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Address

Nursing and Midwifery School, Yasemi St., Vanak Sq.,
Valiasr St., Tehran, Iran.

Phone

+98 (21) 888 828 85, +98 (21) 888 828 86

Fax

+98 (21) 882 019 78

Website

<http://jccnc.iums.ac.ir>

E-mail

jccnc@iums.ac.ir

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Research Paper:

Comparing Quality of Life Among Female Sex Workers With and Without Addiction

Anahita Khodabakhshi Koolae^{1*}, Fatemeh Damirchi¹

1. Department of Psychology and Educational Sciences, Faculty of Humanities, Khatam University, Tehran, Iran.

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ABSTRACT

Background: Prostitution and substance abuse are among the crucial social problems in women, which affect the quality of life. However, no study has yet investigated that prostitution and substance abuse affect which dimension(s) of quality of life. The current study aimed to compare different dimensions of quality of life among female sex workers with and without drug abuse.

Methods: The research design was ex post facto study. The study sample comprised 120 women (60 female sex workers with substance abuse and 60 without substance abuse). They were selected through convenience sampling method in Tehran, in 2016. They completed WHO Quality of Life-BREF questionnaire. Data analysis was done using multivariate analysis of variance and covariance methods by SPSS V. 20.

Results: According to the results, there was a significant difference between female sex workers with and without drug use ($P < 0.05$) with regard to physical, social relationship and environment health. The sex workers without drug abuse had higher quality of life in aforementioned aspects. However, no significant difference was observed among two groups with regard to psychological health ($P > 0.05$).

Conclusion: The results indicated that quality of life in female sex workers with using drug is poorer than their counterparts who are not drug users. These findings emphasize that health care providers can consider quality of life as an essential factor in therapeutic intervention (primary and secondary) in prostitutes and addicted women. Female sex workers using drug have the psychological, social, and biological needs that require the immediate and considerable attention.

Keywords:

Quality of life, Sex workers, Drug users, Women

1. Background

F

emale Sex Workers (FSWs) and female drug users are the marginalized population stigmatized by society. Nevertheless, extensive

research on this extremely vulnerable group is urgent and demand serious attention (Mirzazadeh et al. 2013). FSW provides sexual services in exchange for goods, money, or other benefits in different ways (Moore et al. 2014). It is difficult to estimate the prevalence rate of prostitution be-

* Corresponding Author:

Anahita Khodabakhshi Koolae, PhD

Address: Department of Psychology and Educational Sciences, Faculty of Humanities, Khatam University, Tehran, Iran.

Tel: + 98 (912) 2343717

E-mail: a.khodabakhshid@khatam.ac.ir

cause definition of sex worker is different. In other words, some reports did not count FSWs who offer provisional sexual service in hidden or occasional situation (Vandepitte et al. 2006). However, the estimate prevalence of prostitution among girls older than 15 years is 0.4 to 4.3 in African countries, 0.2 to 2.6 in Asian countries, and 0.1 to 1.4 in European countries (Love 2015). The prevalence of FSWs has not published in Iran (Malery Khah Langroudi et al. 2014). Several social (poverty, unemployment, lack of support service) (Vuylsteke et al. 2015), familial (family background, domestic violence/ physical and sexual abuse), and psychological factors conduct disorder (Collinsin & Ash 2015), personality trait (O'Conner & Brown 2016), and personality disorder, especially antisocial disorder (Alegria et al. 2013; Ramrakha et al. 2013) affect the prevalence of prostitution.

Moreover, several other recent studies have shown the comorbidity of prostitution with Substance Use Disorder (SUD) among FSWs (Matusiewicz et al. 2016; Argento et al. 2015). However, the serious risk of drug use is higher in female than men (Khajedaluae et al. 2013). Women are rapidly addicted to substance compared to men due to their psychological and physical vulnerability (Saberi Zafarghandi et al. 2013), a tendency towards increasing sexual desire under partner coercion (Khodabakhshi-koolae et al. 2015), and decreasing weight (Rahmatizadeh & Khodabakhshi-koolae 2012). Furthermore, several crucial factors influence the expanding rate of using illegal drugs among women, including financial, familial, and social factors; changing life style of women (Ohlin et al. 2015), as well as Quality of Life (QoL) (Baumeister et al. 2014).

QoL is a multidimensional concept that was defined according to the individual's perception of mental, physical, emotional and social functioning (Khodabakhshi-koolae et al. 2015; Hengartner et al. 2015). In this regard, the World Health Organization (WHO) defines QoL as "individuals' perception of their position in life in the context of the culture and value systems which they live and in relation to their goals, expectations, standards and concerns" (WHO 1997). Based on previous studies, QoL had a major role in commitment to abstinence (Tracy et al. 2012) and prevention of relapse (Motahhari et al. 2016).

However, previous studies have concentrated mainly on sexually transmitted diseases among FSWs and there were not sufficient published research on QoL and related factors (Vandepitte et al. 2006). Moreover, the results of the studies carried out on QoL are not consistent. For example, Brody et al. interviewed with 657 FSWs using a structured questionnaire. They reported that the majority of respondents rated their own health and quality of life as good (Brody et al.

2016). Whereas, Wang et al. carried out a study on 57 FSWs in China. They showed that only 7.5% of studied women were satisfied or very satisfied with their lives (Wang et al. 2007). Furthermore, FSWs are involved in addiction by peer pressure or addiction in their family (Seydi et al. 2014).

As mentioned, several studies have been carried out on AIDS/HIV and mental disorders and their effects on increasing the prevalence of prostitution. Nevertheless, no study has been conducted on the different aspects of health and QoL affected by prostitution. The current study aimed to compare QoL among FSWs with and without SUD.

2. Materials & Methods

Study design and participants

The present ex post facto study was carried out in crisis intervention center, social emergency centers, women-only residential Chitgar center, and overnight shelter Shosh center in Tehran, Iran, in 2016. According to previous studies and methodology of ex post research design, the sample size should be 60 participants in each group, so the researchers allocated 60 participants in each group (60 FSWs with SUD and 60 FSWs without SUD). The study sample were selected by convenience sampling method from aforementioned centers. The inclusion criteria were as follows: having at least high school degree of education, lacking any severe mental and physical illnesses, having at least 12 months record of being prostitute and having a dossier in Tehran Welfare organization. The exclusion criteria were as follows: filling out an incomplete questionnaire, having any severe mental and physical illnesses, having a history of prostitute for less than 12 months.

Study instruments

Demographic questionnaire

Researchers designed this questionnaire to collect information about FSWs' age, duration of sex-work, period of addition and marital status. The results are presented in Table 1.

WHO Quality of Life-BREF

The WHO Quality of Life-BREF questionnaire (WHO-QOL-BREF) was designed by WHO. This questionnaire is a short version of the original instrument that may be more convenient for use in large research studies or clinical trials (Skevington, Lotfy & O'Connell 2004). This inventory comprises 26 items, which measure broad domains, such as physical health, psychological health, social relationships, and environment. The items are rated on a 5-point

Likert-type scale from 1 (very poor) to 5 (very good). The original study reported its internal consistency reliabilities (Cronbach alpha) as follows: physical health = 0.80, psychological health = 0.76, social relationships = 0.66, and environment = 0.80 (Nejat et al. 2006).

The Persian version Cronbach alpha reliabilities have been reported as well; physical health = 0.70, psychological health = 0.73, social relationships = 0.55, and environment = 0.84 (Nejat et al. 2006). In the present study, the Cronbach α reliabilities were assessed, which were 0.72 for physical health, 0.70 for psychological health, 0.58 for social relationships, and 0.88 for environment.

Study procedure

Firstly, some information was provided about the aim and study procedure to the participants. Then the questionnaires were distributed among 156 FSWs with and without SUD in anonymous form. A total of 36 incomplete and inaccurate questionnaires were discarded from the returned questionnaires.

It is worth mentioning that the researcher ensured that the participants' confidentiality would be protected and also participants signed their written consent forms. It was announced to the participant that they had complete authority to participate in the research. This article was adopted by the research study which approved by ethics committee of Khatam University with approval number 94/h/117 on May 9, 2015.

Data analysis

The data were analyzed by descriptive and inferential tests. The collected data were analyzed by covariance and multivariate analysis of variance (ANOVA) using SPSS V. 20. P values less than 0.05 were considered as statistically significant.

3. Results

The Mean (\pm SD) age of FSWs with SDU and without SDU were 29.36(4.48) and 28.05(3.76) years, respectively. Also, the Mean (\pm SD) duration of prostitution was 30.16(5.75) months in FSWs without SDU group and 33.43(6.12) months in FSWs with SUD group. The duration of addiction in FSWs group was 25.20(8.14) months. In addition, 50% of FSWs group without SUD was single and 56.7% of FSWs group with SDU was divorced. Table 1 shows the sociodemographic characteristics of the participant in two groups. The assumption of equality of covariance was evaluated using Box's M test. The results of Box's M test demonstrated that the assumption of the homogeneity of the variance-covariance was established (Box's M = 148.022, $F_{[10, 66]} = 1.628$, $P = 0.092$).

The multivariate analysis of variance was used to assess the difference between two groups. The results showed significant difference between two groups in physical health ($F = 22.339$, $P = 0.0001$), social relationship ($F = 28.672$, $P = 0.0001$) and environment ($F = 7.400$, $P = 0.008$) (Table 2). In addition, no significant difference was observed between

Table 1. Sociodemographic characteristic of participants (n = 120)

Variables	FSWs Without SUD	FSWs With SUD
	No. (%)	No. (%)
Marital status	Married	4(6.7)
	Single	30(50.0)
	Divorced	26(43.3)
Education	Elementary school	7(11.7)
	Secondary school	16(26.7)
	High school	26(43.3)
	Diploma	10(16.7)
	Higher than diploma	1(1.7)
Income level	Poor	23(38.3)
	Lower middle class	31(51.7)
	Middle class	6(10.0)

FSWs = 60; SUD = 60

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Table 2. Comparing quality of life between FSWs without SUD (n = 60) and FSWs with SUD (n = 60)

Variable	Groups	Quality of Life						
		Mean ± SD	SS	df	MS	F	P	R ²
Physical health	FSWs without SUD	23.00 ± 1.96	99.008	1	99.008	22.339	0.0001	0.159
	FSWs with SUD	21.18 ± 2.23						
Psychological health	FSWs without SUD	20.61 ± 2.56	3.675	1	3.675	0.562	0.455	0.005
	FSWs with SUD	20.96 ± 2.55						
Social relationships	FSWs without SUD	8.48 ± 1.08	32.033	1	32.033	28.672	0.0001	0.195
	FSWs with SUD	7.45 ± 1.03						
Environment	FSWs without SUD	25.08 ± 3.12	52.008	1	52.008	7.400	0.008	0.059
	FSWs with SUD	23.76 ± 2.070						

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FSWs: Female Sex Workers; SUD: Substance Use Disorder; SD: Standard Deviation; df: Degree of Freedom; SS: Sum of Squares; MS: Mean Square; R²: Partial Eta Squared

two groups in subscale of psychological health ($F = 0.562$, $P = 0.455$) (Table 2).

4. Discussion

The current study was carried out to compare QoL among FSWs with and without SUD. The results indicated that physical health, social relationship and environment in FSWs without SUD is higher than those in FSWs with SUD. The similar studies were not found to compare the present study with them. Therefore, each subscale was independently investigated. The result of social relationship is consistent with the finding of previous research (Shannon et al. 2008; Murphy 2010; Dalla 2002). In a study on 12 FSWs in the USA found that one of the main causes of FSWs to maintain a poor QoL is social relationship within the gang subculture. The sex workers have a special subculture. Because their behavior are not respected by people and they are rejected from society, they prefer to deal with each other (Murphy 2010).

However, Dalla (2002) reported that "There might be a sense of camaraderie and kinship among FSWs." Therefore, it could potentially provide adequate protection in some way from a range of issues and act as a buffer against painful and traumatic experiences. Additionally, FSWs interact with various people and this possibly could improve some social skills in FSWs (Seydi et al. 2014).

The result of the present study in physical health dimension is consistent with finding of Chowdhury et al. (2013). The finding of a study in Bangladesh on 100 substance users

and FSWs indicated that 62% of substance users suffered from malnutrition, whereas this percentage in FSWs group is 52% (Chowdhury et al. 2013). Also, Choudhury (2010) through a semi-structural interview with 20 FSWs found that FSWs concern about their bodies, because it is an essential part of the prostitution and FSWs do not want to damage their bodies. Although FSWs are aware of their risky behavior and the effect of illegal drug consumption on their health but it considered as an inseparable part of being sex worker.

Additionally, the results showed that the environment aspect of QoL in FSWs without SUD is better than FSWs with SUD. This result is consistent with previous study results (Shannon et al. 2008; Murphy 2010; Dalla 2002; Chowdhury et al. 2013; Choudhury 2010). The environment factor impacts on the physical, social, and economic items (Rhodes et al. 2012). Thus, this result is explained through the explanation of the aforementioned dimensions (physical and social relationship).

Moreover, the finding of the present research demonstrated no significant difference between two groups in psychological dimension of QoL. This finding is consistent with results of recent research carried out in this field (Deering et al. 2014; Ulibarri et al. 2015; Vorpan 2015). Several studies demonstrated that psychological problems in FSWs and female substance users comprise various disorders, including anxiety disorder, post-traumatic disorder, and stress (Ulibarri et al. 2015; Vorpan 2015). Furthermore, these mental health problems result in a barrier to treatment access for in-

dividual with SUD (Behzad et al. 2015; Priester et al. 2016; Khodabakhshi-koolae & Damirchi 2016).

Since the QoL in patients referred to situation which reflects the mental and social condition. Then, based on the results of current and previous studies, substance use and sex work provoke a worsening conditional crisis that affect QoL. Furthermore, the QoL in FSWs with SUD is poorer than FSWs without SUD group. Hence, FSWs with SUD have the psychological, social, and biological needs that require the immediate and considerable attention. This attention should be concentrated on social relationship and physical aspect in women with SUD and psychological aspect in two groups. Women deal with high risks behavior, like multi-sex partner are facing the sexual transmitted diseases like HIV/ADIS, hepatitis, or other STD diseases. When the addition behavior is added to other risk behaviors like sex-work, QoL dramatically drops. Thus, these women belong to the vulnerable groups and need more attention from health professionals. Mental and psychical health interventions are necessary for them.

Results should be considered with caution due to limited study sample in Tehran. In addition, some incomplete demographic information and using a self-report measure which increased the possibility of biased reports were other study limitations. Thus, it is recommended that semi-structural interviews be used for future research.

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This study was adopted by research study with number registered 94/h/117 on May 9, 2015 in Khatam University. Authors of this research greatly appreciate all participated women and staff of crisis intervention center, social emergency centers, women-only residential Chitgar center, and overnight shelter Shosh center in Tehran, Iran.

Conflict of Interest

The authors declared no conflict of interests.

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Research Paper:

The Effect of Coping Strategies Training on the Quality of Life of the Family Caregivers of Patients With Chronic Mental Disorders



Mehrnoosh Inanloo¹, Fahimeh Ramezani^{1*}, Naimeh Seyedfatemi¹, Susan Moudi², Hamid Haghani³

1. Department of Psychiatric Nursing, School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

2. Department of Psychiatry, School of Medicine, Babol University of Medical Sciences, Babol, Iran.

3. Department of Biostatistics, School of Public Health, Iran University of Medical Sciences, Tehran, Iran.

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ABSTRACT

Background: Caring of the patients with mental disorders is a responsibility which brings lots of pressures and stresses to family members and lowers their quality of life. The current research aimed to study the effect of training coping strategies on the quality of life of caregivers of patients with chronic mental disorders.

Methods: This study is a non-randomized clinical trial conducted on 94 caregivers of patients with chronic mental disorder. The samples were recruited by convenience sampling method and the eligible ones were put in the intervention and control groups. The data collection tool were demographics questionnaire and SF 36 life quality scale. The coping strategies were taught in eight 90-minute sessions, during 8 consecutive weeks (once a week) for 2 months in groups. The obtained data were analyzed using descriptive and inferential statistics by SPSS V. 20.

Results: The caregivers were mostly female (62.7%) aged between 35 and 55 years. More than 80% of the study subjects were married. Most study subjects in both groups were housewives. In the intervention group, the physical functioning of quality of life before and two months after the intervention showed no significant difference ($P = 0.877$), but other areas showed significant increase two months later ($P < 0.001$). In the intervention group, the quality of life significantly increased two months after the intervention ($P < 0.001$), but it has declined in the control group ($P < 0.001$).

Conclusion: Based on study findings, coping strategies training was effective in promoting the quality of life. Experts in family health education are in need to educate and train families. Therefore, we recommend the mental health system to promote quality of life via developing such specialized programs and facilities at educational and health centers.

Keywords:

Coping strategies,
Quality of life, Family
caregivers

* Corresponding Author:

Fahimeh Ramezani, MSc.

Address: Department of Psychiatric Nursing, School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

Tel: +98 (911) 2177223

E-mail: ramezanif7@gmail.com

1. Background

At the moment, about 450 million people suffer from mental or behavioral disorder across the world, i.e. at least 1 out of 4 families is afflicted with a mental or behavioral disorder. The family members are often caregivers and in charge of everything from physical and emotional supports to pay expensive treatment costs of their patients ([A Group of Psychiatry Professors of Medical Universities in Iran 2010](#)). The incidence of mental disorder has been reported 6% in Iran. Based on 75 million population of Iran, around 450000 people suffer from mental disorders in our country, and need treatment, rehabilitation services and some hospitalization ([Rahgozar et al. 2012](#)). More than 60% of the clients are discharged from mental institutions and return to their own families ([Varcarolis 2002](#)).

Proven community-oriented service emphasizes the role of family as the most important and the best social supporter of the patients with chronic mental disorder ([Boyd 2005](#)). When a family member experiences a mental disease, the family is inclined to be a great source for helping the patient. Caring a patient is already stressful but diagnosing a psychiatric disease is distressing, in particular for the family. Having a patient with mental disease in a family can create a sense of guilt based on the role of disease hereditary nature from the parents, concern about the disease prognosis and other family member's involvements. Labeling also results in the family members' embarrassment associated with others' attitude toward the family ([Keltner & Debble 2014](#)).

Based on the evidence, family caregivers have limited data, resources and supports at hand to be prepared for such a new role ([Hudson et al. 2008](#)). Most people already lack personal experience in such cases facing with a severe mental disease in the family ([Taherkhani 2012](#)).

Family caregivers have undergone some losses such as hopes, visions and expectations and regretted because of experiencing the feelings of shock, disbelief, anger, frustration, guilt, anxiety, and shame. Family members sometimes feel being seated on an emotional roller with alternative periods of relapse and recovery. These cycles create significant distress for the family members who often experience huge distress following recovery after another relapse ([Sartorius et al. 2010](#)).

The current studies indicate that the diversity and intensity of care roles can lead to care burden and pressure

in family caregivers of such patients ([Navidian & Bahari 2008](#); [Onga 2008](#)).

Caregivers' care burden for the patient and family is awfully problematic. Caregivers report many nuisances related to their health status and because the care burden of a disease is taken for granted and has a covert nature, the patients and their caregivers are both in pain. Caregivers are desperately in need of social support and to be perceived. About 70% of the caregivers are exposed to two great problems about the patient's treatment and adapting with care induced responsibilities ([Milbury et al. 2013](#)).

Thus family members and in particular the caregivers are highly prone to lose their quality of life due to spending time and energy for caring the patients ([Glozman 2004](#)). Caregivers face mental disorders as a direct consequence of their caring role and experience higher rates of mental problems than the general population. This leads to negative effects on their quality of life and the standard of care delivered ([Rani 2012](#)). The individuals caring the patients at homes are prone to diseases like depression and anxiety disorders and their life expectancy is 10 years lower than normal people. Also it decreases such people's life quality ([Hares Abadi et al. 2012](#)).

The negative effect of care on the caregivers' quality of life accompanies other side effects such as poor mental health, additional use of anti-depressors and increased requirement of medical and hospital care ([Sartorius et al. 2010](#)). Corring by qualitatively studying quality of life of mental patients' family members concluded that as families spend their time on caring their patients, no time is left for them to enjoy life and have recreation. Extreme frustration, stress, fear, being inconsiderate, lack of support and constant doubt are some complaints the mental patients' families stated in their quality of life evaluation ([Corring 2002](#)).

Improving the effective coping strategies results in decrease the care pressure and ultimately, promotion of caregivers' physical and mental health ([Abbasi et al. 2012](#)). For effective participation in the patient's treatment programs, the family is exposed to problem. Through presenting broader training and more supports for the families, the mental health staff can help mitigate the pressures incurred on the family and provide the patient with a more useful support system ([Glynn 2000](#)).

In addition to previous coping strategies, the nurses have to focus on other effective coping strategies that the clients overlook. The nurses take measures for providing the environmental supports and or strengthening them

by determining the goals and priorities and decide on how to use them, i.e., which one of the coping strategies of the client needs controlling and which one requires strengthening (Kooshan & Vaghei 2012).

Because adaptability is important in the quality of life experience, it is a critical duty for the nurses to maintain or enhance the quality of life (Pickett et al. 2005). Relevant studies indicate that family participation in mental health service improves disease prognosis and promotes adaptability and also the family members' quality of life (Boyd 2005).

As mentioned before, caring a mentally disordered sufferer is a responsibility intertwined with lots of stresses and pressures for the family members, lowering their quality of life. Some therapeutic interventions such as training, support and psychotherapy can significantly decrease burden of family caregivers. In this way, the ground for care quality increase is paved and physical and mental health of family caregivers are promoted (Navidian et al. 2010). For this purpose, the current study was conducted to outline the effect of coping strategies training on the family caregivers of the patients with chronic mental disorders. Boosting the families' academic, financial, and emotional sources can be an appropriate umbrella for the patient so that the therapeutic and rehabilitation objectives be achieved. Educating the family about the disease, transferring the required skills on how to tolerate and cope with the disease raises the family's potential capabilities and it may somewhat compensate lack of the services available for the outpatient and inpatient psychiatric facilities (Glynn 2000).

2. Materials & Methods

Study design and participants

This study was a non-randomized clinical trial. This trial has been recorded at Clinical Trials Registry site (No. IRCT2015120925450N1) and verified by Iran University of Medical Science Ethics Committee holding the code IR.IUMS. REC, 1394.9211196214 on 12 October, 2015. It was conducted on caregivers of patients with chronic mental disorder referred to Shahid Yahyanejad and Ayatollah Rouhani educational and medical centers and clinics in Babol, Iran from December 2015 to April 2016. The inclusion criteria were as follows: caregivers' ages ranged 18-60 years, able to read and write, have healthy vision and hearing, lack prior training on coping strategies, lack chronic physical and mental diagnosed disease during their caring service, no substance abuse or dependency disorder, not being in critical conditions in the past 6 months in care (severe stress, the death of immediate family member, and be responsible of

caring only one physical or mental patient, also the patients' diagnoses be passed at least one year.

The exclusion criteria included being reluctant to continue receiving training and participating in the study, not participating in 2 sessions out of 8 training sessions, contributing in the similar training sessions concurrently.

To determine the required sample size with the confidence level of 95% and the power analysis of 80%, and with assuming effectiveness of coping strategies training on the quality of life in family caregivers of patients with chronic mental disorder. The sample size for each group was calculated as 47 caregivers.

Data collection

In this study, the demographics questionnaire along with short-form quality of life (SF-36) questionnaire (filled in by the study samples) were used as the data collection tool.

SF-36 quality of life questionnaire includes 36 items examining 8 dimensions of physical performance, physical roleplaying, body pain, general health, vitality, social functioning, emotional roleplaying, and mental health. The quality of life has been rated based on Likert-type scale at 5 levels of "very poor," "poor," "average," "good," and "very good." The sum of the 8 mental health dimensions gets scores from 0 to 100 where higher scores indicate higher quality of life. SF-36 quality of life scale reliability has been measured by Montazeri et al. (2005) and its Cronbach α has been reported as 0.77-0.9. The content validity of educational booklet and demographic questionnaire was confirmed by 10 nursing professors of Iran University of Medical Sciences, Tehran, Iran.

The data were collected in two stages as before and 8 weeks after starting the intervention. In the control group, the same routine has been implemented. The sampling has been convenient and the eligible ones have been put in the intervention and control groups (47 subjects in the intervention group and 47 in the control group). At the time of study (from December 2015 to April 2016), the caregivers of the patients referring on odd dates to Babol based Medical Science University Clinics of Shahid Yahyanejad and Ayatollah Rouhani Centers were put in the control group and those referring on the even dates were put in the intervention group.

Intervention

In this research, by coping strategies we mean a structured program consisting of 8 training sessions with certain objectives held for 2 months, during eight weeks (once/week)

and each session consisting of 90 minutes as groups consisting of 10 subjects in the intervention group. Each session starts with explanation of content objectives presented by lecture and slides (20 minutes), then a group discussion (50 minutes) and finally the presented materials will be summarized (20 minutes).

The coping strategies training program is based on a training pamphlet prepared and codified by the researcher after surveying the papers and library studies. In order to verify the content, it was handed to some faculty members of the School of Nursing and Midwifery, Iran University of Medical Science. The contents of the sessions are as follows: the first session, familiarity with the training contents, training program and objective explanation; the second session, explanation of psychiatric disorders schizophrenia and bipolar disorder and what are their symptoms; The third session: causes and signs of the stress as well as its effects on our life; The fourth session: coping with stress, the effective and efficient strategies in dealing with stress; The fifth session, the methods to cope with stress; the sixth session, other methods to cope with stress; the seventh session, social relation skills practice, how to get through the patient and solve the related crises, train problem solution, seek support from the mental health team; the eight session, conclusion and review of previous sessions. At the end of the sessions, the training manual is handed to the participants.

Data analysis

The data were analyzed by descriptive and inferential tests by SPSS version 20. For data analysis, descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics to determine significance (Chi-Square , T-Test and t couple and Exact Fisher test) were used.

3. Results

In this study, the obtained data extracted out of 94 study samples, including 47 in the control group and 47 in the intervention group were analyzed. More than 80% of the study subjects were married. Most of them in both groups were housewives. The study subjects' demographics revealed no significant difference between two groups (Table 1). The majority of the patients in the two groups suffered from bipolar disorder.

The mean scores of the different domains of "quality of life" were also compared between 2 groups. Based on Table 2, two groups of control and intervention have exhibited no post-intervention significant difference in the domains except for the physical functioning in the two main domains and the general state of the quality of life so that the mean post-intervention score of the intervention group was more than that of the control group. No significant difference was observed between control and intervention group ($P =$

Table 1. Distribution of demographic variables in 2 groups of caregivers (n = 94)

Variable	Control	Intervention	Test Result
	No. (%)	No. (%)	
Age, year	< 35	13(27.7)	0.193*
	35 - 45	14(29.8)	
	45 - 55	11(23.4)	
	< 55	9(19.1)	
Gender	Female	31(66.0)	0.410***
	Male	16(34.0)	
Marital status	Single	3(6.4)	0.610**
	Married	42(89.4)	
	Divorced or widowed	2(4.3)	
Job	Self-employed	15(31.9)	0.005**
	Employee	1(2.1)	
	Homemaker	27(57.4)	
	Other	4(8.5)	

Variable	Control	Intervention	Test Result
	No. (%)	No. (%)	
Economic status	Poor	11(32.4)	2.795***
	Average	36(76.6)	
	Good	6(12.8)	
Educational level	Elementary school	28(59.6)	2.085**
	High school	11(23.4)	
	Academic	3(6.4)	
	University graduate	5(10.6)	
Family relationship with patients	Mother	13(27.7)	0.087**
	Father	9(19.1)	
	Spouse	14(29.8)	
	Sister	2(4.3)	
	Brother	1(2.1)	
	Child	8(17.0)	
Duration of care (month)	12 - 60	28(59.6)	2.085*
	60 - 120	11(23.4)	
	120 - 180	3(6.4)	
	> 180	5(10.6)	
Size of family	2 - 4	29(61.7)	0.830*
	5 - 7	17(36.2)	
	8 - 9	1(2.1)	

* The T-Test was performed.

** The Fisher exact-Test was performed.

*** The Chi-Square test was performed.

0.837) with regard to the physical functioning score. However, the mean scores of the intervention group increased in all domains (except in physical functioning domain) after the intervention ($P < 0.001$).

And finally, it is worth pointing out that the pre-intervention and two months after the intervention related quality of life score variation in the intervention group has been statistically meaningful compared with that of the control group and positive in the intervention group ($P < 0.001$). It should be noted that increase in various quality of life dimensions in the intervention group when being discharged compared with their scores before the training intervention. Although this increase was also seen in the control group, comparing the variations between two groups revealed that this rise in the intervention

group was higher and can be attributed to the effect of training (Tables 2 and 3).

4. Discussion

The study results indicate that training coping strategies has positive effects on care burden and reduced it. Our study findings are compatible with those of the previous studies. A study reported that caregivers might experience high burden. Factors that led to high burden were the low income of caregivers, having to cope with work and taking care of persons with schizophrenia, care giving over long periods, increasing age of caregivers, and lack of resources for caregivers. Factors that lower the burden were also examined, including personal positive coping skills of the caregivers, family involvement

Table 2. Comparison of the mean of different domains of quality of life in the control group before and after the intervention (n = 47)

Quality of Life	Baseline Assessment	At the End of the Study	Independent T-Test Result
Variation	Mean ± SD	Mean ± SD	
Physical functioning	75.53 ± 25.54	75.42 ± 25.53	t = 1.000, df = 46, P = 0.323
Role playing restriction due to physical problems	51.06 ± 42.01	25.00 ± 28.55	t = 6.064, df = 46, P < 0.001
Role playing restriction due to emotional problems	34.75 ± 40.50	8.51 ± 22.49	t = 4.987, df = 46, P < 0.001
Vitality	43.19 ± 23.23	26.81 ± 15.41	t = 6.987, df = 46, P < 0.001
Mental health	53.53 ± 23.55	42.55 ± 17.04	t = 5.549, df = 46, P < 0.001
Social functioning	59.84 ± 21.80	43.62 ± 20.00	t = 5.067, df = 46, P < 0.001
Body pain	63.46 ± 25.29	53.24 ± 22.92	t = 3.749, df = 46, P < 0.001
Public health	49.04 ± 19.52	42.55 ± 17.53	t = 3.744, df = 46, P < 0.001
Physical health	59.77 ± 20.47	49.05 ± 15.65	t = 6.591, df = 46, P < 0.001
Mental health	47.83 ± 23.31	30.37 ± 14.53	t = 7.486, df = 46, P < 0.001
Quality of life	53.80 ± 19.84	39.71 ± 13.64	t = 7.848, df = 46, P < 0.001

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Table 3. Comparison of the mean of different domains of quality of life in the intervention group before and after the intervention (n = 47)

Quality of Life	Baseline Assessment	At the End of the Study	Independent T-Test Results
Variation	Mean ± SD	Mean ± SD	
Physical functioning	67.23 ± 27.02	67.55 ± 26.84	t = 0.156, df = 46, P = 0.877
Role playing restriction due to physical problems	30.32 ± 34.55	65.42 ± 30.64	t = 6.833, df = 46, P < 0.001
Role playing restriction due to emotional problems	26.95 ± 33.07	62.41 ± 31.56	t = 6.052, df = 46, P < 0.001
Vitality	35.64 ± 15.76	57.87 ± 15.84	t = 8.934, df = 46, P < 0.001
Mental health	46.38 ± 18.72	61.45 ± 14.62	t = 5.895, df = 46, P < 0.001
Social functioning	42.82 ± 22.53	56.91 ± 19.12	t = 5.264, df = 46, P = 0.001
Body pain	52.82 ± 28.22	64.47 ± 24.19	t = 4.177, df = 46, P < 0.001
Public health	43.62 ± 21.05	55.74 ± 16.61	t = 4.365, df = 46, P < 0.001
Physical health	48.50 ± 21.18	63.30 ± 18.08	t = 8.678, df = 46, P < 0.001
Mental health	37.95 ± 18.19	59.66 ± 15.20	t = 8.658, df = 46, P < 0.001
Quality of life	43.22 ± 17.99	61.48 ± 15.37	t = 9.590, df = 46, P < 0.001

Client-Centered Nursing Care

apart from the caregiver, spiritual support, social support, availability of mental health systems, and availability of other resources (Tan et al. 2012).

Also Khajavi et al. (2011) reported that by use of the impact of type of coping strategies on extent of burden sustained to chronic schizophrenic and bipolar caregivers,

training problem-centered coping strategies to caregivers may be considered as an approach for reducing burden tolerated by caregivers. Caregivers of patients with chronic mental disorder are a specific group with specific demands which must be recognized. As the starting point, supports such as training families, short-term hospitalization, psychiatric and professional rehabilitation and rendering services to patients at home may be pointed out. Also, the burden on them may be reduced by planning medical sessions based on increasing use of problem-centered coping approaches.

The most caregivers of patients with psychiatric illnesses were under stress and use different coping measures to deal with their stresses. This highlights that emotional distress is common among caregivers of patients with mental illnesses. The caregivers play a vital role in caring the psychiatric patients whose behaviors are more irritating than other patients which may cause stress in both caregivers and the patients. The finding suggests that various interventions should be applied to the caregivers to reduce their stress level and improve their quality of life (Darlami, Ponnose & Jose 2015).

The research by Kate et al. (2013) suggested that the caregivers spending more time on the patient experience higher tension. The scope of care burden tension has positive and significant association with avoidance strategy, compatibility, coercion, and total coping checklist score. The relationship between care burden and all life quality domains has been negative and significant. The total general health score has positive and significant relation with care burden tension. In this study, higher scores of tension scope has been attributed to poor life quality of the caregivers. It is possible that problem-oriented coping strategies skills are associated with caregivers' knowledge, information source, mental training, and cognitive capabilities. Thus if these coping skills are inadequate or inappropriate, they may not sufficiently lower the caregivers' experienced stress and burden. Caregiving burden, especially tension is associated with use of maladaptive coping strategies, poor quality of life and higher level of psychological morbidity in caregivers (Kate et al. 2013).

Navidian et al. (2010) reported that group mental training intervention can be an effective and efficient family intervention for family caregivers of mentally ill patients in a sample of Iranian community. Bademli and Çetinkaya (2014) study indicates that the intervention program has a positive impact on the mental health status and coping strategies of caregivers of patients with schizophrenia. In this research, some special variations have been spotted among intervention group after program

completion in the effective coping strategies of self-confidence, optimism, following the social support as well as in non-effective coping method in distress method. Concerning the study results, the intervention program has had positive effects on mental health and coping strategies of the caregivers of schizophrenic patients.

Livingston et al. (2013) study showed that in promoting the mental health of caregivers of patients with dementia, 40% of these caregivers had significant depression or anxiety and this study has been effective in lowering depression and anxiety symptoms of dementia patients' caregivers. Also the caregivers' life quality in the intervention group had significantly increased.

The group mental training intervention had promoted the life quality and social support of caregivers of bipolar patients. But it has left no significant effect on the depth of the relations of the caregivers of bipolar inpatients. It can be concluded from the study results that coping strategies training can lower care burden (Mojarrad, Ghanbari & Modares 2012). In conclusion, the present study demonstrated that training coping strategies to caregivers has had positive effects and the post-intervention training has resulted in improving their quality of life. According to the findings, the study hypothesis, i.e., "post-intervention quality of life in the intervention group has been higher than that of the control group" is verified. Based on the current research results, training coping strategies can promote the quality of life. Experts in family health education are in need to educate and train families. Therefore the mental health system is recommended to raise quality of life via developing such specialized programs and facilities at educational and health centers.

This study was conducted only on caregivers of patients with chronic mental disorders, and the short time follow-up might also be considered as a limitation to generalize the findings of this study. Therefore, conducting similar studies with longer follow-up is recommended.

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Conflict of Interest

The authors declared no conflict of interests.

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Research Paper:

The Effects of Life Skills Training on Patients' Adaptation With Multiple Sclerosis



Mahnaz Seyedshohadaee¹, Shima Parnian^{1*}, Marjan Mardani², Hamid Haghani³

1. Department of Medical Surgical Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

2. Department of Psychiatric Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

3. Department of Statistics, Faculty of Health Management & Information Sciences, Iran University of Medical Sciences, Tehran, Iran.

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ABSTRACT

Background: Multiple Sclerosis (MS) affects people's lives for a long time, therefore it is necessary to improve their quality of life by all means, including the most appropriate way of adaptation. The purpose of this study was to investigate the effect of life skills training on patients' adaptation with MS.

Methods: This study is a quasi-experimental study with a sample size of 80 subjects who were selected with convenient sampling method. Patients were assigned in the experimental and control groups. The experimental group received four 1-hour sessions training of life skills within a month. The control group received routine cares. Patients in both groups completed Coping with Multiple Sclerosis Scale (CMSS) at the beginning and one month after the last training session. To compare the findings between two groups, independent T-Test was used and to compare pre- and post-intervention results, paired T-Test was used. To analyze the data, SPSS 21 was used.

Results: Most respondents in both experimental and control groups (55% - 55.7%, respectively) were male. In the control group, the average age of respondents was 32.22 years and in the experimental group it was 33.02 years. There was no significant difference in coping with MS scores between experimental and control groups before life skills training ($P > 0.05$) but after training, both groups showed significant differences ($P < 0.01$).

Conclusion: Our main study result suggests positive effects of using life skills training. Because the main objective of these trainings was preparing and helping patients to solve problems and difficulties encountered due to their diseases, thus, applying life skills training in care plan is recommended in these patients.

Keywords:

Multiple Sclerosis,
Psychological training,
Adaptation

* Corresponding Author:

Shima Parnian, MSc.

Address: Department of Medical Surgical Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

Tel: +98 (921) 1620654

E-mail: shimaparnian1991@gmail.com

1. Background

Multiple sclerosis (MS) is an autoimmune disorder, characterized by a combination of motor and cognitive symptoms and mental/nervous disorders (Schmitt et al. 2014). This damage can interfere with nervous system ability for communication and cause several physical signs and symptoms (Compton & Coles 2008). The prevalence of the disease was 400000 in the United States and about 2 million in the world according to the National MS Society (Mcguire et al. 2015; Pagnini et al. 2014). In 2010, in Iran MS prevalence ranged from 5.3 to 74.28 per 100000 people in different regions (Hemmati Maslarpak & Raiesi 2014).

The effective component in quality of life that is impaired in people with MS is adaptation (Schmitt et al. 2014; Wollin et al. 2010). Studies on the people's adaptation with MS have shown that the adaptation has balancing effect on anxiety, depression and even creating new brain lesions (Cynthia et al., 2004). Adaptation encompasses cognitive and behavioral efforts to control, reduce, or tolerate internal or external demands that are threatening or more than one's personal resources (Farran et al. 2015). Unpredictable and unpleasant symptoms, treatment protocols and medication side effects impose multiple challenges on patients regarding psychological adaptation (Alschuler & Beier 2015). Factors such as health care barriers, economic pressures and political instability influence the adaptation mechanisms used and often increase the use of negative coping mechanisms (Farran et al. 2015). Although most people seem to have positive adaptation to maintain their quality of life, abnormal mechanisms are common which are closely associated with depression (Bianchi et al. 2014).

Despite the availability of disease-modifying treatment since 1993, MS management remains challenging (Tan et al. 2010). Although the drugs used to treat MS are modestly effective, they have side effects and are poorly tolerated (Weinshenker 1994). Effective coping mechanisms protect people against cognitive, environmental and biological factors that cause anxiety. It is important to be aware of adaptation mechanisms alongside with medical treatment to experience the best of life with MS (Milanlioglu et al. 2014). MS can affect people's lives for a long time and therefore it is necessary to improve their quality of life by all possible ways, including the most appropriate ways of adaptation (Mikula et al. 2014).

Results of studies have shown that psychological interventions can improve physical and psychological well-being of patients with MS through the treatment of mood disorders, improving self-management, strengthening self-efficacy and self-esteem, reducing stress, improving coping skills and general quality of life (Thomas et al. 2014). In this regard, life skills training is one of psychological interventions. Life skills are the abilities to adapt and have positive behavior which strengthen people to deal effectively with the demands and challenges of daily life (Vaidia 2014). This study aimed to investigate the effectiveness of life skills training in improving patients' adaptability in with multiple sclerosis.

2. Materials & Methods

Study design and participants

This study was quasi-experimental study where the impact of life skills training on the adaptation of people with MS was investigated. Samples were subjects with MS referring to the Society of Supporting Patients with Multiple Sclerosis in Tehran in 2017. According to the research inclusion criteria and using convenient sampling method, a total of 89 samples were chosen. Patients were referring to MS Society from Saturday to Wednesday to participate in training courses. Thus, the class participants were different in each day of the week.

To select the control and experimental groups, the researcher referred to the Society in odd and even days respectively and due to selection of the experimental and control groups in separate days there was no possibility of random allocation of cases to prevent information interference. This way, 46 subjects were selected as the experimental group and 43 as the control group. Six persons were excluded from the experimental group: one for failing to attend in one training session, one for discontinuing to participate in the study and four others due to disease recurrence and hospitalization. In the control group 3 people were also excluded because of their absence in the second stage to complete the questionnaire, due to disease recurrence and hospitalization.

Eventually, in experimental and control groups, data from 40 patients with MS were investigated and analyzed. The patients in the experimental group were asked to attend classes an hour before the start of training class of the Society. Life skills were taught in four 1-hour sessions to the experimental group. Inclusion criteria included a definite diagnosis of MS by neurologist, ability to read and write, ability to participate in training sessions, lack of experiencing disease attack by the patient over the

past three months, non-pregnancy, lack of changing the dose of disease-modifying drugs in case of taking these drugs, lack of other debilitating diseases and involvement of cognitive system, lack of chronic heart and lung disease, no psychiatric disorders or use of psychiatric drugs.

Exclusion criteria included hospitalization and disease recurrence, unwillingness or not attending in a training session, developing progressive type of MS and having excessive fatigue so that the patient cannot receive the training. Questionnaire of personal, medical and adaptation information were at their disposal for basic evaluation of patient before training. Coping with Multiple Sclerosis Scale (CMSS) was completed again in the eighth week by patients in both groups. Four sessions was held for patients in the experimental group within 4 weeks for an hour (1 session per week). At the same time, training manual and the relevant CD were given to the experimental group. Training manual has been prepared according to the topics taught to the participants as follows:

First session: Multiple sclerosis, its nature, the concept of life skills training and its applications, self-awareness skills. Second session: empathy skills training, interpersonal relationships and effective communication. Third session: reminders of past content and starting coping skills training, emotion management and problem solving. Fourth session: Previous review, teaching decision-making skills, creative thinking and critical thinking. All session held with presence of the researcher and subjects in the training room which was coordinated with the training center. Also in all counseling sessions, psychiatric nurse monitored the proper implementation and administration of the sessions. Training was presented by the researcher and through the lecture, discussion and Q & A methods. In case of absence from a training session, the subject was excluded. The control group received usual care and research instruments was given to them to be completed. To observe ethical principles, training manual and the relevant CD was at disposal of the control group at the end of training sessions. After collection of completed questionnaires, the researcher analyzed them.

Demographic information

Demographic questionnaire included information regarding gender, age, race/ethnicity, educational level, economic/social status, place of residence, marital status, employment status, personal health assessment, history of psychiatric disorder and medication as well as questions about MS such as type of MS (progressive / relapsing, remitting), duration of disease and experience of disease worsening.

Coping with Multiple Sclerosis Scale

To evaluate patient self-management, Coping with Multiple Sclerosis Scale (CMSS) was used. This instrument was introduced for the first time in 2001 by Pakenham to investigate the mechanisms of adaptation to cope with MS. CMSS is a 29-item questionnaire that investigates a person's reaction to specific stressful situations. Participants are asked to evaluate the main problem associated with MS which have experienced in recent months and also how much the problem has been stressful in the last month based on 7-point Likert-type scale (From 1 = not at all to 7 = very stressful). Then the participants are asked to report how often they have used these 29 adaptation mechanisms in connection with this problem in the past month.

Answers are rated in a 5-point Likert-type scale (0 = never, 4 = most of the time). A score of 4 represents the highest adaptation and a score of 0 indicates no adaptation. CMSS factor analysis showed that it has 7 subscales, including problem solving, physical help, acceptance, avoidance, control of personal health, conserving energy and emotional release. Problem solving factor had 3 items (11, 13 and 21), physical help factor had 5 items (6, 8, 26, 27 and 28), acceptance factor had 6 items (12, 18, 20, 22, 25 and 29), and avoid factor had 5 items (3, 9, 16, 19, 24). Personal health control factor has 4 items (1, 2, 15 and 17). Energy conservation factor has 4 items (4, 5, 7 and 23). Emotional release contains 2 items (10 and 14) (Chalk 2007).

The instruments validity and reliability

To determine the validity and reliability of demographic data as well as the validity of the training manual, the content analysis was used. CMSS has been designed for the first time in 2001 by Pakenham to investigate the mechanisms of adaptation which is used in dealing with MS. In order to create convergent validity, Pakenham compared CMSS instrument with Ways of Coping Checklist (WCC) (Chalk 2007). Each subscales of the CMSS with the exception of physical help was significantly correlated with two different subscales of WCC.

Reliability and validity of this instrument was again confirmed in 2007 by Chalk. CMSS factor analysis by Pakenham in 2001 showed that α confidence coefficient for 7 subscales varied in the range of 0.54 to 0.74. Factor analysis of WCC by Chalk in 2007 showed confidence coefficient in the range of 0.53 to 0.70 in each subscale. Although, this confidence is low, results of the study by Pakenham showed that CMSS is valid particularly for people with MS. Participants in Pakenham study evaluated CMSS as perfectly related to adaptation with MS and showed that

there is no need to add another adaptation mechanism to this instrument. This tool has been used in Iran (Chalk 2007). In Iran, the validity and reliability of CMSS had not been confirmed, therefore, the aim of this study was to confirm reliability and validity and Cronbach α was measured which its confidence coefficient was above 0.85.

The statistical analysis

To describe data, descriptive statistics was used and to achieve the objectives of the research and testing hypotheses, Chi-Square tests, independent T-Test, paired T-Test and Fisher Exact T-Test were used. All data were analyzed using the SPSS 21.

Research ethics

This research conducted with the approval of the University Research Ethics Committee with code No.

IR.IUMS.REC.1394.9311686009 and approval of Iran Research Council and MS Society. Before starting the study, written and oral consent were taken from patients. To observe ethics principles, the training manual with CD was provided for the control group at the end of the study.

3. Results

Most respondents in experimental and control groups were male (55%, 57.5%, respectively). The Mean (\pm SD) age of respondents in the control group was 32.22(8.88) years and in experimental group 33.02(10.34) years. Chi-Square, T-Test and Fisher Exact T-Test results showed that both groups were matched in terms of demographic data (Table 1).

Increasing the adaptability of people with MS after teaching life skills was significant compared with their initial adaptation and life skills training has significant

Table 1. Comparing demographic information between control and experimental group: Chi-Square, T-Test and Fisher Exact T-Test results (n = 80)

Variable	Control Group	Experimental Group	Test Results
Gender, No. (%)	Male	23(57.5)	Chi-square = 0.822 df = 1 P = 0.051
	Female	22(55.0)	
Age, mean \pm SD	32.22 \pm 8.88	33.02 \pm 10.34	Independent T-Test, t = 0.371 df = 78 P = 0.712
Marital status, No. (%)	Single	24(60.0)	Fisher exact T-Test P = 0.82
	Married	9(22.5)	
	Divorced	5(12.5)	
	Death of wife	2(5.0)	
Education level, No. (%)	Under diploma	25(62.5)	Fisher exact T-Test P = 0.38
	Diploma	13(32.5)	
	Above diploma	4(10.0)	
Health status, No. (%)	Poor	4(10.0)	Fisher exact T-Test P = 0.65
	Good	32(80.0)	
	Very good	4(10.0)	
Type of disease, No. (%)	Recurring – remitting	19(47.5)	Chi-square test = 0.79 df = 2 P = 0.47
	Elementary progressive	15(37.5)	
	Secondary progressive	6(15.0)	
Time period elapsed from the last attack of the disease, mean \pm SD	7.80 \pm 5.91	7.30 \pm 5.51	Independent T-Test t = -0.391, df = 78 P = 0.697
Number of disease attacks, mean \pm SD	5.90 \pm 3.40	5.90 \pm 3.01	Independent T-Test t = -0.001, df = 78 P = 0.99

Table 2. Comparing adaptation before and two months after the intervention in the experimental group (n = 40)

Variable	Before Intervention	After Intervention	Results of Paired T-Test
	Mean ± SD	Mean ± SD	
Adaptation	97.54 ± 11.70	112.37 ± 11.35	t = 7.48, df = 39, P < 0.001

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Table 3. Comparing adaptation before and two months after the intervention in the control group (n = 40)

Variable	Before Intervention	After Intervention	Results of Paired T-Test
	Mean ± SD	Mean ± SD	
Adaptation	96.77 ± 11.15	98.24 ± 10.17	t = 1.92, df = 39, P = 0.061

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Table 4. Comparing adaptation before and two months later in the intervention and control groups and presenting results of independent T-Test (n = 80)

Variable	Groups	Experimental	Control	Independent T-Test Result
		Mean ± SD	Mean ± SD	
Adaptation (total)	Pretest	97.54 ± 11.70	94.77 ± 11.15	t = 1.082, df = 78, P = 0.283
	Posttest	112.37 ± 11.35	96.50 ± 9.63	t = 6.742, df = 78, P < 0.001

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impact on increasing adaptation of people with MS in the experimental group ($P < 0.001$) (Table 2). Changes in adaptation of people with MS in the control group was not significant after intervention, compared with the initial adaptation ($P < 0.05$) (Table 3). Independent T-test showed that experimental and control groups had no significant difference with regard to adaptation with MS before training life skills ($P < 0.05$) but after life skills training, control and experimental groups had significant difference with regard to adaptation ($P < 0.001$) (Table 4).

4. Discussion

Our findings suggest that increase in patients' adaptation with MS after teaching life skills was significant (compared with the initial adaptation) and life skills training had significant effect on enhancement of patients' adaptation with MS. In other words, the experimental group had higher adaptation with MS compared with the control group. Therefore, according to the results, the effect of life skills training on adaptation with MS is confirmed. Research carried out in this field confirm the results of this study, too.

Rahmati et al. (2010) showed that life skills training improves communication disorders, behavioral distur-

bances, social adjustment and adaptation by effective learning interaction and reducing the inappropriate social behavior. A study showed that psychological interventions can improve mood disorders (such as anxiety and depression), self-management, self-efficiency and self-esteem, stress, adaptation skills and general quality of life, physical and psychological well-being of patients with MS (Thomas et al. 2014). The results of a systematic review study on the psychological interventions in patients with MS by Lara et al. showed that cognitive-behavioral interventions was useful in the treatment of depression in patients with MS and also helped patients to adapt with MS (Stepleman et al. 2009). Most studies in this field had not directly investigated the impact of psychological training in MS and investigating the matter in MS has been a step to increase knowledge related to non-drug interventions in the field.

The study results showed that teaching ten life skills improved overall adaptation in patients with MS through improving problem-solving, reception, control of personal health and energy conservation. Because of the content of ten life skills and its common points with adaptability dimensions, these skills can be used extensively to improve this important factor. Given that adaptability is

considered highly influential in the quality of life, through psychological training and in particular, life skills training, we can take a step towards solving the problems of these patients and ultimately improve their quality of life.

In this study, the need to acquire adaptation in patients with MS was mentioned in relation to the psychological needs as a nursing diagnosis, then in order to meet these requirements, training was given. The study results showed that after the implementation of educational-consulting role for nurses in the field of psychological trainings, adaptability behavior improved in the patients. Studies showed that lack of knowledge with regard to adaptation to the disease and problems in these patients caused various problems and finally led to various complications and their low quality of life.

Thus, due to the chronic nature of the disease, type of problems in these patients, inefficiency of drug treatment in solving these problems, and the need for continuous care, training can provide active and informed participation of the patients to solve some of their problems. Therefore, the fundamental achievement in this study is positive effects of using life skills training. This training aimed at preparing and helping the patient to solve problems and difficulties that they encounter due to their illnesses. And it is not possible unless we, nurses, provide a reassuring relationship between ourselves and patients in supporting, training and counselling them. Using this training provides valuable information and can have implications in nursing research and assessment and evaluation of care program of patients with MS.

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Conflict of Interest

The authors declared no conflict of interests.

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Research Paper:

The Effect of Workshop and Multimedia Training Methods on Nurses' Knowledge and Performance on Blood Transfusion



Forough Rafii¹, Maryam Jan Amiri^{1*}, Afsaneh Dehnad², Hamid Haghani³

1. Department of Medical Surgical, School of Nursing and Midwifery, International Campus, Iran University of Medical Sciences, Tehran, Iran.

2. Department of Management and Information, Faculty of Management and Information, Iran University of Medical Sciences, Tehran, Iran.

3. Department of Biostatistics, School of Public Health, International Campus, Iran University of Medical Sciences, Tehran, Iran.

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ABSTRACT

Background: Blood transfusion faults and its consequences are major concerns of health care systems. This study aimed to determine the effects of workshop and multimedia training methods on nurses' knowledge and performance about blood transfusion.

Methods: It was a controlled quasi-experimental study. Sampling was conducted. Data were collected from 37 participants in three hospitals during 2016 by a three-part questionnaire consisting of nurses' demographic information, routine blood transfusion knowledge (RBTQ) questionnaire, and Purfarzad-performance-evaluation questionnaire. Statistical analyses were conducted using SPSS V. 20.

Results: Nurses' knowledge and performance levels in workshop and multimedia groups increased from the average to the good level. No significant differences was found between workshop and multimedia groups regarding knowledge ($P = 0.474$) and performance scores ($P = 0.984$). Results of paired T-Test showed no significant differences before and after knowledge evaluation in control group ($P = 0.262$), while it revealed significant differences in workshop and multimedia group so that, the knowledge scores level increased from average to good ($P = 0.474$). Mean (\pm SD) performance scores in multimedia group were 70.36 (7.06) and 79.78 (0.91) before and after intervention, respectively. Therefore, before training the performance of groups was in average levels but they improved to the good levels after training ($P = 0.984$). Paired T-Test for workshop and multimedia groups before and after intervention revealed significant differences ($P < 0.001$).

Conclusion: This study showed that workshop and multimedia training methods are effective in promoting the nurses' knowledge and performance. None of these two methods outweighed the other. One reason in this regard might be due to mutual connection between teacher and students, the possibility to ask and answer the questions, discussing in workshop method, and the possibility to repeat the concepts and regulate the pace of training based on individuals learning abilities in multimedia method.

Keywords:

Workshop, Multimedia, Knowledge, Performance, Nurse, Blood transfusion

* Corresponding Author:

Maryam Jan Amiri, MSc.

Address: School of Nursing and Midwifery, Iran University of Medical Sciences, Rashid Yasemi St., Vali Asr Av., Tehran, Iran.

Tel: +98 (937) 3461484

E-mail: m.janamiri@gmail.com

1. Background

Nowadays, organizations allocate lots of their resources to educate their personnel (Alavi et al. 2009). In nursing education, the relationship between education and nursing services are growing, as well. Because of the need for creating dynamicity in this field and importance of nursing education through the life time (Heravi et al. 2004), the necessity of a cost-effective, practical and most effective training program is disclosed. With a continuous training, nurses can properly react to the rapid alterations in health system and upgrade their job skills. The science has a half-life of 2.5 years, and afterward would be considered as outdated and old. In addition, with the rapid advances in health related knowledge and technologies, basic training of nursing is practical only in a 10-year period (Jalali et al. 2004).

Thus, updating knowledge, which is mentioned in clinical governance and effective on knowledge and performance of medical staff as well as nurses is very important. Learning domains is divided into three major parts, namely, knowledge, attitude, and performance and training the nurses in all parts is necessary (Seif 2011). There is a relationship between knowledge and performance, for instance, one with a limited knowledge might be unable to perform or behave professionally in his or her job (Izad Panah 1994; Aghajan et al. 2013).

One of the big challenges in nursing education is providing an effective training method. There are variety of training methods, including workshop method. Workshop method consists of educational sessions held in order to teach a specific updated knowledge or skill for limited numbers of participants. In workshop classes, every educator can share and discuss his or her experiences about the topics and exchange his or her ideas and points of view with other participants (Haghani et al. 2012).

Educational technology has hastily advanced through its path. Early in this century, the importance of the audiovisual instruments in education was revealed and thereafter, a great evolution has happened in this area. The prophecy of educational technology is to provide such conditions that make learning processes more efficient and easier, improve creative capabilities of educators so that, they are responsible for their own learning, and encourage participants to interact with a larger community (Sabeghi, Heydari & Borhani 2012).

One of the educational methods is multimedia method. Multimedia means communicating and transferring top-

ics and concepts with the use of different media such as speech, music, images, text, animation, and interactive and user-friendly interfaces environments. With the arrival of Windows 95 operating system and improvements of computers' sound and image, multimedia was introduced. This tool is effective on better learning because it is interesting, cost-effective, low size, and engages various senses (van den Brink, Jager & Tost 2013). However, despite new learning methods, which are based on problem solving and using the internet and computers, the workshop method still remains one of the popular methods (Marambe, Edussuriya & Dayaratne 2012; Lai, Ngim & Fullerton 2012).

Blood transfusion is one of the interventions that nursing knowledge has a great impact on decreasing its complications and dangers; it is reported that, lots of mortalities caused by blood transfusion is due to the lack of knowledge (Hijji, Arwa & Dabbour 2012). There is no systemic report on the blood transfusion errors and mistakes in Iran. In the UK, from 2005 to 2010, a number of 7048 blood transfusion complications was reported. In addition, from 3054 reports given in 2011, half of the mistakes were related to the basic information about blood transfusion, like patient identification (Hijji et al., 2010).

Various studies have investigated the causes of this reported errors and mistakes which has been led to wrong administration of blood products. Some of the reasons were insufficient or inappropriate training of doctors and nurses in blood transfusion concepts and also lack of personnel (Purfarzad et al. 2012; Stainsby et al., 2005). According to above-mentioned, addressing the nurses training and retraining issues in order to update their knowledge and improve their performance is necessary. Thus, this study aimed to investigate and compare the effects of workshop and multimedia training methods on knowledge and performance of the nurses in the field of blood transfusion in hospitalized patents.

2. Materials & Methods

Study design and participants

This is a controlled quasi-experimental study. This research conducted with the approval of the University Research Ethics Committee with code No. IR.IUMS.REC.1395.9211196222 and approval of Iran Research Council and MS Society. Before starting the study, written and oral consent were taken from patients. Study population were nurses working in oncology, surgery, and emergency departments of three hospitals affiliated to Iran University of Medical Sciences (Firooz Abadi,

Firoozgar, and Rasool Akram hospitals). All participants had BS and were included into the study based on convenience sampling. Inclusion criteria were as follows: being engaged for at least six months in current work place, not being NGO workers, and providing direct care to the patients. Exclusion criteria were non-cooperation during the study and any department displacement. Participants were divided into three groups (workshop, multimedia, and control), consisting 37 participants in each group.

Data collection

Data were collected through a three-part questionnaire. In section one, there were 7 demographic questions (age, sex, blood transfusion performance history, education, and emergency, surgery, and/or oncology work experiences).

The second section was routine blood transfusion knowledge questionnaire with 32 questions that evaluates nurses' knowledge about blood transfusion in a self-reporting format. The least and the highest scores were 0 and 32, respectively. Scores less than or equal to 50% of total score (0-16) assumed as poor knowledge, scores between 51% to 75% (17-24) of total scores assumed as average knowledge, and finally scores more than 75% (25-32) of total score assumed as good knowledge. The questionnaire should be answered in 30 minutes (Purfarzad et al. 2012). The validity of this questionnaire has been confirmed and its Cronbach α test was estimated as 0.8 to confirm its reliability (Hijji, Arwa & Dabbour 2012). Ten members of science committee of Iran University of Medical Sciences confirmed the questionnaire's validity. In terms of reliability, internal correlation was used and Cronbach α was 0.789 for this questionnaire.

The third part evaluated the nurses performance toward blood transfusion. In this regard, the self-reporting performance-evaluator questionnaire was used (Purfarzad et al. 2012). The mentioned questionnaire comprised 20 questions about nurses' performance in terms of blood

transfusion with the 5-point Likert-type scale. The scores were between 0 and 80. Scores less than or equal to 75% (0-60) rated as poor score, scores between 76% to 90% (61-72) rated as average score, and scores more than 90% (73-80) rated as good score. The questionnaire should be answered in 10 minutes. The questions were about necessary actions before, during, and after blood transfusion and incidence of possible adverse reactions. The validity of this questionnaire was confirmed and the Cronbach α test has estimated as 0.7 in terms of its reliability (Purfarzad et al. 2012). In the current study, to determine the scientific validity of data collector's tools, content validity method was used; the questionnaire was evaluated by the use of related articles and textbooks and also advice of 10 professors. Internal correlation was used and the Cronbach α was 0.759 for this questionnaire. It is worth mentioning that in order to prevent data contamination, performance questionnaire was distributed after collecting the knowledge questionnaire.

Intervention

Before intervention, a pretest was obtained from all participants. The workshop group received four sessions containing presentation, slideshows, group discussion, question and answer, and practice; each session took approximately 4 hours. The multimedia group received a multimedia file (visual and audio). The storyline software was used in multimedia group. Educational contents were identical in both groups and the only difference was educational methods. The presented topics were derived from scientific websites, resources and articles. The content of topics was about process, history and applications of blood transfusion, necessary actions before, during, and after blood transfusion and having best performance encountering blood transfusion complications. Two weeks after intervention a posttest was obtained from 3 groups.

Table 1. Demographic characteristics of participants (n = 111)

Groups	Age, y Mean \pm SD	Work Experience, y Mean \pm SD	Gender %		Job Status %		
			Men	Women	Permanent Employee	Contractual Employee	Trial Employee
Control	32.05 \pm 6.24	4.40 \pm 4.77	13.5	86.5	40.5	37.9	21.6
Workshop	33.83 \pm 7.62	7.15 \pm 6.74	10.8	89.2	54.1	35.1	10.8
Multimedia	30.32 \pm 5.37	3.54 \pm 3.37	10.8	89.2	16.2	56.8	27.0
P	0.07	0.068	0.917		0.015		

Table 2. Distribution and homogeneity of blood transfusion times between groups (n = 111)

Group	Blood Transfusion Times %				
	0	1 - 4	5 - 8	9 - 12	12 <
Control	21.6	40.5	16.2	5.4	16.2
Multimedia	10.8	21.6	24.3	8.1	35.1
Workshop	29.7	27.0	5.4	18.9	18.9
P		0.031			

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Data analysis

Data were assessed by descriptive (frequency, mean and standard deviation) and inferential statistics, Chi Square, Kruskal-Wallis, ANOVA, and Scheffé post hoc tests using SPSS V. 20. P values less than 0.05 were considered as statistically significant.

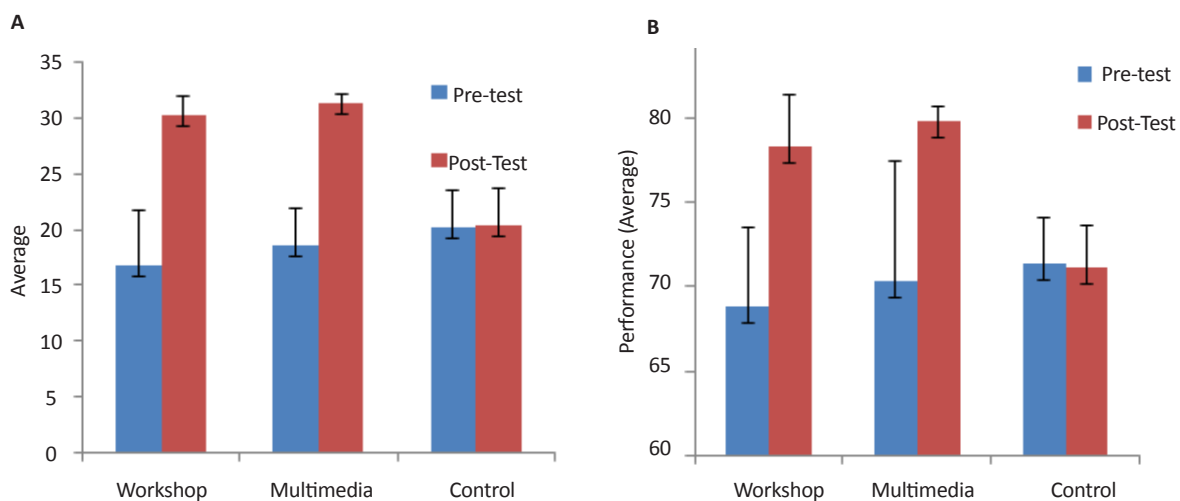
3. Results

Demographic characteristics of participants (Table 1) disclosed that based on ANOVA analyses, 3 groups did not have any significant mean age differences. In addition, based on Chi-square and Kruskal-Wallis analyses, three groups were homogenous in terms of sex and work experience, respectively. However, Chi-square analyses revealed a significant differences in job status between groups ($P < 0.05$). Overall, homogeneity analyses of this study exhibited that three groups were homogenous in terms of age, sex, and work experience but were different in terms of job status.

Table 2 results based on Fischer test, show that the blood transfusion times had significant differences in three groups ($P = 0.031$). It is worth mentioning that, the majority (40.5%) of participants in the control group had already performed blood transfusion (1-4) times, whereas, in the workshop group the majority (29.7%) had never experienced blood transfusion. In addition, 35.1% of multimedia group performed more than 12 times of blood transfusion.

Results of participants' knowledge evaluation showed that in workshop group, Mean (\pm SD) scores of knowledge before and after training were 16.68(4.93) and 30.37(1.60), in multimedia group 18.62(3.36) and 31.40(0.86), and in control group 20.18(3.36) and 20.35(3.41), respectively (Figure 1).

Results of paired T-Test in each group revealed that mean score of knowledge in control group did not show any significant differences before and after study ($P = 0.262$). Whereas, mean score of knowledge had significant differences between workshop and multimedia groups before and after study ($P < 0.001$). In addition,

**Figure 1.** Mean knowledge (A) and performance (B) scores of nurses before and after the study

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Table 3. Mean \pm SD knowledge and performance scores comparison in three groups before intervention (n = 111)

Group	Knowledge Mean \pm SD	Performance Mean \pm SD
Workshop	16.86 \pm 4.93	46.87 \pm 4.61
Multimedia	18.62 \pm 3.36	70.36 \pm 7.06
Control	20.18 \pm 3.36	71.35 \pm 2.74
Analyses of variance	F = 6.529 P = 0.002	P = 0.117

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Table 4. Knowledge and performance changes of intervention groups (n = 111)

Group	Independent T-Test	Multimedia Group Mean \pm SD	Workshop Group Mean \pm SD
Knowledge changes	t = 0.720 df = 72 P = 0.474	3.44 \pm 12.78	13.51 \pm 5.11
Performance changes	t = 0.021 df = 72 P = 0.984	9.41 \pm 7.17	9.38 \pm 9.38

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scores increased from average to good in both groups. Mean (\pm SD) score of performance in workshop group before and after training was 68.87(4.61) and 78.26(3.06), respectively and the scores rose from average to good.

Mean (\pm SD) score of performance in multimedia group before and after training was 70.36(7.06) and 79.78(0.91), respectively. Thus, although, majority of the study subjects were at average level before the intervention, they upgraded to the good level after the intervention. Furthermore, performance scores of control group before and after study were 71.35(2.74) and 71.10(2.52), which indicates no significant changes ($P < 0.001$).

Results of ANOVA illustrated that knowledge scores before intervention at least in one group was significantly different from others. Scheffé test indicates that mean knowledge score in control group was significantly different from workshop group and was higher in control group ($P = 0.002$) (Table 3). Due to the results of ANOVA, performance scores did not have any significant differences between groups before intervention ($P = 0.117$) (Table 3). Scheffé test revealed that mean performance scores in three groups were different from each other and was lower in the control group and higher in multimedia group.

Based on Table 4 results, independent T-Test revealed that there was no significant difference between work-

shop and multimedia groups in terms of knowledge and performance scores after intervention ($P = 0.474$). Thus, although both methods are effective in upgrading the knowledge and performance scores, none of the mentioned methods outweighed the other one.

4. Discussion

This study showed conspicuous changes in knowledge and performance scores in both experimental groups after the intervention. Knowledge and performance levels increased from average to the good levels, which indicates the effectiveness of both training methods. A study evaluated the knowledge of Brazilian nurses on blood transfusion; the results were similar to our study. This study revealed that lack of knowledge in some aspects is critical and may endanger the patients' health. Furthermore, it can decrease the effectiveness of blood transfusion and put the patients at the risk of receiving contaminated blood (Hijji, Arwa & Dabbour 2012). Since the control group did not receive any intervention, obviously there was no significant changes in this group before and after the study. Purfarzad et al. (2012) reported that there was a need for increasing the knowledge about blood transfusion complications and improving the related performances, and emphasized on the importance of training programs and the vital role of managers in controlling and supervising this issue.

According to the results, knowledge changes before and after intervention had statistically significant differences in three groups ($P < 0.001$). Results of the after intervention analyses disclosed that changes in the control group was very small and it was significantly different from the other groups. Knowledge score changes was not significantly different between workshop and multimedia groups, thus they were identically effective. Based on our knowledge, there was not any similar study which compare workshop and multimedia training methods. So comparison of our results with the results of other studies was not possible.

Aghajani et al. (2013) in their study evaluated the impact of multimedia training on knowledge and performance of surgical technology students and observed significant differences between knowledge ($P = 0.01$) and performance ($P = 0.03$) of participants before and after the intervention. Tukey test in the mentioned study revealed that the highest differences and impacts was observed on participants' knowledge. Thus, the mentioned study implies the effectiveness of multimedia method on upgrading knowledge and performance of participants, as well. In the quasi-experimental study of Perfeito et al. pleural drainage technique was taught to 35 medical students with the multimedia and workshop methods. There was no significant differences between two groups in the mentioned study (Perfeito et al. 2008).

Changes of performance scores in workshop and multimedia groups were not statistically different. So that, no method overweighed the other. The study of Alijanpour et al. (2014) which investigated the effects of multimedia and practical training on cardiac and pulmonary resuscitation in medical students, reported that practical method is more effective than multimedia method regarding students' better performance and skill earning. The results of mentioned study is not similar to our results.

In this study, the two intervention methods were equally effective. In workshop training method, individuals can learn better through discussing the issues, exchanging their experiences, and actively participating in the educational process. They can memorize the subjects more precisely and remember them easily (Berahmandpour & Ardestani 2012). On the other hand, in multimedia training method, individuals can learn better through simultaneous using of the senses, ability to repeat the concepts, giving exam at the same time with learning, and the ability to adjust the speed of training with learning capabilities (Wang 2008). Thus, both mentioned methods are effective on learning.

Because of the continuous expansion of Nursing and Medical Sciences, the research on methods which promote knowledge and performance in nursing seems necessary. Therefore, it is important to know and identify the effective and new methods and technologies in nursing education. In order to improve nursing education, it is vital to include some theoretical courses to train and re-train nurses during education and after graduation. Thus, they can provide better, faster and more comprehensive service to the patients. According to the findings of this study to improve nurses' knowledge and performance, both methods are useful, but this study suggests that integration of both methods (workshop and multimedia) could be more effective on improving nurses' knowledge and performance.

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Conflict of Interest

The authors declared no conflict of interests.

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Research Paper:

Anxiety and Depression in Patients Undergoing Coronary Angioplasty



Leila Rouhi Balasi¹, Arsalan Salari¹, Azam Nourisaeed^{2*}, Fatemeh Moaddab³, Maryam Shakiba⁴, Hamed Givzadeh⁵

1. Guilan Interventional Cardiovascular Research Center, Guilan University of Medical Sciences, Rasht, Iran.

2. Department of Psychology, Faculty of Humanities, Rasht Branch, Islamic Azad University, Rasht, Iran.

3. Department of Nursing, Faculty of Nursing and Midwifery, Rasht Branch, Islamic Azad University, Rasht, Iran.

4. Department of Epidemiology, School of Health, Guilan University of Medical Sciences, Rasht, Iran.

5. Department of Cardiology, School of Medicine, Guilan University of Medical Sciences, Rasht, Iran.

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ABSTRACT

Background: Anxiety and depression are the most important factors on the quality of life in patients after coronary angioplasty. These patients have less capability for adjusting themselves with changes in life style, diet, medication and physical activity adherence. This study aimed to determine predictive factors of anxiety and depression in patients undergoing coronary angioplasty.

Methods: In this descriptive cross-sectional study, 148 patients were selected by convenience sampling method. Data were collected by a 2-section questionnaire, including sociodemographic factors and the hospital anxiety and depression scale. Multivariate logistic regression was used to determine predictors of anxiety and depression. Using a convenience sampling method, the patients were selected among those patients undergoing PCI in Heshmat Heart Medical Hospital in Rasht, Iran between March 2015 and June 2015. Analyses were performed using SPSS 19.

Results: The majority of samples were male (61.5%), married (93.2%), retired (31.1%), and illiterate (48%). Their Mean (\pm SD) age was 60.02(10.5) years. According to the findings, 62.2% suffered from clinical anxiety and 20.3% suffered from clinical depression. The results of multivariate adjusted model showed that education level is significantly associated with mild depression. Also sex and age are significant predictors for severe depression. Male patients were less likely to have severe depression compared to female ones. Middle age patients (45-64 years) compared to older adults were more likely to be diagnosed with severe depression.

Conclusion: Considering the high prevalence of anxiety and depression symptoms in these patients, they need counseling, social and psychological support before, during and after procedures such as angioplasty.

Keywords:

Anxiety, Depression, Angioplasty, Coronary artery disease

* Corresponding Author:

Azam Nourisaeed, PhD Student

Address: Department of Psychology, Faculty of Humanities, Rasht Branch, Islamic Azad University, Rasht, Iran.

Tel: + 98 (911) 9312905

E-mail: roohi_balasi@yahoo.com

C 1. Background

Cardiovascular diseases are the most common and persistent diseases which are life-threatening (Holt et al. 2013; Zhang 2015). They are the most cause of death all around the world (Baumeister et al., 2015; Furuya et al. 2013). As estimated, death due to cardiovascular diseases will be increased from 16.7 million in 2002 to 23.3 million in 2030 (Furuya et al. 2013; Holt et al. 2013). Also it is estimated that prevalence of cardiovascular disease in Tehran City is about 20%–25% (Dalir et al., 2013). Different studies have also incriminated this disease for 20%-45% death in Iran (Moattari et al., 2014). Different methods have been used for its treatment, such as medical therapy, Coronary Artery Bypass Grafting (CABG) or Percutaneous Coronary Intervention (PCI) (Aalto et al. 2006; Roohafza et al. 2015; Sharif et al. 2014). Coronary angioplasty is the most common method (Potluri et al. 2014; Sharif et al. 2014).

It is an aggressive procedure, typically to treat arterial atherosclerosis (Furuya et al. 2013). This method improves patient's prognosis and ability for exercising and walking as well as reduce ischemic events symptoms such as angina pectoris, dyspnea (Trotter, Gallagher & Donoghue 2011). It is an effective and inexpensive therapeutic procedure with few side effects for revascularization (Park, Tahk & Bae 2014; Son, Kim & Park 2014).

Because of the invasive nature of the angioplasty, it is a stressful situation in the patients' live (Dalir et al. 2013). Many patients who underwent this procedure would face some kinds of mental problems (Chaudhury & Srivastava, 2013; Dalir et al. 2013). Anxiety and depression are common among these patients (Chaudhury & Srivastava, 2013; Ebadi et al. 2011; Roohafza et al. 2015; Wang et al. 2013). This can be due to short period of hospitalization and lack of mental support systems for patients (Sharif et al. 2014). However, health care providers think that coronary angioplasty is less invasive than surgery and patients experience less anxiety and depression and as a result, they think that their patients need less intervention and training (Ebadi et al. 2011).

Anxiety and depression among patients can be related to the progression of symptoms and coronary artery disease, weak performance status, recurrent cardiac events such as Myocardial Infarction (MI) and death (Bauer et al. 2012; Celano et al. 2015; Furuya et al. 2013; Gallagher et al. 2012; Morys et al. 2015; Ozturk et al. 2015; van Dijk et al. 2015).

Anxiety and depression are the most important factors on the quality of life (Rafael et al. 2014) and may also affect

physical aspects of quality of life such as left ventricular ejection fraction, pectoris angina and other chronic diseases (Ebadi et al. 2011). Anxiety and depression delay the adaptation period with the disease and have negative effects on patients' quality of life. Therefore, these patients have less capability for adjusting themselves with changes in life style, diet, medication and physical activity adherence (Sharif et al. 2014).

Now, regarding the high prevalence of coronary angioplasty and importance of anxiety and depression on the treatment outcomes, this study aimed to determine predictive factors of anxiety and depression in patients undergoing coronary angioplasty.

2. Materials & Methods

Study design and participants

This is a descriptive cross-sectional study to estimate the prevalence of anxiety and depression among patients undergoing Percutaneous Coronary Intervention (PCI) and their predictive factors. A total of 148 subjects were calculated to estimate 50% depression among PCI patients with a precision of 0.08 and the probability of type I error as 0.05. Using a convenience sampling method, the patients were selected among those patients undergoing PCI in Heshmat Heart Medical Hospital in Rasht, Iran between March 2015 and June 2015. The inclusion criteria comprised lack of psychological diseases in patients according to their medical records and doing coronary angioplasty for the first time. Also the study was approved by Guilan University of Medical Sciences review committee (IR.GUMS.REC.1930596704) and data was collected after announcing the research purpose and obtaining consent from the participants through interview.

Data collection

The research tools included two sections; first section refers to individual and social factors and the second section refers to hospital anxiety and depression. Individual and social variables, including age, gender, marital status, education level, history of any underlying disease, monthly income and residential location were asked from participants at least 6 months after surgery and data were collected by interviews and after obtaining written consent from the samples.

For determining anxiety and depression, we used Hospital Anxiety and Depression Scale (HADS) designed by Sigmund and Smith (1983) that was used for measuring anxiety and depression level in outpatients (Dalir et al.,

2013; Kaur et al. 2015). This questionnaire comprises two subscales and 7 items were used for measuring depression and 7 items were used for measuring anxiety. Each questionnaire item was ranked symptoms intensity based on 4-point Likert-type from 0 (non) to 4 (intense). The maximum score for each subscale is 21 and for the whole scale is 42 which can be a reflection of emotional disorder; the scores of each subscale range from 0 (no symptoms) to 21 (maximum of symptoms). Also the tool can be interpreted through classification; 0-7 indicates no clinical signs, 8-10 indicates weak mild depression or weak anxiety, 11-21 indicates clinical depression or clinical anxiety for both subscale (Dempe et al. 2013). The questionnaire was validated by Kaviani et al. and the results indicate that HADS has enough validity for applying in Iranian clinical population (Kaviani et al. 2009). Also in a pilot study, 15 questionnaire were filled by patients and then the α value for this population was estimated as 0.78.

Statistical analyses

Data are presented as frequency (percentage) and Mean (\pm SD) as appropriate. Chi-square test was used to evaluate the differences in distribution of sociodemographic variables between groups. All variables with P value less than 0.05 entered in multivariate adjusted model. To estimate Odds Ratios (ORs) and 95% Confidence Intervals (CIs) of predictors for mild and severe levels of depression and anxiety compared to no clinical sign, multivariate multiple logistic regression models were used. Analyses were performed using SPSS 19.

3. Results

In this study, during sampling (between March 2015 and June 2015) all patients with inclusion criteria were entered in the study. Demographic characteristics are pre-

Table 1. Demographic characteristics of patients undergoing coronary angioplasty (n = 148)

Variables	No.	%	
Age, y	< 44	11	7.4
	45 - 64	84	56.8
	> 65	53	35.8
	Mean \pm SD	60.02 \pm 10.55	
Gender	Male	90	60.8
	Female	58	39.2
Marital status	Single	8	5.4
	Married	138	93.2
	Widow	2	1.4
History of disease	Yes	72	48.6
	No	76	51.4
Education level	Illiterate	72	48.6
	Under diploma	45	30.4
	Diploma	16	10.8
	College	15	10.1
Income level, Rials	< 5000000	123	83.2
	5000000 - 10000000	11	7.2
	> 10000000	14	9.6
Residential location	Urban	91	61.5
	Rural	57	38.5

Table 2. The distribution of anxiety and depression in patients undergoing coronary angioplasty (n = 148)

Variable	Lack of Clinical Signs No. (%)	Weak No. (%)	Clinical Signs No. (%)	Mean \pm SD
Anxiety level	5(3.4)	51(34.5)	92(62.2)	11.07 \pm 1.96
Depression level	58(39.2)	60(40.5)	30(20.3)	8.34 \pm 2.69

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sented in Table 1. The Mean (\pm SD) age of participants was 60.02(10.55) years and most of them were male (61.5%), married (93.2%), retired (31.1%), illiterate (48%), and without history of underlying disease (51.4%). More than half of the participants had a monthly income less than 5 million Rials (70.3%), resident in city (61.5%) and most of them lived with their spouses and children (57.4%). Table 2 presents the clinical degree of anxiety and depression in these patients. A total of 92 subjects (62.2%) suffered from clinical anxiety and 30 subjects had clinical depression.

According to Table 3, no significant relationship exists between sex, age, marital status, education level, occupation, history of underlying disease and income level, residential location (city or village) with anxiety among these patients. However, there was a significant relationship between sex (P = 0.002) and education levels (P = 0.049) with depression (Table 3).

According to the results of univariate analysis, those variables with a P values less than 0.05 were selected and entered in the multivariate adjusted model. Table 4 presents the results of the multiple logistic regression model for de-

Table 3. Association between sociodemographic characteristics and depression and anxiety in patients undergoing coronary angioplasty, (n = 148)

Variables	Depression				P	Anxiety			P
	Lack of Clinical Signs	Weak	Clinical Signs	No Clinical Signs		Mild	Severe		
	No. (%)	No. (%)	No. (%)	No. (%)		No. (%)	No. (%)		
Age (year) ^a	< 44	5(45.5)	4(36.4)	2(18.2)	0.053	0(0.0)	6(54.5)	5(45.5)	0.217
	45 - 64	33(39.8)	27(32.5)	23(27.7)		2(2.4)	24(28.6)	58(69.0)	
	> 65	20(37.7)	28(52.8)	5(9.4)		3(5.7)	21(39.6)	29(54.7)	
Sex ^a	Male	42(47.2)	37(41.6)	10(11.2)	0.002*	4(4.4)	27(30.0)	59(65.6)	0.3
	Female	16(27.6)	22(37.9)	20(34.5)		1(1.7)	24(41.4)	33(56.9)	
Marital status ^a	Single	2(10.0)	4(50.0)	4(40.0)	0.132	0(0.0)	7(70.0)	3(30.0)	0.12
	Married	56(40.9)	55(40.1)	26(19.0)		5(3.6)	44(31.9)	89(64.5)	
Educational level ^a	Illiterate	20(27.8)	35(48.6)	17(23.6)	0.049*	2(2.8)	28(38.9)	42(58.3)	0.679
	Under diploma	19(42.2)	18(40.0)	8(17.8)		1(2.2)	13(28.9)	31(68.9)	
	Diploma	9(56.2)	4(25.0)	3(18.8)		1(6.2)	6(37.5)	9(56.2)	
	College	10(71.4)	2(14.3)	2(14.3)		1(6.7)	4(26.7)	10(66.7)	
History of disease ^a	Yes	26(36.1)	34(47.2)	12(16.7)	0.207	3(4.2)	24(33.3)	45(62.5)	0.855
	No	32(43.7)	25(33.3)	18(24.0)		2(2.6)	27(35.5)	47(61.8)	
Income level, Rials ^a	< 5000000	39(37.5)	48(46.2)	17(16.3)	0.091	4(3.8)	39(37.5)	61(58.7)	0.096
	5000000 - 10000000	7(77.8)	2(22.2)	0(0.0)		0(0.0)	1(11.1)	8(88.9)	
	> 10000000	7(63.6)	4(36.4)	0(0.0)		1(8.3)	1(8.3)	10(83.3)	
Residential location ^a	Urban	40(44.4)	33(36.7)	17(18.9)	0.293	2(2.2)	30(33)	59(64.8)	0.505
	Rural	18(31.6)	26(45.6)	13(22.8)		3(5.3)	21(36.8)	33(57.9)	

*: Significant results

a: Chi-Square test

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Table 4. Multivariate adjusted model for depression in patients undergoing coronary angioplasty

Variables	Mild Depression				Severe Depression				
	Beta	Wald Test	OR (95% CI)	P	Beta	Wald Test	OR (95% CI)	P	
Age	≤ 44	0.30	0.14	1.35(0.27 - 6.77)	0.71	1.34	1.53	3.83(0.45-32.14)	0.22
	45 - 64	-0.13	0.09	0.88(0.38 - 2.01)	0.75	1.39	5.13	4.03(1.21-13.47)	0.02*
	≥ 65 (referent)	0.0	-	1.0	-	0.0	-	-	-
Sex	Male	-0.06	0.02	0.94(0.4 - 2.19)	0.89	-1.44	7.41	0.24(0.08 - 0.67)	0.006*
	Female (referent)	0.0	-	1.0	-	0.0	-	-	-
Education	Illiterate	2.17	5.93	8.78(1.53 - 50.48)	0.01*	1.35	2.10	3.87(0.62-24.15)	0.15
	Under diploma	1.57	3.29	4.81(0.88 - 26.1)	0.07	0.75	0.66	2.12(0.35-12.93)	0.42
	Diploma	0.81	0.66	2.24(0.32 - 2.01)	0.42	0.71	0.45	2.04(0.25-16.37)	0.50
	College (referent)	0.0	-	1.0	-	0.0	-	1.0	-

No clinical sign serves as the referent group. OR: Odds Ratio, CI: Confidence Interval

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*Significant results.

pression. Using no clinical sign of depression as the reference category, illiterate patients were more likely to have mild depression compared to patients with college education (illiterate: OR = 8.78, 95% CI = 1.53-50.48). Sex and age were significant predictors of severe depression. Male patients were less likely to have severe depression compared to female ones (OR = 0.24, 95% CI = 0.08-0.67). Middle age patients (45-64 years) compared to older adults were more likely to be diagnosed with severe depression (OR = 4.03, 95% CI = 1.21-13.27).

4. Discussion

The present research indicates that most patients who underwent coronary angioplasty suffered from clinical anxiety so the therapeutic team should pay especial attention to these patients. A research was carried out to investigate the prevalence of anxiety and depression and treatment outcomes in patients with history of hospitalization in coronary care unit. The research indicated that 90% of patients suffered from anxiety (Beyraghi, Tonekaboni & Vakili, 2006). Stress and anxiety delay the adaptation period, impose negative effects on patients' quality of life and postpone their return to social activities and occupation (Sharif et al. 2014).

Regarding depression subscale, clinical depression was reported only in 20.3% of cases. In a study of anxiety and depression among patients suffering from coronary artery disease, Moradian et al reported that 38% of participants suffered from mild to severe degree of depression (Moradian et al. 2013). However, this level of depression is also important as it has its own effects on treatment consequences. Evidence indicates that depression has a signifi-

cant relationship with increased death rate and side effects of cardiovascular disease (Ebadi et al. 2011). Depression is also related to pathophysiological mechanisms of coronary artery disease such as unhealthy life style and lower medication adherence (Furuya et al. 2013).

In the current study, there was no significant association between sociodemographic variables and anxiety. Regarding the depression, the result of multivariate adjusted model indicated a significant relationship between education level and mild depression, i.e., illiterate participants had significantly higher level of mild depression compared to patients with a college education. Also Cunha et al. (2016) carried out a research with the purpose of studying the presence of depressive symptoms in patients with coronary artery disease and their results indicated that depression among patients with lower educational level was higher than the other people. Indeed low level of education can lead to a decrease in social activities and establishment of depression (Beyraghi, Tonekaboni & Vakili, 2006).

In the present study, also the result of multivariate adjusted model indicated a significant relationship between sex and age with severe depression. According to this, female participants had higher level of depression than male participants and the results were in the same path as Furuya et al. who studied the association between sex and the presence of anxiety and depression after hospital discharge in patients who underwent Percutaneous Coronary Intervention (PCI). In their research, it was revealed that depression is more common among women than men (Furuya et al. 2013). Because women seem to be more sensitive and emotional than men and are also threatened by psychologi-

cal problems and tensions in different life crises more than men (Paryad, Hosseinzadeh & Kazemnejad Leili 2014).

Age was associated with severe depression in that the odds of severe depression in patients aged 45-64 years was significantly higher than older adults. In Pedersen et al. study, results showed that patients with depressive symptoms were generally older (age > 60 years) (Pedersen et al. 2006). But in Wang et al. study, there was no significant correlation between age and depression score (Wang et al. 2012). The researcher believes that this finding may be due to the involvement of these groups in life problems. But older people have more peace of mind.

Because of the high prevalence of anxiety and depression among patients undergoing coronary angioplasty and its effects on disease process, adherence to treatment, quality of life and the like, it seems that psychological consultation is required before and after the procedure. Also it is recommended to pay attention to symptoms of depression and anxiety in order to handle and care these patients; because in many cases, these symptoms may be hidden and left undetected. Also future care plan of these patients to be set according to their predictors such as age and educational level. The limitation of this study was small sample size and convenience sampling method. So a study with a larger sample size is recommended.

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Conflict of Interest

The authors declared no conflict of interests.

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Research Paper:

Exploring the Impact of Individual Factors in Taking Cervical Cancer Screening: A Content Analysis



Vian Haji Rasul¹, Mohammad Ali Cheraghi^{2*}, Zahra Behboodi Moghadam³

1. Department of Nursing, Shaqlawa Technical Institute, Erbil Polytechnic University, Erbil, Iraq.

2. Department of Critical Care Nursing, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran.

3. Department of Reproductive Health, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran.

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ABSTRACT

Background: Cervical cancer remains the leading cause of cancer death among women in developing country. In Iraqi Kurdistan Region, few women undergo screening and the incidence of cervical cancer is on the increase as is the case in most developing countries. The purpose of this study was to explore women's individual factors affecting the performance of the cervical cancer screening in Kurdistan Region, Iraq.

Methods: The present study adopted a qualitative design based on conventional content analysis approach. Purposive sampling was used to select 22 women who had either had a Pap-Smear or refused to have one. Semi structured in depth interviews were conducted with each individual to collect data. Data were collected from August 7, 2015 to July 22, 2016. The criteria for including samples for this study were as follows: 1) Married Kurdish women who are living in Kurdistan Region, Iraq, 2) Willingness to participate in the study, and 3) Not undergone cervical cancer screening. Non Iraqi Kurdish women were excluded. Each interview lasted for 42-70 minutes on average. In order to analyze the collected data, the obtained purified codes were compared and simultaneously clustered and classified under certain themes using their similarities and differences.

Results: Seven main themes including age, educational level, having multiple full-pregnancies, existence of signs and symptoms of cervical cancer, psychological factors, poverty, and marital status emerged during the data analysis.

Conclusion: The findings of this study indicated that individual factors can prevent women from cervical cancer screening in Kurdistan Region, Iraq. Understanding these factors may lead to the development of effective programs and policies to improve cervical cancer screening uptake by Kurdish women.

Keywords:

Cervical cancer screening, Content analysis, Qualitative research

* Corresponding Author:

Mohammad Ali Cheraghi, PhD

Address: Department of Critical Care Nursing, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran.

Tel: +98 (21) 66933600

E-mail: mcheraghi@tums.ac.ir

1. Background

Cervical cancer is the second most common cancer in women living in less developed regions (World Health Organization 2015). According to the research findings, cervical cancer has a multi-factorial context. In Kurdistan, some of these factors have been identified; marriage under the age of 18 years, early age at first pregnancy, multiparity, low socioeconomic status, and cervical infections. Also, a study was carried out to detect the prevalence rate of Human papilloma virus (HPV) infection among women with different cervical lesions in Iraqi Kurdistan region showed HPV type 16 was the most common type detected among the positive studied cases (Ali 2010). These factors together with many environmental and epidemiological changes, which the Kurdistan region has been exposed to, could predispose the region to an increased risk of cancer. Cervical cancer screening has proved to be a great step towards cancer prevention and according to World Health Organization (2015), if this screening is done in each area for 10 years, it will decrease the incidence of cervical cancer by 64% (Beydag 2011).

A Pap-Smear is a simple, quick, and relatively painless screening test for cervix cancer screening. It is aimed at detecting cervical cancer in its early stages, and could reduce both incidence and mortality rates of invasive cervical cancer. Moreover, Pap-Smear coverage discrepancies noted within countries where developing countries has lower coverage (19%) than developed countries (63%) (Gakidou, Nordhagen & Obermeyer 2008). Unfortunately, World Health Organization (2015) reported that there was no data available about estimated coverage of cervical cancer screening in Iraq. However, according to Ministry of Health in Kurdistan Region, nearly 3000 Pap-Smear tests had been done in 2014. Kurdistan Region is an autonomous region in Northern Iraq with a population of 8.35 million (Anon 2016). Although, the Ministry of Health reported an increasing number of women who were referred every year, this number still indicates a few people who have gotten Pap test.

The main aim of cervical screening program is to increase the level of participation and acceptance of cervical screening. However, this must be done in the context of informed consent and understanding of the screening tests (Everett et al. 2011). But one of the significant obstacles to the achievement of cervical cancer screening is the non-acceptance of the program by women. Subsequently, the central motivation of cervical screening programs is to increase the level of acceptance and participation of

the screening. It seems that keeping track of the cervical screening test is a situation that is embedded in personal and social self. Therefore, understanding the influencing factors associated with the cervical cancer screening is important. This study intends to provide some description and explanation on the individual influencing conditions for keeping track of the cervical cancer screening.

2. Materials & Methods

Study design

A qualitative method with content analysis approach was used to describe the experiences and viewpoints of the participating women (Elo & Kyngas 2008). We chose content analysis due to its well-established ability to elucidate the trends and patterns of communication by systematically coding and categorizing approach. It can be used to unobtrusively explore a large volume of textual information (Gbrich 2007).

Study participants

Participants consisted of 22 women from Kurdistan Region who were willing to participate in the current research. The participants were chosen based on purposeful sampling strategy according to maximum variation technique. The criteria for including samples for this study were as follows: 1) married Kurdish women who are living in Kurdistan Region, Iraq, 2) willingness to participate in the study, and 3) not undergone cervical cancer screening. Non Iraqi Kurdish women were excluded.

Data collection

Data were collected from August 7, 2015 to July 22, 2016. Semi-structured in-depth interviews were conducted with each participant. The participants had either taken or refused a Pap-Smear. Interview questions were:

Did you participate in Pap testing?

Please tell me about individual factors or conditions influencing you to follow /not to follow cervical cancer screening?

The interviews were conducted in a private room in the Pap-Smear center, face to face and individually. Each interview lasted for 42-70 minutes on average. Recruitment continued as long as new themes emerging from the interviews. Data saturation was reached at 19th interview and on the 20th, 21st, and 22nd no extra information was revealed. All interviews were carried out in Kurdish language by the researcher and then

translated into English. The English texts were revised by a bilingual editor to eliminate any mistranslations. All interviews were recorded by a digital voice recorder and transcribed verbatim at the same day and then analyzed concurrently (Graneheim & Landman 2004; Speziale, Streubert & Carpenter 2011).

Data analysis

In order to analyze the collected data, the transcriptions were carefully reread several times and divided into some manageable, condensed pieces. These data pieces were then abstracted and labeled with codes. The obtained purified codes were compared and simultaneously clustered and classified under certain themes using their similarities and differences. A number of themes were ultimately identified (Graneheim & Lundman 2004).

Trustworthiness

The researcher tried to establish credibility, dependability, conformability, and transferability that describe operational techniques supporting the rigor of the work (Lincoln & Guba 1985). Therefore to establish rigor, this study used prolonged engagement, persistent observation, member check and external check, searching for confirming and disconfirming evidence, researcher credibility, panel of experts, clarity and stepwise replication, constant comparative analysis, maximum variation of sampling. The researcher repeatedly check the data and the participant's talk and with considering the bias and rapid prejudice to provide creation in analysis and credit of data.

Ethical considerations

The research project was approved by the Ethics Committee of Tehran University of Medical Sciences (project No. 130/1117, approval date: August 10, 2014) and the Ministry of Health and Director of Health in Erbil (No. 65, date: May 12, 2014). Before study, the participants were provided with a detailed description of the study and its risks and benefits during an initial phone contact. The women were ensured about the confidentiality of data then premised to tape-record the interviews and asked to provide informed consent.

3. Results

General characteristics of the participants

The mean age of the respondents was 40.3 years (range: 25-57 years). The married subjects aged 14-28 years. About half (53.3%) of the participants lived in ur-

ban areas and the remaining (46.7%) in rural areas. The education level of the respondents ranged from illiterate to doctorate degree. Nearly half of the participants were employed. Moreover, most (80%) participants were married, one (6.7%) was divorced, and two (13.3%) were widowed.

Themes

The results of the study revealed some individual factors and conditions related to cervical cancer screening in Kurdistan region. Seven main themes were age, educational level, having multiple full-pregnancies, existence of signs and symptoms of cervical cancer, psychological factors, poverty, and marital status.

Age

According to the recommendations in the latest guideline of WHO, cervical cancer screening should be applied for women aged 30 years (recommended age to start screening) and older because of their higher risk of cervical cancer. However, the net benefit differs among age groups and may extend to younger and older women depending on their baseline risk of CIN2+ (World Health Organization 2013). In Kurdistan Region, Iraq, however, the recommended age to start cervical cancer screening is three years after marriage to all women according to guideline of Kurdistan Ministry of Health. Because early marriage was common (from 12 years age) in the Kurdish society and according to the latest guideline of World Health Organization (2015), women who were younger than 17 years when they had their first full-term pregnancy are almost 2 times more likely to develop cervical cancer later in life than women who waited to get pregnant until they were 25 years or older. The results of the study showed that just a few number of participants knew the time of the beginning of screening and its regular repetition, and most of them did not exactly know when they should start it and how to follow.

"I know screening tests need to be carried out at younger ages (in fact after marriage) and after it, they are conducted every three years, and if their results are normal. They should be considered." (Participant 1)

"As far as I remember, I think when women exceed 40, they're better to have such test once a year." (Participant 5)

Most of the participants considered conduction of the test necessary for older women or making decision to take the test after the age of 40. One of the women had

the test at her 40 for the first time, she explained the reason for her selection of this age as:

"I knew if there were any problems before that age, they would be at their early phases. After that age; however, if there is a problem, it will be so serious and it can be too late for treatment. That is why I told myself that I needn't sit on my hands and I need to make a serious decision."(Participant 1)

Among younger women that considered themselves to be away from developing cervical cancer, some thought that conduction of the test was unnecessary for them while some agreed with its necessity, and some refused to have the test.

A 38-year-old woman who had never had the test said:

"Well, because I am young, I think that when a woman gets old, need to carry out preventive tests." (Participant 15)

A 27-year-old participant who had frequent infections said:

"I'm sure that the result will be negative, that is why I'm not worried about it. I'm sure I've got no problems, it's too early for me to get this disease. By conducting the test, I'm quite sure, and I'll be happy and feel comfortable." (Participant 11)

A 34-year-old participant who refused to have the test said:

"The symptoms of this disease don't emerge until 10-15 years, and I'm young and don't have any signs. God is great, who knows what will happen by then and what my destination will be. It's possible that I won't be alive by then, who knows who's dead or alive." (Participant 6)

Educational level

The women who participated in this study had different educational levels from illiterate to doctorate. This study indicated that educational level did not affect the cervical cancer screening.

A 48-year-old participant who had finished fifth grade of elementary school said: "Now that doctor has advised me that this test is good for my health and control, I believe it's very important, and this motivates me to go for it once my appointment is due or even before that." (Participant 9)

On the opposite, a woman who held a bachelor's degree in midwifery explained her reason for refusing to have Pap test as follows:

"This may be attributed to the fact that we don't go to doctor unless some problems happen to us. Unfortunately, even those who work in the health field know what science says but they're also too lazy to take it seriously." (Participant 5)

The results of the study showed that the educational level did not seem to be correlated with eagerness of what Pap test is used for and meant to. There is no clear relationship between taking action and being inactive to have screening test, and there are ambiguities almost among women with different levels of education who need necessary information. In this regard, a graduate in Agriculture major said:

"When the doctor talked to me about this test, it was quite new to me, and something formed in my mind that affected me. Now I sometimes think about it, and I'd like to have the test." (Participant 6)

Even if, the women at the lowest educational level like to have a Pap test; if they knew that a Pap test was used for cervical cancer screening.

An illiterate participant who was familiarized with the test after she had referred to doctor talked about the reason for having the test like this:

"I was really scared of receiving a positive result, and then I made my mind to have the test. I would thought to myself: 'If I have it, it's better for me to know about it as soon as possible. It's better for me, and the treatment will be easier.' Then I referred to the Health Center and had the test."(Participant 3)

Therefore, educational level is not a barrier to know what Pap-Smear is used for and why it is important to have a Pap-Smear and health managers related to subject in Kurdistan Region should improve the cervical cancer screening programs. For example, newspapers, magazines, TV and the radio are different ways for women with low and high educational women to get the knowledge that Pap-Smear is a test used for screening.

Having multiple full-term pregnancies

According to the latest guideline of WHO, women with 3 or more full-term pregnancies have higher risk of developing cervical cancer.

The researcher tried to include women with different number of children (0 to 10) in the study. However, none of the participants talked about the relationship between

the number of their children and higher probability of developing cervical cancer, instead they were concerned about their children if developing the disease, and that was one of the reasons for referring for the test. A participant who had two children talked about her main motive for having the test as:

“Staying alive is my main motive, because when I look at myself, I have two small kids, and if I’m not there for them, what will happen to them? That is why I want to stay alive by all means, it is for my kids in the first place.” (Participant 12)

Another participant who had 10 children talked about her main reason for having Pap test as this:

“Because my kids were small and their dad was dead, I kept thinking if I’m not with them, what will happen to them. Now my children are deprived from having father, and if I die, they’ll become complete orphans. I was thinking of this issue for some time, and I started to believe that I needed to refer to a doctor, and if I’m inflicted, it’s better to know about it sooner.” (Participant 18)

Existence of signs and symptoms of cervical cancer

Women with early cervical cancers and pre-cancers usually have no symptoms. Symptoms often do not begin until a pre-cancer becomes a true invasive cancer and grows into nearby tissue. When this happens, the most common symptoms are abnormal vaginal bleeding, an unusual discharge from the vagina, and pain during sexual relationship (vaginal intercourse). Therefore, women would be better not to wait for symptoms to appear and be screened regularly.

The majority of the participants highlighted the necessity of a Pap test when signs and symptoms were present. They believed that under such circumstances, a woman might be at risk of developing cancer. Women with no problem considered the test unnecessary and decide not to do it.

“I told I didn’t have any problems, and why I should have the test. I’ve never thought about the Pap test for myself.” (Participant 8)

These common signs and symptoms of cervical cancer can also be caused by other conditions other than cervical cancer like an infection (which can cause pain or bleeding).

According to the latest guideline of [World Health Organization \(2015\)](#), if women have any of these problems, they should see their health care professional right away –

even if they have been getting regular Pap tests. If it is an infection, it will need to be treated. If it is cancer, ignoring symptoms might allow it to progress to a more advanced stage and lower their chance for effective treatment.

Psychological factors

Women subconsciously referred to their psychological factors to approach different life situations like cervical cancer screening. Being frightened to refer to doctor and have necessary tests is considered as one of the mental factors that causes some participants to refuse taking the test although they know about its necessity and importance. Therefore, it is difficult for them to make their minds, so they avoid the test. A 48-year-old participant said:

“When the doctor told me that I needed to have this test at the Maternal and Infant Hospital, it took me one week to make my mind and to get over my fear. I’m a coward, and I get frightened by any test that is recommended to me. For example, once I had a toothache, and I was scared to go to dentist. I believe this test is like other tests for me, and that’s why I’m scared.” (Participant 9)

Another participant who refused to have the test talked about her fear to have the test this way,

“In the first place, I’m really scared of both the test and its result. I’m a very fearful person. Believe me, I didn’t dare to insert IUD while everyone says it’s not painful at all. I prefer to prevent pregnancy through other ways. I’m that much scared of both the test and the result.” (Participant 17)

On the other hand, some participant referred to their bravery while going to their doctor.

“Whenever I get sick, I visit my doctor, and I’ll follow all her orders whether she prescribes me drugs or examinations. I’m brave for such things. For me, this test was not different from other tests. I know whatever my doctor advises me is good for my health, so I follow her orders.” (Participant 10)

Discomfort emerged as another subtheme in this study. Due to the discomfort during gynecological tests (with the insertion of the speculum), women were reluctant to be tested. One participant reported:

“Generally, I do not like gynecological tests, especially when the speculum is used, and I do not want to have them unless I am forced to.” (Participant 13)

A few participants suggested embarrassment and shyness as the reasons for their refusal. One of the participants explained:

“My main problem is the shame of the Pap test. Every time, I think to have a Pap test I change my mind because I feel embarrassed if someone does the test for me.” (Participant 4)

However, the majority of the participants did not describe embarrassment as a major barrier since the test was performed by a female healthcare provider.

Some participants expressed feelings of unsafety and anxiety caused by their mistrust of hospitals. Such mistrust prevented them from having a Pap test even if they decided to have one. The participants did not trust in the sampling instruments, the individuals who collected the samples, or the laboratory results. A participant explained:

“Facilities and equipment used in the hospital for my test were a barrier. I was afraid that dirty and unsterile equipment might be used.” (Participant 1)

Another woman who refused the test stated:

“If I want to go and do the test, I doubt the laboratory and I will not be sure that the result is correct.” (Participant 5)

Poverty

Pap test is conducted for free in governmental centers; therefore, financial conditions do not affect the test conduction much. The participants had a monthly income of about 300 to 3500 dollars; however, women with low and average incomes stated that if the test were expensive and were carried out outside the country, they would not be able to have it.

“In fact, life should let us refer for the test, if the test is expensive, I can't have it.” (Participant 13).

Poverty is also a risk factor for cervical cancer. Many women with low income do not have immediate access to adequate health care services, including Pap tests. This means they might not get screened or treated for cervical cancers and pre-cancers. Some participants stated that although the test was conducted for free in governmental centers, they were worried about the expenses of cancer treatment, which was one of the causes for refusing to have the test.

“I think fear of treatment can also cause us to neglect having the test. When I think to myself and say suppose I go and have the test, and I come to know that I have cancer, then how can I treat it and where can I bring the money to buy the drugs?” (Participant 5)

Marital status

Participants of the present study consisted of married, divorced, and widowed women. According to the guidelines of Kurdistan Region health system, all women should have the screening test for cervical cancer after marriage; however, some participants stated that they thought the test is necessary only for those who have a husband. A divorced woman who was advised Pap test due to her abnormal bleeding said:

“When I heard this advice, I was socked in the first place, because I've been separated from my husband for many years, I thought I didn't need Pap test, and I had never thought that this test was also used for divorced women; therefore, I had never thought about it before that time.” (Participant 2)

In this part the researcher found individual conditions, which in this research were the immediate set of conditions faced by women on cervical cancer screening.

4. Discussion

The individual factors affect cervical cancer screening and play an important role. Individual factors found in this research included age, educational level, multiple full-term pregnancies, signs and symptoms of cervical cancer, psychological factors, poverty, and marital status. Early age of marriage and first pregnancy is one of the known risk factors of cervical cancer that is common in Kurdistan Region. The majority of women who used or did not use cervical cancer screening services were not aware of the start of screening time and most of them believed testing is just necessary for old women. This finding was consistent with the result of other previous studies that reported increasing age was associated with a decreased use of screening services (Nene et al. 2007). Whilst one study showed Zimbabwean women between the ages of 25 and 34 were more likely to access cervical screening compared with those equal or larger than 45 years (Mupepi, Sampselle & Johnson 2011).

Also another study that mentioned women aged 35-44 years were more likely to have ever had a Pap test compared with those aged 45-54 years (Bessler, Aung & Jolly 2007). In addition, the study participants in South Africa believed that the age for the Pap test should be younger than 20 and should be repeated at five-year intervals (Sibiya & Grainger 2007). Based on the study results, educational level of Kurdish women did not reflect on the cervical cancer screening and all women regardless of their educational level had low level of knowl-

edge on the benefits of the test and prevention of cervical cancer and need to receive more information. One study was done in Kenya found that the level of cervical cancer understanding and screening history was low among women with a high level of education (Ngug et al. 2012).

Whilst Bessler, Aung and Jolly (2007) study result in Jamaica showed that education had a strong influence on Pap screening uptake. There was correlation between higher education level and increased cervical cancer screening attendance. Other cross-sectional study among rural women in South Africa mentioned that an important aspect with regard to cervical cancer screening is whether women who have a higher educational background and a better knowledge of cervical cancer screening also have a higher rate of Pap-Smears (Hoque, Hoque & Kader 2008).

We found that having multiple full-term pregnancies had no effect on cervical cancer screening as our participants were not aware that women with 3 or more full pregnancies had an increased risk for developing cervical cancer. Similarly, a cross-sectional study conducted in Kenya indicated just 10% of their patricians identified having many children as a risk factor for cervical cancer (Murugl 2014). Also, most Queensland women in a computer assisted telephone interview survey did not consider that high parity could increase the risk of cervical cancer (Christie 2013).

The majority of women performed cervical cancer screening when they had gynecological problems or any abnormal signs and symptoms. However, lack of any symptoms made some women ignore the importance of cancer prevention. Similarly many Korean American women thought that cancer screening tests were needed only after symptoms of cancer occur and they should only seek care when they become sick (Lee, Fogg & Menon 2008). Fort et al. argued that women who had immediate symptoms of cervical cancer sought screening (Fort et al., 2011). Similar findings were reported by Morema et al. (2014) and Murugl (2014). However the most important risk factor for cervical cancer is infection by the Human Papilloma Virus (HPV) but none of the interviewed women were aware of the connection between HPV, change of cells in cervix, and cervical cancer. This result is consistent with Wong et al. (2009) and Hounsgaard et al. (2013) study results, while different from that of Guilfoyle et al. (2007) and Nene et al. (2007) results.

Psychological status of women was another important barrier as mentioned by some participants. Some women in our study also reported feeling of fear, embarrassment and discomfort during the procedure as other barriers to

screening. The exposure of private parts of the body and insertion of the speculum during a pelvic examination were commonly mentioned by the participants. Embarrassment, fear, and pain were also highlighted by older African American and Hispanic women in New York (Guilfoyle, Franco & Gorin 2007). Similar results were also reported in other studies (Byrd, Chavez & Wilson 2007; Waller et al. 2009; Menard et al., 2010).

In addition, mistrust of laboratory test results and fear of infection were reported by our participants. Similarly, women in Malaysia were worried about pain and possible contamination during a Pap test (Al-Naggar & Isa 2010). Mistrust of the smear taker was also another barrier to perform a Pap test in the current study. A study in Canada introduced insufficient familiarity with the care provider and discomfort with the power imbalance between themselves and the care provider as significant barriers to cervical cancer screening among aboriginal women (Maar et al. 2013). Therefore, to increase trust in cervical cancer screening services, the Ministry of Health should train the smear takers and compel the use of disposable instruments. Since psychological barriers are not easy to overcome, effective information provision and communication between women and healthcare providers are necessary. Clear explanation about cervical cancer and a Pap-Smear procedure can help decrease women's anxiety, fear, discomfort, and embarrassment.

Financial status can also play a role on cervical cancer screening. Women with low incomes were less interested in undertaking the screening even though test was done for free in public health centers. The women were worried about the cost of cancer treatment if diagnosed. Sibiya and Grainger (2007) argued that if the cervical screening was provided without any charge it would help more women to use Pap test services. The National Breast and Cervical Cancer Early Detection Program has provided free or low-cost screening and diagnostic breast and cervical cancer services to low-income, underinsured, and uninsured women and access to state Medical programs for treatment (Benard et al. 2014). Cronje and Beyer (2007) reported that coverage of the population chiefly depends on the provision of funds, initiatives on the part of health care services and the compliance of the targeted population. Also the women were concerned about the indirect costs of getting screened, including transportation, visit of doctors, and medicines fees (Fort et al., 2011). Delay in definitive therapy for cervical cancer occurs among women with lower income and educational background (Ashing-Gaiwa & Rosales 2013).

According to our participants' opinions, taking Pap test was known necessary and important just for married women who have husbands. However other women like widows or divorced females felt no need for screening based on their relationship status. Because they had no partners they felt there was no risk. These results are consistent with previous study done by [Leach and Schoenberg \(2007\)](#). They reported that married women were 43% more likely to follow their Pap tests compared with all other women ([Leach & Schoenberg, 2007](#)). Also this was similar finding by [Nene et al. \(2007\)](#) and [Marlow et al. \(2015\)](#).

This study set out to explore in a qualitative research how Kurdish women are involved in cervical cancer screening processes in Kurdistan region, Iraq. According to the study results, individual factors affect cervical cancer screening process. In addition, preventive cares like conducting check-ups and routine tests, including Pap test have not become a part of the Kurdish people's culture. Therefore, the findings of this study suggest that the decision to undertake cervical screening is influenced by a combination of factors. The knowledge about cervical cancer and its screening is essential for taking Pap test.

In this study, we only included Iraqi Kurdish Muslim women who lived in Kurdistan Region of Iraq. The findings of this study have potential implications for the Ministry of Health and health policymakers who are interested in improving cervical cancer screening.

Although the individual factors of women affecting cervical cancer screening were clearly described by women in this study, future research is warranted to elucidate how to improve the cervical cancer screening program in Kurdistan region and to increase the acceptability of the program.

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Conflict of Interest

The authors declared no conflict of interests.

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Research Paper:

Effectiveness of Outcome-Based Education on Maintaining Semi-Upright Position of Patients Under Mechanical Ventilation



Zahra Taherzadeh¹, Nooredin Mohammadi^{2*}, Fateme Agha Hoseini³

1. Lowlagar Hospital, Iran University of Medical Sciences, Tehran, Iran.

2. Department of Critical Care Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

3. Department of Biostatistics, Faculty of Public Health, Iran University of Medical Sciences, Tehran, Iran.

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ABSTRACT

Background: According to studies, despite the proven and effective role of mechanical ventilation on patients with respiratory failure, the positive effects of semi-upright position on oxygenation and ventilation of patients under mechanical ventilation and nurses' training about them have been neglected. This study aimed to investigate the effect of outcome-based education of nurses on maintaining the semi-upright position in mechanically ventilated patients (MVPs).

Methods: This study was an outcome-based research and designed with pretest/posttest. All nurses of intensive care unit of Firozgar Hospital participated in a 2-hour individual training course with the outcome-based approach on maintaining the semi-upright position in MPVs. The obtained data were collected by a checklist, including questions about demographics, knowledge, and performance. Assessment of the performance was performed via observation and completing checklist by the researcher. After collecting data, they were analyzed through descriptive and inferential statistics using SPSS V.20.

Results: The results showed that the Mean (\pm SD) score of nurse's knowledge before and after training were 47.41(23.63) and 89.63(10.18), respectively and administering semi-upright position in MVPs in the posttest was significantly increased.

Conclusion: The outcome-based education on maintaining the semi-upright position in MVPs has positive effects on knowledge and performance of nurses. We recommend use of this method in nurses' curriculum.

1. Background

E

ach year, lung diseases affect a lot of people that reduce their performance in daily activities, also they are one of the most

important causes of mortality around the world (Bousari et al. 2014). Acute respiratory failure incidence and prevalence is rising and accounts for 137 per 100000 people in America and only 36% of hospitalized people with this diagnosis survive (Bassampour et al. 2008).

*** Corresponding Author:**

Nooredin Mohammadi, PhD

Address: Department of Critical Care Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

Tel: +98 (21) 43651619

E-mail: nooredin.mohammadi@iums.ac.ir

Mechanical ventilation is one of the most common forms of prescriptive medical treatment for patients admitted to Intensive Care Units (ICUs) (Chaiwat et al. 2010). It is an integral part of treatments that most patients in critical stages or with multiple complications need (Radhakrishnan, Ghosh & Dash 2007). The advent of mechanical ventilation device with positive pressure to support oxygenation and ventilation in patients who are unable to resume normal breathing for any reason, have saved the lives of many patients from imminent danger (Mohammadi, Ebrahimian & Mahmoudi 2009).

Mechanical ventilation can have adverse effects on the cardiovascular system (decreased cardiac output), respiration, gastrointestinal tract, musculoskeletal system, water and electrolytes state, increased intracranial pressure (Fiona et al. 2007), and psychological status of the patients (Takekawa 2002). The position of the patient in the bed has an impact on body vital signs like respiratory, musculoskeletal system, and so on (Smeltzer et al. 2010). Therefore, maintaining correct posture is of great importance for critically ill patients, and especially those who are under mechanical ventilation.

One of the best and most effective strategies to reduce the above-mentioned problems is to maintain a semi-upright position or in other words raising the head for 30 to 45 degrees (Sadeghi, Safari, & Karimlou 2008). In this position, lung functional residual volume decreases and airway resistance increases (Agostoni & Hyatt 1986). Although, these changes are insignificant in healthy people (Pankow et al. 1998), it is of great importance in people with lung problems who are under mechanical ventilation with positive pressure. Because, low oxygenation is among conditions which creates dangerous situations for these patients and can lead to complications such as hypoxia, arrhythmia, loss of consciousness, and even death (Sadeghi, Safari, & Karimlou 2008). One study has emphasized the effect of a semi-upright position on reducing microaspiration through endotracheal tube (Muscedere et al. 2008). The results of another study showed that in semi-upright position, the imposed weight on organs decreases and normal skeletal system position is better maintained (Viir 2010).

Unfortunately, the majority of nurses are not aware of the benefits resulting from semi-upright position for patients and in most cases, maintaining a semi-upright position is not considered as one of the interventions necessary for mechanically ventilated patients (MVPs) (Van Nieuwenhoven et al. 2006). Therefore through appropriate education, nurses' knowledge about the necessity of maintaining semi-upright position in MVPs should be

increased, furthermore, they should be encouraged to maintain this position in clinical patients. Today, outcome-based education (OBE) is known as a standards-based education. OBE system is, in fact, focuses both on students' learning and their performance (Paterson, Hesketh & Harden 2002). As noted above, because of the importance of observing semi-upright position in maintaining and improving the health of acute patients and also shortage of articles about the effect of OBE on the training of nurses, we decided to conduct a study with the objective of "the effect of OBE in nurses with regard to maintaining semi-upright position in MVPs".

2. Materials & Methods

Study design and participants

This study is an outcome research conducted based on Donabdin theory (1987) to provide some opportunities for stronger scientific proof of nursing performance (Grove, Burns & Gray 2012). Using this method, the researcher evaluated and studied the effect of OBE on nurses to maintain semi-upright position in MVPs. The study design is practice pattern profiling. The current study setting comprised ICUs of neurosurgery unit of Firoozgar Hospital which includes Neurosurgery ICU and Beh Afarin ICU. This trial has been recorded at Clinical trials Registry site (No. IRCT 9311449203) and verified by Iran University of Medical Science. This research conducted with the approval of the University Research Ethics Committee with code No. IR.IUMS.REC.1394.9211449203.

The study sample included all patients under mechanical ventilation hospitalized during the 4-week period (2 weeks before training and 2 weeks after training). Our study samples were selected using convenience sampling method and then their written consent forms were taken. Regarding the study nature which is an outcome research, no inclusion or exclusion criteria should be considered. However, it is necessary to identify those who do not receive the intervention or treatment. As a result, checking the status of all patients hospitalized in neurosurgical ICU of Firoozgar Hospital during the period of data collection was considered in the inclusion criteria. The study exclusion criteria included having special clinical states such as shock or unstable blood circulation that made it impossible to maintain these patients in suitable position.

Data collection

The data collection instrument for this study was a 3-part designed checklist; 1) demographic information

(client code, number of beds, the name of the ward, age, gender, cause of admission), 2) information needed to evaluate semi-upright position for patients under mechanical ventilation to assess the performance of nurses (a table for observing patient’s state), and 3) a section related to the knowledge of nurses, including 5 questions with 4 options (scores ranging from 0 to 5). The validity of the instrument was confirmed using content validity by 8 members of the Faculty of Nursing and Midwifery of Iran Medical Sciences. The reliability of the instruments was evaluated by simultaneous observation of the investigator and research assistant and the correlation coefficient using Cronbach α which was 0.87 representing the reliability of the instrument used.

Intervention

In this study and before nurses’ training, the expected outcomes of education was sent to nurses via SMS to their mobile phones. The messages were sent to them for a week. Then, the content of the training program, including its necessity, importance, and methods of maintaining a semi-upright position in MVPs was provided to each individual during a 2-hour lecture and using prop.

Also during training, the performance of nurses were observed and in the event of not observing semi-upright position in MVPs, they were retrained. After viewing the observance of two semi-upright position for each nurse, the researchers were ensured of the training content received by every nurses. It should be noted that in this study, the performance of nurses with regard to observing semi-upright

position in MVPs was investigated using a prepared checklist before and after training (two weeks after the course).

Data analysis

Data analysis was carried out by SPSS V.20 and using descriptive and inferential statistics such as Kolmogorov-Smirnov, Chi-square, and Wilcoxon tests. P-values less than 0.05 were considered as statistically significant.

3. Results

Results of the demographic data of nurses showed that 70.4% of participating nurses in the study were female and 29.6% were males and most nurses (96.3%) had a bachelor’s degree and a few of them (3.7%) had master’s degree. Their Mean (\pm SD) work experience was 3.89 (2.02) years and study participants had mostly (18.5%) two or three years of work experience and the least work experience among the study participating nurses was 3.7%. Most participating nurses in the study (25.9%) had one and two years experience of working in the ICU and the minimum work experience of study participants in the ICU was 8 months (3.7%) and the Mean (\pm SD) work experience was 2.77(1.72) years. In terms of the working shift, 14.8% of nurses participating in the study was working on the night shift, 7.4% in the night-evening shift and 77.8% of them worked with rotating shifts. Mean (\pm SD) weekly working hours of nurses participating in the study was 55.97(10.55) weeks. The Mean (\pm SD) hours of retraining nurses participating in the study was 6.37(6.42) hours and most nurses did

Table 1. Examining and comparing nurses’ knowledge before and after the OBE to maintain a semi-upright position in mechanically ventilated patients (n=990)

Knowledge Score	Before Intervention	After Intervention
Mean \pm SD	47.41 \pm 23.63	89.63 \pm 10.18
Wilcoxon test	P < 0.001	

SD= Standard Deviation

Table 2. Comparison of nurses based on status of patients under mechanical ventilation, before and after the training

	Status Before Training			Status After Training		
	Appropriate	Inappropriate	Total	Appropriate	Inappropriate	Total
No.	339	193	532	365	93	458
%	63.7	36.3	100.0	79.7	20.3	100.0
Chi-square	df = 1, P < 0.001					

not participate in refresher courses (40.7%). The Mean (\pm SD) age of participating nurses was 28(2.73) years which the most frequent age range belonged to 26-28 years (48.1%) and the least to 32-35 years (11.1%).

Results showed that the Mean (\pm SD) score of nurses was 47.41(23.63) and 89.63(10.18) before and after training, respectively. The results of the Kolmogorov-Smirnov test also showed that the distribution of knowledge of nurses after the training was not normal (before training $P = 0.137$ and $P = 0.003$, $P < 0.05$ is significant). Therefore, comparing scores before and after the nonparametric Wilcoxon test showed that P-value was < 0.001 . Therefore there is a significant relationship between the scores of nurses participating in the present study before and after OBE to maintain a semi-upright position in MVPs (Table 1).

Results of the Chi-square test (Table 2) on 990 patients showed that before nursing training, 63.7% of the patients had a good position and 36.3% had inappropriate position, but after training, 79.7% had good condition and 20.3% had inappropriate condition in terms of position. Therefore, there was a significant difference between patients in terms of the suitable position before and after nurses' training which confirms the effectiveness of training on the performance of nurses in terms of applying semi-upright position in MVPs ($P < 0.001$).

4. Discussion

Based on the study findings, the Mean (\pm SD) scores of nurses before and after the OBE about maintaining a semi-upright position in mechanically ventilated patients were 47.41(23.63) and 89.63(10.18), respectively, reflecting poor knowledge about maintaining a semi-upright position in patients under mechanical ventilation. Comparing the scores of nurses before and after the OBE to maintain a semi-upright position in MVPs showed that the nurses' knowledge before and after the OBE were significantly different. Thus, the nurses' knowledge improved after training.

Based on the findings of this study regarding the position of MVPs during two weeks before nurses' training showed that 63.7% of the patients had appropriate position and 36.3% an inappropriate position. These results suggest that before training, a significant number of patients did not have a semi-upright position which shows the poor performance of nurses in providing services. That refers to lack of knowledge of nurses regarding the importance of semi-upright position in MVPs.

Also, regarding the position of MVPs during two weeks after training showed that 79.7% of them were in good condition and 20.3% of them were in unsuitable position. After conducting the study, the frequency of semi-upright position in patients was remarkable and a large number of patients observed this condition which refers to promotion of the knowledge of nurses and its effectiveness on their performance.

Comparing semi-upright position in MVPs before and after training nurses for two weeks, based on the present study objectives, confirms that frequency of appropriate position of the patients has increased from 63.7% before the intervention to 79.7% after the intervention. There was a significant difference between patients in terms of the ideal position, before and after carrying out nurses' training, which confirms the effectiveness of training on the performance of nurses. These results support that outcomes-based education has affected nurses' performance through increasing their knowledge and more patients were put in semi-upright position. According to the above-mentioned results, nurses lacked enough knowledge with regard to maintaining semi-upright position in MVPs before the OBE. However, after outcome-based education, their knowledge regarding maintaining a semi-sitting position in MVPs increased.

The overall objective of the current study was to determine the effect of OBE to maintain a semi-upright position in MVPs. According to what has been mentioned, outcome-based education has an effect on maintaining semi-upright position in MVPs through increasing nurses' knowledge and consequently on their better performance. The results of the present study were consistent with (Alaee et al., 2012) study in terms of effectiveness of OBE. They acknowledged the positive impact of education and training on the performance of nurses in caring patients under mechanical ventilation in ICUs. The results of the present study was also similar to the study findings of (Valizadeh et al. 2009) regarding the effectiveness of the outcomes-based education in promoting the competency of nursing students.

The current research is similar to a study regarding the effectiveness of outcome-based education on nursing performance and improving the quality of nursing care (Emamzadeh Ghasemi, Vanaki & Memarian 2004). The present study also supported the results of Haward (2006) study regarding the fact that the OBE model forms a framework out of the clinical competence concept in which nurses could apply high quality treatments and caregiving to all patients in terms of performance and decision-making and play their specialized, support-

ive, therapeutic, and managerial role in a more suitable quality than before (Haward 2006).

In addition, Kirk, Carlisle and Luker (1997) as well as Daly and Pamela (1992) pointed out that OBE would lead to a qualitative transformation in the level of knowledge and clinical competency of the student and the mentor that is consistent with this study.

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Conflict of Interest

The authors declared no conflict of interests.

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