

Original article

Preferred Learning Styles of Nurses in In-Service Training Courses in Tabriz University of Medical Sciences

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SUMMARY

Generally, progress, productivity and success of any organization depends on the skills and knowledge of their manpower. Thus, better and more accurate training programs in organizations will lead to their growth and efficiency will be eventually achieved. Due to the many advances in the field of medicine, nurses are the backbone of activities in organizations of medical sciences and patient's affairs. For this purpose, in-service training courses for employees are the most important courses in nursing. This study was conducted at the University of Medical Sciences (Tabriz-Iran) aiming to determine the preferred learning styles of nurses in in-service training courses. In this cross-sectional study, all nurses working in medical and educational centers in a university in the North West of Iran were randomly selected. To collect data, a two-part questionnaire of Kolb's demographic and social information was used. Data was analyzed by using descriptive and analytical statistics SPSS version 17 software. A total of 470 nurses with an average age of 36.46 ± 5.77 were studied. There was a significant correlation between preferred learning styles of nurses with nursing position, employment status, and income level. There was no a significant statistical relationship between the preferred learning style of nurses with age, work experience and experience in the center. The present study shows that the highest percentage of Kolb's learning style is related to the preferential converging learning style (57.8%). This study aimed to determine the preferred learning styles of nurse's in-service training courses in Tabriz University of Medical Sciences. The results of the study showed that converging and assimilating styles were the preferred learning ones among the majority of nurses; these styles are effective and interpreted according to their profession requiring a lot of

information and knowledge. Due to the dominance of converging learning style among nurses, it is recommended to use appropriate teaching methods tailored to the style including the use of diagrams, presentations, lectures and self-learning with enjoyable materials.

Key words: learning style, nursing, training

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INTRODUCTION

Most of human behavior takes place through learning. At every stage of life, we need to learn things without which life is not possible for us. Global changes and increasing progresses in all fields motivate people to learn, thus humans unconsciously engage in learning and teaching activities. As a result, it is essential to pay particular attention to individual's learning (1). People learn differently in different situations and under the influence of various factors (2, 3). To identify the factors affecting learning is considered to be an important topic for educational researchers (4). One of the most effective factors in learning is learning styles which include beliefs, preferences and behaviors that people learn to apply in a specific situation in order to contribute to their own learning (2). Learning is a multi-step process in which concepts are mastered and the process involves goals, input, output and resources (5). According to Kolb, learners perceive and process information in a continuum from concrete experience, abstract conceptualization and then analyze them by reflective observation and active experimentation (6, 7). Researchers believe that each learner has a preferred style to understand, summarize, classify and store information that is identifiable. In fact, learning style refers to how the learner learns (8). These styles are described and analyzed in different ways. Consistency between the teaching approaches of teachers to student's learning styles can increase educational progress of learners as well as improve their incentives (9). The knowledge about learning and teaching styles can be used to organize learning environment, how teachers and students interact and how to learn and teach materials (10). Nowadays, progress, survival and success of any organization depend on the skills and general and specialized knowledge of their manpower. Thus, better and more accurate training programs in organizations will lead to organizational growth and efficiency will be eventually achieved. Due to many advances in the field of medicine, nurses are the backbone of activities in organizations of medical sciences and patient's affairs (11). Owing to many advances in medical sciences, education and improvement of human resources are a necessity. In the meantime, in-service training courses of employees are one of the most important courses in nursing which are organized by the University of Medical Sciences. In-service training course in nursing encompasses all the necessary trainings for professional purposes to improve the quality and enhance the performance of nurses (12). Several studies which have been done on the effectiveness of in-service training demonstrate that these cour-

ses are not very effective from the perspective of nurses (13). More studies on the effectiveness of in-service training are focused on the effectiveness as well as the satisfaction of nurses from these training courses (13, 14). Most participants in these courses have stated that learning points for achieving occupational privileges was their main motivation to participate in the classes (15, 16). It seems now that the authorities have to take a better plan to change the perspective of participants regarding taking part in these training courses so that knowledge acquisition was the main motive of these participants, whereas other factors were of minor importance (12). It seems that the involvement of trainees in training can be one of the proposed solutions (17). Increased knowledge about the structure of learning shows that teacher-centered and traditional teaching styles cannot result in maximum learning in students, because in the theory of constructivism, the key to learning is learners' active participation which is possible through the use of different teaching styles (18). In-service training teachers can adapt their teaching styles to learning styles preferred by nurses. Most studies in the field of learning styles are related to nursing students (19, 20); however, there is a shortage of research concerning determination of learning and teaching styles in nurses. On the other hand, it seems that individual's learning styles change over time (9). As these people enter the workplace, they find some new needs and preoccupations which may affect the way they learn and also their preferred learning style. They also believe that in-service training programs should be combined with other conventional and distance trainings and also preferred that the educational content should provide the practical and clinical skills of nurses (17). With regard to the effectiveness of in-service training courses for nurses, this study was conducted to determine the preferred learning styles in in-service training courses in Tabriz University of Medical Sciences.

MATERIAL AND METHODS

This was a descriptive-cross sectional study. The study population comprised 470 nurses working in teaching hospitals affiliated to Tabriz University of Medical Sciences who were selected randomly relative to the number of nurses per center. Inclusion criteria were nurses who had one year work experience and enjoyed the perfect physical health; nurse trainees were excluded from the study. The research tool was a two-part questionnaire. The first section of the questionnaire was related to demographic information such as gender, age,

marital status, religion, organizational position, income level, education level, place of residence, number of children, work experience, status employment and work experience in the center and the second section was Kolb's learning style inventory based on the use of the five senses. This style consists of 12 multiple-choice questions: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC) and active experimentation (AE). Thus, four total scores for the four learning styles were obtained, which indicates four modes of learning: the first for concrete experience learning style, the second for reflective observation of learning style, the third for abstract conceptualization learning style and the fourth for active experimentation learning style. Two scores are obtained by subtracting abstract conceptualization from concrete experience and active experimentation from observation (reflexively). These two scores are placed on the X, Y coordinates (based on the negative and positive scores obtained). CE and AC represent the vertical dimension and RO and AE represent the horizontal dimension of. These create four modes or styles of learning (21). After obtaining permission from the ethics committee and the deputy of Tabriz University of Medical Sciences, coordination with supervisors from training centers, the researcher acquired sufficient information from time of holding in-service classes and list of eligible coworkers for the class in accordance with the criteria for inclusion and selected research units using simple random sampling (by lottery). The researcher was present in the hospital on time prior to the class and after explaining the purpose of the research, description of voluntarily participation in the research, confidentiality of participant's information and obtaining informed consent form, he gave questionnaires to participants to complete. The information was given to the subjects in conjunction with the completion of the questionnaire and how to answer it; they also noted that participation in the study is voluntary and they are free to participate or withdraw from the study. To obtain the scientific credibility of the tool, the method of face validity and content was used. First, the standard Backward-Forward questionnaires (Kolb's learning style questionnaire, teaching style questionnaire, preferred type teacher's questionnaire) were translated from English to Persian first. The original version of the tool taken from Richard M. Rudowski's Thesis in 1996 was translated by two independent translators simultaneously from English to Farsi, and then translated by two trans-

lators independent of the first translators in English. The Persian questionnaire was set up by translating them together after discussing the possible differences and adapting the original and translated version from Persian into English. For obtaining face validity, a four-part questionnaire was distributed to ten faculty members of Tabriz University of medical sciences and Tabriz University. After collecting comments and making necessary amendments, a final questionnaire was developed. This inventory shows information about learning strategies, teaching methods and media appropriate to these styles. To achieve the content validity, four-part questionnaire was given to ten professors of the University of Tabriz, University of Medical Sciences and their corrective comments were applied. To determine the reliability by test-retest and correlations, 20 nurses answered the questions of the Persian version of all three tools twice at an interval of one week. In all phases of the study, variables were collected and recorded. The data were analyzed using SPSS 17 software and descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (ANOVA, T-test).

RESULTS

A total of 470 nurses with an average age of 36.46 ± 5.77 were studied. Most participants were female (72.6 percent) and married (74.7 percent) and had a bachelor's degree (85 percent) and average income level (60.3 percent) as well as most nurses hired by contract (46.8 percent). At the time of performing the study, they had an average total work experience and work experience in the center in duration of 12.27 ± 5.63 years and 6.69 ± 4.27 years, respectively (Table 1). The results of the study showed that preferred learning styles were determined: feeling (45.7%), thinking (19.7%), doing (18.24%) and watching (16.36%). The two converging and assimilating styles were thus the dominant learning ones. There was a significant correlation between preferred learning style of nurses with the nursing position, employment status, and income level (Table 1). There was no significant statistical relationship between the preferred learning style of nurses with age, work experience and experience in the center (Table 2). The results show that the highest frequency of Kolb's learning style is related to the convergent preferential learning style (Table 3, Figure 1).

Table 1. Comparison learning style preferred in terms of individual and social variables of participating nurses in in-service training courses at Tabriz University of Medical Sciences

Variable		Mean (SD)	Statistical indicators
Gender	Male	91.92(9.33)	t = 0.004 df = 433 P = 0.99
	Female	91.91(6.62)	
Religion	Shia	91.86(7.43)	t = 0.83 df = 434 P = 0.40
	Sunni	93.43(7.03)	
Marital status	Single	92.11(5.90)	F = 0.41 df = 2 P = 0.66
	Married	91.88(7.90)	
	Divorced	95.66(6.11)	
Income level	Low	91.37(6.99)	F = 4.38 Df = 2 P = 0.01
	Average	92.28(7.37)	
	High	97.83(12.44)	
Number of children	One	92.09(6.58)	F = 0.77 df = 3 P = 0.50
	Two	91.52(7.27)	
	Three	93.15(13.06)	
	Four	86.66(8.62)	
Employment status	Official	93.26(7.72)	F = 4.11 d = 3 P = 0.007
	Contractual and corporate	91.33(7.34)	
	Training	91.33(7.34)	
Address	Town	92.20(7.30)	t = 1.31 df = 429 P = 0.19
	City	90.82(7.77)	
Organizational position	Nurse	91.62(7.01)	t = -4.05 df = 420 P = 0.000
	Matron (Senior Nursing Officer)	96.17(8.45)	

Table 2. The relationship between learning style preferred by nurses and individual and social variables for participating nurses in in-service training courses at Tabriz University of Medical Sciences

Quantitative variables	Correlation coefficient	Significance probability
Age (year)	-0.01	0.71%
Work experience	-0.01	84%
Work experience in the center	0.08	0.09

Table 3. Distribution of nurses' preferential learning styles responses on in-service training courses of Tabriz University of Medical Sciences (n = 470)

Variable	Convergent	Absorb	Divergent	Adapted
Kolb's learning style score	Number (percent)	Number (percent)	Number (percent)	Number (percent)
	272(57.8)	61(12.9)	28(0.6)	58(12.3)

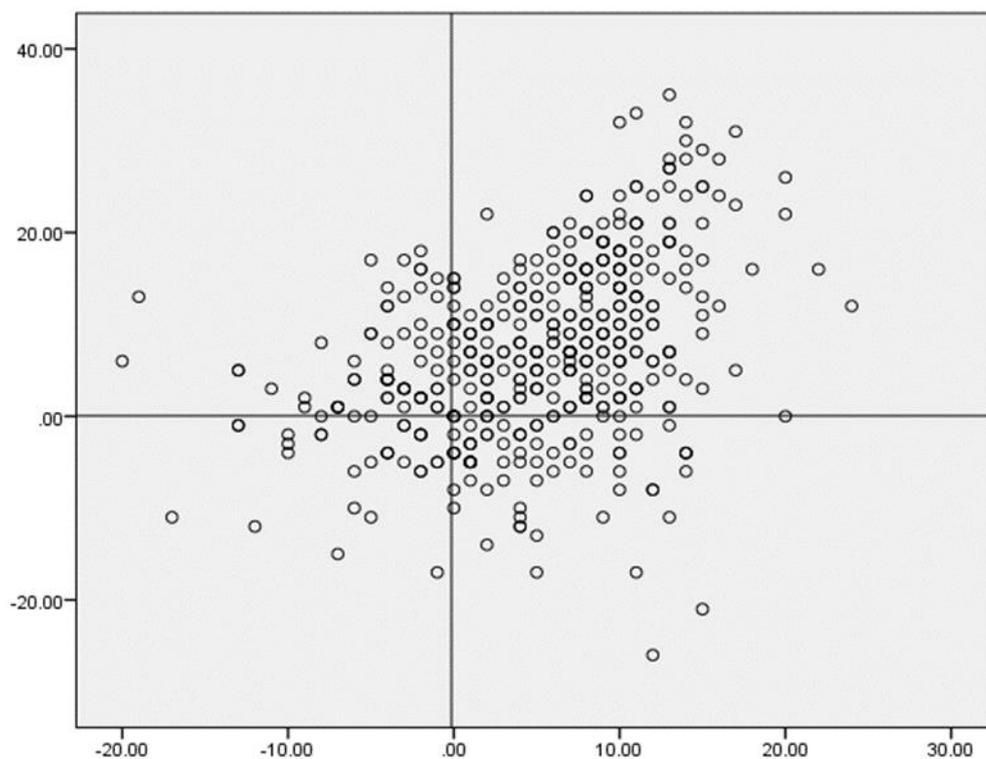


Figure 1. Distribution of nurses' preferential learning styles responses on in-service training courses of Tabriz University of Medical Sciences

DISCUSSION

This study aimed to determine the preferred learning styles of nurse's in-service training courses in Tabriz University of Medical Sciences. The results of the study showed that converging and assimilating styles were the preferred learning ones among the majority of nurses; these styles are effective and are interpreted according to their profession requiring a lot of information and knowledge. The results are consistent with the results of

Tha and Khin (22) in the sense that people with assimilating style are less focused on individuals and more on ideas and abstract concepts. In general, people have a high ability to understand large amounts of data and combine them logically in creating theoretical models. The information will be helpful if teachers use methods such as lectures and theoretical tutorial materials (23). If learners' learning situations are matched with their preferred learning styles, their learning rate is likely to increase a lot more than when learning methods are to

be ignored (24). The results of this study are consistent with the results obtained by Li YS et al. (24) and Rakoozi and Mooni (25). In addition, Linares in their study (26) showed that the majority of learners use the converging learning style. Although Kolb believes that assimilating style needs to be the dominant learning one in medical science (21), they claim that the majority of nurses are more likely to have divergent learning styles (27). The results also are consistent with a study in which divergent style has been reported as a prevailing style of learning in nursing students (28). The results of the studies by Vizehfar et al. (29), Rassool et al. (30) showed that divergent style is also the dominant learning style. The reasons for these differences can be attributed to different cultures and styles of learning and teaching in schools, universities and all affective factors on learning style including thinking, motivation, environment, family factors, community, school quality and trainee's quality. The study also showed that there was a significant correlation between preferred learning style of nurses and organizational positions, employment status, income level. According to organization theory by Stephen Robbins (31) on the type of employment relationship with job satisfaction, this relationship may be linked to sensitivity and maintenance of a more relaxed position of nurses with employment status and income level. There was also a significant correlation between nursing preferred learning style, age, work experience and experience in the center. According to the researcher of the study, no studies have been carried out in Iran regarding learning and teaching styles for the nurses, and all studies on this topic have been done by nursing students. It seems that every educational content requires a certain style of learning and teaching. Given that the nursing profession is a communicative, scientific and people-centered profession, in-service training instructors are re-

quired to use a variety of instructional strategies that will strengthen and increase their throughput and respond to educational needs of learners in the workplace as well. Given the dominance of converging learning style among nurses, it is recommended to use the teaching methods appropriate to the style such as diagrams, presentation, lectures and self-learning materials.

The limitation of the present study was that the study was conducted only among nurses in hospitals in Tabriz, which might have limited the results. Thus, the results of this study may not be generalized for nurses outside this range. It is recommended that more researches with larger sample size be carried out in order to obtain more reliable findings.

CONCLUSION

Due to the dominance of converging learning style among nurses, it is recommended to use the appropriate teaching methods tailored to the style including the use of diagrams, presentations, lectures, and self-learning with enjoyable materials.

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Omiljeni tipovi učenja medicinskih sestara tokom kurseva stručnog usavršavanja na Univerzitetu medicinskih nauka u Tabrizu

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SAŽETAK

Progres, produktivnost i uspeh bilo koje organizacije zavisi od veština i znanja njenih radnika. Iz tog razloga, bolji i precizniji programi obuke u organizacijama dovešće do razvoja ovih institucija, a ujedno će se postići i efikasnost u radu. Zbog mnogih dostignuća iz oblasti medicine, medicinske sestre imaju značajnu ulogu u obrazovnim i zdravstvenim institucijama. Stoga su kursevi stručnog usavršavanja medicinskih sestara ujedno i najvažniji kursevi u njihovoj edukaciji. Ova studija je sprovedena na Univerzitetu medicinskih nauka u Tabrizu, u Iranu, sa ciljem određivanja omiljenih tipova učenja medicinskih sestara tokom kurseva stručnog usavršavanja. U ovoj studiji preseka, sve medicinske sestre koje rade u medicinskim i obrazovnim centrima, koji pripadaju Univerzitetu u severozapadnom Iranu, birane su metodom slučajnog uzorka. Za prikupljanje demografskih i socijalnih podataka korišćen je Kolbov upitnik koji se sastojao iz dva dela. Podaci su analizirani primenom deskriptivne i analitičke statistike u okviru SPSS programa (verzija 17). Ukupno je analizirano 470 sestara čiji je prosek godina iznosio $36,46 \pm 5,77$ godina. Utvrđena je značajna korelacija između omiljenih tipova učenja medicinskih sestara i njihove pozicije na poslu, statusa radnog odnosa i prihoda. Nije uočena statistički značajna veza između omiljenog tipa učenja medicinskih sestara i godina starosti, ukupnog radnog iskustva i radnog iskustva u određenom centru. Ova studija je pokazala da je u najvećem procentu Kolbov tip učenja usmeren na konvergentno učenje (57,8%). Cilj ove studije bio je određivanje omiljenog tipa učenja medicinskih sestara tokom stručne obuke na Univerzitetu medicinskih nauka u Tabrizu. Rezultati studije su pokazali da su konvergentni i asimilacioni tipovi učenja najomiljeniji kod medicinskih sestara; ovi stilovi su efikasni i u skladu sa njihovom profesijom zahtevaju puno informacija i znanja. Kako je konvergentan tip učenja bio najčešći kod medicinskih sestara, preporučuje se primena nastavnih metoda koje prate ovaj tip učenja, što podrazumeva korišćenje dijagrama, prezentacija, predavanja, kao i samostalno učenje korišćenjem interesantnih materijala.

Ključne reči: stil učenja, nega, obuka