3	Which CME course was most effective? Why?
4	Considering the high prevalence of non-communicable diseases, what are the main challenges in providing nursing care?
5	Based on your experience, what needs to be done to make a CME course more effective?

**Table 3:** Extracted themes, categories, and sub-categories from the interview data.

Themes	Categories	Subcategories
Training to improve knowledge and attitude	Training to improve clinical knowledge	Increase specialized knowledge
		Enhance competence to recognize minor medical problems
	Training to improve professional attitude	Observance of the Patients' Rights Charter and humane attitude toward patients
		Importance of time management in providing quality nursing care and prevention of harm to patients
Training to improve professional skills	Training in clinical skills related to holistic and person-centred care	Training in physical health needs of patients
		Training in mental health needs of patients
		Training in spiritual care needs of patients
		Training to meet the needs of dying patients
		Training in follow-up care and guidance of patients
	Communication skills training	Training in verbal communication skills
		Training in nonverbal communication skills
Need for effective training programs	Incorporate the fundamentals of effective training	Plan and develop effective programs
		Proper implementation
		Effective evaluation of teaching/learning process
	Recognize common challenges and barriers to effective training	Assess and overcome obstacles during training