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Self-care Behaviors and Influential Factors among Nurses Working in the Hospitals of Tehran

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ABSTRACT

Background: Nurses' self-care assessment and elimination of obstacles with appropriate interventions will have a great impact on their own health as well as the recipients of health services. This study was designed to evaluate self-care status among nurses in selected hospitals in Tehran, Iran.

Methods: This cross-sectional study was carried out on 310 nurses working in Tehran University of Medical Sciences hospitals. Data were collected by a questionnaire with 70 questions that was conducted to evaluate the health level in five dimensions. Data were analyzed by using the statistical tests of MANOVA and Pearson's correlation.

Results: The average scores of nurses' self-care in men and women were 244.1 and 245.3, respectively. The highest average score was for the supportive relationships dimension. There was a significant relationship between gender and self-care dimensions (P-value = 0.077). The average scores of self-care for nurses working in the emergency department, general department, surgical department, intensive care unit, and other sectors were 238.5, 247, 240.6, 245.6 and 251.1, respectively. There was a positive relation between supportive relationships dimension, age, and years of employment. In addition, there was a negative relation between the number of children and supportive relationships dimension (P-value < 0.05).

Conclusion: This study showed that self-care among nurses in the hospitals of Tehran University of Medical Sciences was moderately high, in a good and acceptable situation. However, there were poor scores in some areas and further study of the nurses' self-care and its promoting strategies is still required.

Keywords: Self-care, Nurses, Hospital, Iran

Citation

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Introduction

Health system improvement is one of the most important areas of sustainable development, which is directly related to people's health status; and it has the responsibility for maintaining their health. This requires healthy and motivated human resources, especially nurses as a major group of healthcare providers, who have a large influence on the quality of services delivered to patients. To achieve maximum performance in such a sensitive job, healthy nurses are requisite (1).Human resources are fromthe most important foundations of health system (2).As nursesstand as a large proportion of healthcare providers in Iran, they are at the forefront of providing health services. They work in regularly scheduled shifts in direct contact with patients; and they are susceptible to physical exhaustion and exposed to psychological stress more than any other similar professions (3, 4). They play an important role in the health of patient, families, and society; nevertheless, their own health has been ignored over the years (5).

Self-care is a new perspective on health care, and it refers to activities of maintaining health that is done by people themselves. Although health is already known as a human right, in fact, it is a personal responsibility (6). Self-care is a basic concept in health care and a method to protect, restore, and improve people's health and welfare (7). Humans need to maintain their health.The lack or unavailability of health facilities and increasing medical expenses are some important reasons for paying more attention to this concept (8).

Learning self-care behaviors can lead a person to a healthy life according to his// herempowermentself- control and care. Self-care learning can help people to have control over their life and increase adaptation totheir specific health requirements to enhance the quality of life. Self-care behaviors can improve the ability to perform daily activities better, they can also maintainindependence tohave better social functions,and to live more confidentwhich can lead to a better quality of life (9).

Job is one of the most important factors that can affect health due to exposure to various risk factors threatening health (10). Some of the health risk factors in nursing job include irregular diet, long working hours, high levels of stress, risk factors associated with obesity, irregular working shifts, dealing with the patients complains and suffering, exposure to dangerous diagnostic and therapeutic chemicals, radiations and infectious diseases (11). It is obvious that nurses' health status has an undeniable impact on patient's healthcare. Therefore, attempts to measure their performance in the area of self-care and accordingly,to provide appropriate interventions, can profoundly affect the health of nurses and their patients.

In Iran, most of the studies that have been conducted on the self-careof the patients with a chronic illness such as diabetes or hypertension, and few studies have focused on nurses' self-care. According to the findings of the studies, appropriate interventions can increase nursing outputs and improve service delivery (5,7,9,). This study was conducted to investigate the self-care behaviors of nurses in selected hospitals of Tehran University of Medical Sciences, Iranand also to identify theaffecting factors.

Materials and Methods

An analytical cross-sectional study was conducted among nurses working in five general and specialized hospitals in Tehran University of Medical Sciences of Iran in 2016. The study population consisted of about 1,600 nurses in Tehran University of Medical Sciences and the sample size was estimated to be 310 people using Krejcie and Morgan table. All the hospitals in the university were considered as clusters and some of them were selected randomly. Following the selection of hospitals, nurses were also selected by simple random sampling method from different hospital departments.

Tools for Data Collection and Data Analysis

The self-assessment questionnaire by David Ervine (http://www.davidirvine.com) was used in

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this study which included 75 questions in five areas of physical health, mental health, ability to prioritize, personal management, supportive relationships, and being effective inlife. The demographic characteristics were also included. Thereliability and validity of the questionnaire have been approved by its provider.

The questionnaire was translated to Persian and then retranslated into English to ensure its customization. In addition, its face validity and content validity wereconsidered and confirmed by using 10 expert opinions. Cronbach's alpha coefficient was 0.94; and thus, it confirmed the internal consistency of the questionnaire.

After localizing the questionnaire, the final version was distributed among participantsto measurefiveaspects ofhealth, containing 70 items and 14questions in each dimension.

Participants were asked to rate their responses on the Likert scale (1-5); so that, a questionnaire could be scored 70-350.The total scores of self-care behaviors were classified into five groups (less than 126, 126-182, 182-238, 238-294, and above 294) which were considered as "very bad"to "very good"self-care status.

Statistical analysis

Pearson's coefficient was used to analyze the correlation between self-care score and continuous independent quantitative variables. Multivariate analyses of variance (MANOVA) were used to consider the relationship between various areas of self-care and independent variables, and ANOVA was used to test self-care total score in subgroup's differences. All analyses were performed using SPSS software v.22.

Ethics approval

Ethical approval was obtained from the Ethics Committee of Tehran University of Medical Sciences. Moreover, informed consent was obtained before completing the questionnaires.

Results

A sample of 310 nurses participated in the study (24 % male and 76 % female). The mean age of the sample population was 32.6 ± 8.1 years (19-62 years). Their work experience in nursing varied from 2 months to 28 years. Table 1 describes the demographic characteristics of the study population.

Self-care scores

The mean score for participants' self-care status was 243.2 ± 35.7. The lowest mean self-care score was in physical and nutritional health, and mental health score followed it. Supportive relationships obtained the highest average score (see Table 2 and figure 1). The results showed that the lowest score in various aspects of study was related to the field of physical health and nutrition with 16 points and the highest point was in supportive relationships with 70 points.

Self-care score and gender

The average self-care score in male and female nurses were 244.1 and 245.3, respectively (Table 2). As Box test was not significant, there was the homogeneity of variance / covariance matrices (Box's M = 0.82 and P-value = 0.82). Wilks Lambda test results showed that gender can significantly affect the combination of self-care variables at the confidence level of 90 % (Wilks, F(2.01) = 0.968, P-value = 0.077).

Multivariate analysis of variance test revealed that there were no significant differences between gender and mean score of various self-care areas except in physical heath (F = 4.44, P-value = 0.036).

Self-care score and marital status

The average self-care score in single, married, and divorced nurses were 243.7, 246.1, and 246.7, respectively (Table 2). As Box test was not significant, there was the homogeneity of variance/covariance matrices (Box's M = 20.3 and p-value = 0.18). Wilks Lambda test results revealed that marital status cannot affect significantly on the combination of self-care areas at the confidence level of 95 % (Wilks, F (0.88) = 0.972, P-value = 0.55); hence, none of the mean scores in self-care areas were significant in marital status.

Self-care score and Body Mass Index (BMI)

With increasing BMI, the average total self-care score declined as well as each of its areas. The average total self-care score in thin nurses was 251.1 which is remarkably higher than obese nurses

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(236.7) (Table 2). No significant difference was observed among the mean scores of self-care in different BMI groups (P-Value = 0.508). As the "supportive relationships area" had the highest mean difference score in BMI subgroups, it was the only area with a significant mean score difference in BMI subgroups at the confidence level of 90 % (P-value = 0.072).

Self-care score and hospitaldepartments

The average score of self-care in nurses working in the emergency department was 238.5, in internal medical sector 247.0, in surgery sector 240.6, in ICU 245.6 and in other sectors 251.1 (Table 2); therefore, multivariate analysis did not confirm any significant difference between them (P-value = 0.393). Wilks Lambda test showed that working in different wards does not havea significant effect on the variable's combination of self-care areas (Wilks, F (0.82) = 0.946, P-Value = 0.689); and none of the self-care mean scores in various areas are statistically significant in different hospitaldepartments.

Total Self-care score and "supportive relationshipsscore" with "number of children in married nurses" had a negative significant correlation (r = - 0.178 and 0.229), although the correlation was week.

There was a significant negative correlation between "supportive relationships score" and "age";and the positive correlation between "supportive relationships score" and "work experience" (Table 3).

Table1. Demographic variables in nurses working in the selected hospitals

Variable	N (%)
Mean age, year (SD)	
male	31.87 (8.8)
female	32.9 (7.9)
Marital status	
single	140(45.2)
married	167(53.8)
divorced	3(1)
Children in married nurses	
Zero	54(34)
Two	44(27.7)
Three	53(33.3)
Four or five	8(5.0)
BMI	
BMI < 20	32(10.7)
20 ≤ BMI < 25	170(56.9)
25 ≤ BMI < 30	78(26.1)
30 ≤ BMI < 35	17(5.7)
BMI > 35	2(0.7)
Working hospital's department	
Emergency department	22(7.2)
Internal department	35(11.5)
Surgery department	82(27)
ICU	116(38.2)
Others	49(16.1)
Mean nursing experience, year (SD)	8.8(7.6)

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Table2. Self-care status of nurses in selected hospitals in each domain

	Physical health and nutrition; Mean ± SD	Mental health; Mean ± SD	Ability to prioritize and manage personnel; Mean ± SD	Supportive relationships; Mean ± SD	Effectiveness of life; Mean ± SD	Total score; Mean ± SD
Gender						
Male	45.1 ± 9.1	48.1 ± 8.7	47.7 ± 8.2	52.5 ± 9.0	50.7 ± 9.4	244.1 ± 35.4
Female	47.4 ± 7.7	47.6 ± 7.8	48.0 ± 8.2	51.1 ± 9.1	51.3 ± 8.5	245.3 ± 32.3
Marital status						
Single	46.6 ± 8.6	47.4 ± 8.1	48.0 ± 8.2	51.1 ± 9.8	50.7 ± 8.2	243.7 ± 33.0
Married	47.1 ± 7.8	47.9 ± 8.0	47.8 ± 8.2	51.8 ± 8.4	51.4 ± 9.2	246.2 ± 33.3
Divorced	47.1 ± 7.8	47.9 ± 8.0	47.8 ± 8.2	51.8 ± 8.4	51.4 ± 9.2	246.1 ± 33.3
BMI						
Thin	49.6 ± 10.0	48.3 ± 9.4	49.3 ± 10.0	52.5 ± 10.8	51.4 ± 10.1	251.1 ± 42.2
Normal	46.7 ± 7.7	47.5 ± 7.9	48.0 ± 8.3	51.8 ± 9.2	50.7 ± 8.8	244.7 ± 33.2
Overweight	46.5 ± 7.1	48.7 ± 7.6	47.7 ± 7.8	51.8 ± 9.2	50.7 ± 8.8	244.7 ± 33.2
Obese	45.8 ± 12.0	45.7 ± 8.4	46.6 ± 6.7	49.2 ± 10.6	52.4 ± 7.6	236.7 ± 33/0
Working hospital's department						
Emergency room	46.8 ± 9.3	46.7 ± 7.3	46.7 ± 9.4	49.7 ± 8.6	48.6 ± 11.4	238.5 ± 35.6
Internal	46.6 ± 7.5	49.1 ± 6.4	48.3 ± 7.2	51.7 ± 9.2	51.4 ± 8.2	247.0 ± 28.0
Surgery	46.6 ± 7.5	49.1 ± 6.4	48.3 ± 7.2	51.7 ± 9.2	51.4 ± 8.2	247.0 ± 28.0
ICU	47.5 ± 7.1	47.5 ± 8.2	47.8 ± 7.6	51.6 ± 9.6	51.1 ± 7.9	254.6 ± 31.3
Others	47.1 ± 9.2	49.0 ± 7.5	49.8 ± 7.9	51.7 ± 7.9	53.7 ± 7.6	251.2 ± 31.4
Total	46.9 ± 8.1	47.7 ± 8.0	48.0 ± 8.2	51.6 ± 9.1	51.3 ± 8.7	243.2 ± 35.7

Table 3. Pearson's correlation coefficient between the self-care score and age, number of children in married nurses, and work experience of nurses working in the selected hospitals

	Age	Number of children in married nurses	Work experience
Physical health and nutrition	0.093	- 0.087	0.138**
Mental health	- 0.067	- 0.090	- 0.036
The ability to prioritize and manage personnel	- 0.005	- 0.146*	0.018
Supportive relationships	- 0.189***	- 0.229***	0.151***
Effectiveness of life	- 0.028	- 0.152*	- 0.004
Total score	- 0.054	- 0.178**	- 0.014

* Statistically significant at the confidence level of 90 %
** Statistically significant at the confidence level of 95 %
*** Statistically significant at the confidence level of 99 %

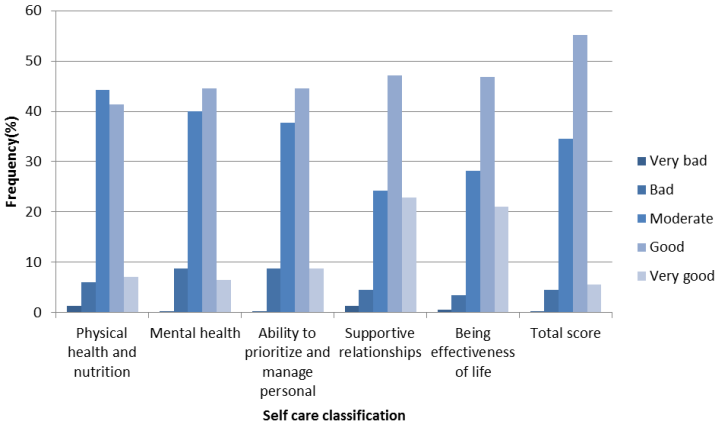


Figure1. Distribution of self-care status of nurses in selected hospitals according to their self-care classifications

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Discussion

Nursing is a stressful joband studiesindicate that nurses'job exhaustion level is high (12). Many studies have been previously conducted on patients' self-care and they havefocused less on healthy people (9, 13-24). Job group studies such as nursing are a new approach in self-care researches (12, 25-27).

Self-care encompasses various areas such as health promotion, lifestyle improvement, disease prevention and screening, symptoms assessment, health maintenance, treatment, and rehabilitation. Self-care depends on the individual's culture and status and his capacity to select and take action, and it focuses on one's controlover his/her health aspects. The main achievement of supported self-care is that individuals take the right decisions about how to use health care, select and perform an appropriate health behavior (28).Although nurses play an important role for health of their patients, their families, and society, they do not pay enough attention to improve their own health andthis is an issue of concern for health policymakers (5).

In this study, most of the participants were female (male to female nurses' ratio was about 1: 3), as expected according to national statistics which indicates that the number of female nurses is more than males. In this study, multistage random cluster sampling method resulted in the generalization of all nurses in Tehran University Medical Sciences educational hospitals. So that nurses in all age groups, gender, marital status, and other factors that may affect the status of individual self-care (e.g. number of children, etc.) were present. The age ranges of participants were between 32 and 75 years and their work experience was from 2 months to 28 years, with an average of 8.8 years; and there was an acceptable variance in other variables.

In the present study, the focus was on assessingself-care in nurses. This study did not show wide differences in various study fields; so the average score in all fields was 46-52. Summing up the results, it can be concluded that self-care status in nurses is well and above the average.

The average score of self-care in nurses was 243.2 ± 35.7, which is categorized as a good grade in five grades (from very bad to very good according to Likert grades) and it can be related to their high level of education and it isrelevant to health and their knowledge about self-care skills.

The findings of this study were in contrast to some other studies such asa study conducted in Shahroud Medical University hospitals by Darvishpoor Kakhki et al. which showed no appropriate health status in nurses and their physical pain wastheir most common complaint (10). Also, in a study carried out by Asadzandi et al (1) about the mental health status of military nurses using GHQ-28 questionnaire, it was found that 26 % of nurses had some degree of mental disorder and social dysfunction.

The mean score for self-care in male and female nurses was 244.1 and 245.3, respectively.The analysis did not confirm any significant differences based on gender in various fields except physical health and nutrition. The results of this study, in line with some previous studies (16) , highlighted that women are more conscious about their health and use more health services compared to men.

Results from some similar studies on nurse's health behaviors have revealed the significant differences between male and female nurses in various areas. A study by Heydari et al (29) found differences in health-promotingbehaviors such asphysical activity, stress management, and spiritual growth areas in men compared to women; however, they did not confirm statistically significant differencesbetweennutrition and accountability domains. However, given the low sample population of men (7 % total), the generalization of results should be cautiously considered.

The findings of this study indicated that there is notany association between total self-care score and age similarly to each domain of self-care, except supportive relations which revealed a weak but significant positive correlation; In other words, the older nurses had better score in supportive relations domain of self-care. The presentstudy has not confirmed previous research conducted in Zanjan, which indicated significant differences between age

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and all various health-promoting behaviors (29).

The results suggested that married nurses have higher self-care scores than singleand divorcednurses, which can be due to different lifestyle in Tehran. The traditional lifestyle is changing in big cities; and consequently, the nurses' lifestyle will be changedlike theothers.

In this study, married nurses had higher self-care scores in physical health and supportive relations than single and divorced nurses.

There was a negative correlation between nurses'self-care scores in various domains and their number of children. In other words, nurses who had more children received a lower score in self-care behaviors. This correlation was significant in total nurse'sself-care score and supportive relationship area at the confidence level of 95 %and inability to prioritize and manage personal and being effectiveness of life areas at the confidence level of 90 %. These results need to be interpreted with caution, because of its weak power in correlation analyses.

Initially, it was thought that duties'load and job stress in the different working department can affect nurses' score, but more analysis did not show any significant differences; although the lowest score belonged to those working in the emergency department.

The present study has not confirmed previous research on health-promoting behaviors among nurses who worked in various sectors of Tehran University of Medical Sciences hospitals in 2010. According to their study, significant differences in all various studied areas (interpersonal relations, nutrition, accountability, physical health, stress management, and spiritual improvement) and their working departments were observed (29); however, the results in that study need to be interpreted with caution, because of its poor design and implementation. Their sample size was only 110 and they used convenience sampling.

The results showed a poor positive correlation between self-care scores in physical health domain and in supportive relationships domain with nurses' work experiences. It means that the experienced nurses had higher scores in self-care, which is likely depended on other factors such as job stability, their interest to work, their compatibility with working conditions andother relatedfactors with their experience.One of the strength points in the present studywas the remarkable participation of nurses inthe considered hospitals affiliated to Tehran University of Medical Sciences. One of the limitations of this study was the low number of male participants in the study, and also due to the lack of inadequate number of participants per department, the results cannot be generalized by the departments.

Conclusion

Despite thestrong emphasis on self-care in recent yearsforhealth-care providers, especially for nurses as the largest group, it has been neglected in recent studies. This paper has clearly shown that self-care behavioramong nurses working in teaching hospitals of Tehran University of Medical Sciencesis well within acceptable scores. However, there are poor scores in some of the areas, whichfurther studies are needed.

From the results, it can be concluded that there are evident associations between ages, number of children in married nurses, and work experience with self-care score, and no significant association between gender, marital status, hospital sector employed, BMI score and self-care score, which can be confirmed based on high power of the study.

Further study of the nurses' self-care and its promoting strategies is still required. Attentionto sufficient human resources and nursing job difficulties, psychology and family counseling programs, life skills and problem solving training, increasingtheir income commensurate with cost of living, professional nurses' participation in decision-making, and ultimately allocation of welfare funds for leisure features or sports facilities canimprove practicing self-care topromotethe physical and mental health.

A comprehensive national program is needed to educate self-care and empower hospital staffs especiallynurses, who are responsible for practicing difficult and sensitive tasks. Hospital executives can design and perform such courses and workshops to

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promote the quality of lifeof their staff.

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Conflict of interests

The authors declared no conflict of interests.

Author's Contributions

Ahmadi B, Rafiemanesh H and Mehtarpour M designed and conducted research; All authors analyzed, interpreted, wrote and edited data; Shamlou R, Kor Y, and Letafat Nezhad M collected data and also synthesized the first draft of manuscript. All authors read and approved the final manuscript.

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