

## Studying the Effect of Nurses' Health-Promoting Behaviors on Nursing Care Quality

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### Abstract

One of the factors affecting nursing care quality is the ability of nurses to have more control over improving and maintaining their health. This research was conducted to specify the relationship between health-promoting behaviors and nursing care quality. The present research was a cross-sectional descriptive-correlation study. The data were provided using a demographic questionnaire, a health-promoting behaviors questionnaire (HPLP-II), and a researcher-made questionnaire of the nursing care quality (from the patient's point of view). The obtained data was analyzed by SPSS software version 23. From the viewpoint of more than half of the people, the nursing care quality was good. The highest average score was reported in the "responsibility" dimension and the lowest average score was reported in the "physical activity" dimension. The total average score of the quality of nursing care was 3.10 ( $\pm 0.45$ ). The highest average score was reported in the field of "nursing ethics" and the lowest average score was reported in the field of "patient education". Based on the results, health-promoting behaviors just in the nutrition dimension had a statistically significant correlation with the nursing care quality in the nursing ethics dimension which was a negative correlation ( $p = 0.027$ ). Based on the findings, between health-promoting behaviors in nurses and quality was no significant relationship with nursing care from the patient's point of view, but in general, the nursing care quality was evaluated as good. Considering the low score of physical activity of nurses and patient education, it is recommended to implement educational programs and emphasize the importance of these things.

**Keywords:** Nurses, Health-promoting behaviors, Nursing care, Health

### Introduction

Quality was considered the most important issue in the healthcare field during the 1940s and 1950s. Dealing with quality and trying to improve quality and evaluate it in the health system is considered an industry [1-3]. Care is considered a basic component in the field of healthcare services. Among all the care provided in medical environments, nursing care is more important [4-7]. For this reason, the provision of care and services with appropriate quality has been proposed as a priority in the health care service system, especially in the field of nursing services [8, 9] and nurses are the key members of quality improvement in the field of care provision [10-12]. In addition, from the legal and ethical point of view, they should be responsible for the quality of care provided [13, 14].

In addition, the services provided by nurses should be effective, efficient, and economical [15, 16]. In other words, the nursing care quality is the response of the nurse to the psychological, physical, social, emotional, and spiritual requirements of the patients, so that they return to their healthy and normal lives and the satisfaction of the nurses

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**Received:** 27 September 2021; **Revised:** 29 November 2021;

**Accepted:** 02 December 2021

**How to Cite This Article:** Hwang Y, Oh J. Studying the Effect of Nurses' Health-Promoting Behaviors on Nursing Care Quality. *J Integr Nurs Palliat Care*. 2021;2(2):14-21. <https://doi.org/10.51847/q4VUAgnfk>

and patients is gained [17-19]. The first and most important factor in improving the quality of care is quality measurement, and the most valuable quality measurement is the assessment of nurses' activities in providing nursing care to patients [20, 21]. The main goal of improving quality in clinical fields is to provide clinical care to clients in the best possible way. If this goal is realized, its results will not only include the patients but also care providers and the profession itself [22-24].

Nurses face many stressful factors such as overwork, personal conflicts, and lack of support in their daily work environment, which can affect their general health [25]. The decline in nurses' health is related to accidents and medical errors [26, 27]. Thus, it is necessary to pay attention to health promotion in medical centers, which should be considered in the daily plans of employees [28]. According to Pender's theory, health-promoting behaviors include any activity that is done to maintain or increase the level of health and self-actualization of individuals or groups [29] and includes responsibility, health, physical activity, spiritual growth, interpersonal relationships, nutrition, and stress control [30]. The emergence of health-enhancing behaviors can bring significant potential in improving people's health and productivity [31].

Based on the study of Cho *et al.* [10], who examined the health-promoting behaviors of nurses, it was shown that nurses are at a low level in terms of physical activity, nutrition, responsibility, and stress. However, in the field of spiritual growth and interpersonal relationships, they are at an average level [10]. Nurses must pay a lot of attention to the ways and behaviors that improve their lives and health. On the other hand, nurses are directly and indirectly responsible for patients, and the realization of this can be achieved not only through science, correct ethical methods, and communication with the patient, but also through the nurse's health, and it requires that nurses have the ability and have sufficient physical health [32, 33].

It should be noted that the concepts of work and life have the greatest and strongest connection with the individual and society, and creating interaction between them is of great value and importance [34, 35]. Due to the vital role of nurses and the impact of the scientific progress of nursing, it is not possible to provide high-quality nursing services without getting to know new techniques. One of the basic measures to improve the quality of care is to determine what effects a person's health can have on his work, and if it is by the principles and needs of nurses, will we see an improvement in the quality of nursing care or not?

According to the review of studies related to this research, all these studies examined the quality of nursing care and health-promoting behaviors in nurses separately, and there was no study on the relationship between the two. Improving the quality of nursing care is one of the most challenging issues in recent years. On the other hand, finding the influential and related factors is another concern of these years, and the identification of these factors can be used as a basis for designing effective interventions to improve care quality. Therefore, this study was conducted to determine the relationship between nurses' health-promoting behaviors and some of their characteristics with nursing care quality from the patient's perspective of nurses working in hospitals.

## Materials and Methods

This cross-sectional descriptive-correlation research was done on working nurses and patients under their supervision. Entry criteria were considered for nurses and patients to participate in the research. The inclusion criteria for nurses included working in general departments, having at least two years of experience, and not suffering from a known physical or mental illness (self-reported). The following criteria were considered for patients to be included in the study: at least 18 years old, the patient is literate, the patient does not have communication problems such as blindness, deafness, inability to speak, and mental disorders under the care of a nurse for at least three days. Selection of nurses was done by quota random sampling method. The number of samples was determined with 95% confidence and 0.05 variance, and the number of samples was 200 people. For each nurse, 3 patients were considered, and a total of 600 patients were selected and studied by available sampling method.

The tool used in this research consisted of three parts. The first part of the demographic questionnaire, which is related to the demographic data of the samples and includes questions about age, gender, marital status, body mass index, educational qualification, shift work, type of department, work experience, type of illness, number of days in the hospital and the history of previous hospitalizations.

The second part was the Health Promoting Behaviors Questionnaire (HPLP-II). This tool is derived from Pender's health promotion model. Walker *et al.* in Spain designed it in 1990, which measures 52 health-promoting behaviors and provides an evaluation of these behaviors. The questions of this questionnaire are classified into 6 dimensions, which include relationships between individuals (5 questions), stress management (8 questions),

spiritual growth (11 questions), nutrition (9 questions), physical activity (7 questions), and responsibility (12 questions). Each question had 4 answers, and each question was scored on a Likert scale of never (1 point), sometimes (2 points), often (3 points), and always (4 points). The range of total scores of health-promoting behaviors was a minimum of 52 and a maximum of 208. It should be noted that the reliability of the above instrument was re-calculated using Cronbach's alpha in this study, and the Cronbach's alpha coefficient was respectively for the dimensions of responsibility (0.836), physical activity (0.902), stress management (0.793) and spiritual growth (0.9), interpersonal relationships (0.833), nutrition (0.802), and the total instrument of health-promoting behaviors (0.933) were obtained.

The third part of the researcher-made questionnaire was the quality of nursing care from the patient's point of view. This questionnaire is taken from the study of the author and his colleagues on the correlation between the quality of care behaviors of nursing students and patients' satisfaction. This questionnaire is used to measure the quality of nursing care from the patient's point of view, it is a self-made questionnaire and has 26 items in 4 subscales of professional knowledge and skills (8 items), communication with the patient (6 items), nursing ethics (6 items), and patient education (6 items), and each question is rated on a Likert scale (most of the time = 4 to never = 1). The minimum score of this questionnaire is 26 and the maximum score is 104. It should be remembered that the researcher used content validity to determine the validity of the questionnaire. In this way, the prepared questionnaire was given to 10 expert faculty members in this field, and after receiving their suggestions, the necessary amendments were made, to determine the reliability of this tool, Cronbach's alpha calculation method was used in this study. Cronbach's alpha coefficient was obtained for the fields of patient communication (0.825), patient education (0.797), nursing ethics (0.833), professional knowledge and skills (0.853), and the total care quality instrument (0.912), respectively.

The researcher started his sampling from the general departments (except the special emergency departments and operating rooms). After obtaining informed consent, data was collected from the participants within two months, and to avoid any bias, questionnaires were given to nurses and patients in all three shifts, morning, evening, and night.

Finally, the findings were analyzed with the help of SPSS software version 23 in two parts, inferential statistics and descriptive statistics. In the descriptive statistics section, a frequency distribution table was used for qualitative variables, minimum and background numerical indices, and mean, and standard deviation for quantitative research variables. In the inferential statistics section, Pearson's correlation coefficient test was used to investigate the relationship between nurses' health-promoting behaviors and nursing care quality.

## Results and Discussion

200 nurses knowingly participated in this research, and their characteristics are shown in **Table 1**.

**Table 1.** Frequency distribution of personal characteristics of nurses.

Personal profile of the nurse		Frequency (percentage)	Quality of nursing care	
			Mean $\pm$ Standard deviation	Test result
Gender	Female	173 (86.5%)	80.85 $\pm$ 7.4	P = 0.884*
	Male	27 (13.5%)	80.62 $\pm$ 7.11	
Education	BSc	185 (92.5%)	80.75 $\pm$ 7.46	P = 0.662*
	MSc	15 (7.5%)	81.62 $\pm$ 5.75	
Shift work	Fixed	44 (22%)	78.31 $\pm$ 7.10	P = 0.01*
	In Circulation	156 (78%)	81.52 $\pm$ 7.27	
Section type	Internal	111 (55.5%)	80.6 $\pm$ 7.85	P = 0.636*
	Surgery	89 (44.5%)	81.09 $\pm$ 6.68	
Body mass index	Skinny	14 (7%)	81.02 $\pm$ 8.16	P = 0.974**
	Normal	121 (60.5%)	80.88 $\pm$ 7.07	
	Overweight	65 (32.5%)	80.65 $\pm$ 7.76	

Age (years)	Mean $\pm$ Standard deviation	33.80 $\pm$ 8.33	-	P = 0.908***
	Minimum-Maximum	24.0 – 61.0		
Work experience (years)	Mean $\pm$ Standard deviation	9.37 $\pm$ 7.09	-	P = 0.905
	Minimum-Maximum	2.0 - 30.0		

\*\*\*Pearson's correlation coefficient, \*\*Analysis of variance, \*Independent t-test

Next, 600 patients were also given a questionnaire and the findings of their characteristics are listed in **Table 2**.

**Table 2.** Frequency distribution of patient characteristics in the hospital.

Individual characteristics of patients		Frequency (Percentage)
Gender	Female	359 (59.8%)
	Male	241 (40.2%)
Marital status	Single	113 (18.8%)
	Married	487 (81.2%)
Education level	Elementary	170 (28.3%)
	High school	178 (29.7%)
	Diploma	173 (28.8%)
	University	79 (13.2%)
Type of Disease	Cancer	78 (13%)
	Nerves	47 (7.8%)
	Surgery	251 (41.8%)
	Internal	224 (37.4%)
Hospitalization days	3-6	352 (59.40%)
	7-13	171 (28.32%)
	$\geq$ 14	77 (12.28%)
Age (years)	Mean $\pm$ Standard deviation	47.77 $\pm$ 16.12
	Minimum-Maximum	18-84

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The dimensions of nurses' health-enhancing behaviors, which include responsibility, physical activity, stress management, spiritual growth, interpersonal relationships, and nutrition, were investigated and the comparison of scores was calculated based on 1-4 Likert. The results showed that the "responsibility" dimension of nurses with an average of 2.89 had the highest score and the "physical activity" dimension had the lowest score with an average of 1.89 among other dimensions (**Table 3**).

**Table 3.** The central indicators of health-promoting behaviors and the nursing care quality and their dimensions in nurses.

Central indicators		Minimum	Maximum	Mean	Standard deviation
Health-promoting behaviors and their areas	Responsibility	16	48	34.74	6.19
	Physical activity	7	28	13.25	5.07
	Stress management	7	32	15.16	4.85
	Spiritual growth	11	44	30.11	6.75
	Interpersonal relationships	7	20	13.95	3.21
	Nutrition	9	36	21.70	5.14
	Health-promoting behaviors	64	189	128.93	22.45

The quality of nursing care and its dimensions	Communication with the patient	9	24	18.50	3.39
	Teaching the patient	6	24	17.28	4.09
	Nursing ethics	9	24	19.64	3.13
	Professional knowledge and skills	12	32	25.38	3.90
	Quality of nursing care	39	104	80.82	11.88

Finally, from the analysis of the obtained findings, it was concluded that the health-promoting behaviors only in the nutrition dimension had a statistically significant correlation with nursing care quality in the nursing ethics dimension which was a negative correlation ( $p = 0.027$ ). From other findings, the total score of nurses' health-promoting behaviors was  $93.128 \pm 45.22$ , which was higher than the average score of the tool used in this research. The quality of nursing care from the patient's point of view was evaluated as good. In general, no statistically significant relationship was found between nursing care quality and nursing health-promoting behaviors (Table 4).

**Table 4.** Correlation of nurses' health-promoting behaviors with the nursing care quality in nurses.

Health-promoting behaviors and their dimensions	Quality of nursing care
Accountability	P = 0.667 r = 0.031
Physical activity	P = 0.945 r = - 0.005
Stress management	P = 0.477 r = -0.051
Spiritual growth	P = 0.217 r = -0.088
Interpersonal relationships	P = 0.217 r = -0.088
Nutrition	P = 0.122 r = -0.110
Health-promoting behaviors	P = 0.405 r = -0.059

To study the effect of all variables on the quality of nursing care, the multiple linear regression model was used using the Enter method. Before estimating the model, the normality of the dependent variable (that is, the quality of nursing care) was checked using the Kolmogorov-Smirnov test, and according to the significant value, the normality of this variable was confirmed. The assumption of independence of model errors was confirmed using Durbin Watson's statistic (Durbin Watson = 1.737). The assumption of non-collinearity between the independent variables of the model was also confirmed according to the values of the variance inflation factor reported in Table 5. As can be seen in Table 5, only the work shift variable was significant in the regression model ( $P = 0.018$ ) and none of the other variables were significant in the model.

**Table 5.** Multiple linear regression of factors affecting the quality of nursing care.

Independent variables	Model coefficient	Standard coefficient	Test statistics	Significant level	Variance inflation factor
Work shift (rotating reference category)	-3.013	-0.170	-2.381	0.018	1.037
Accountability	0.121	0.102	1.176	0.241	1.529
Physical activity	0.047	0.032	0.390	0.697	1.404
Stress management	-0.033	-0.022	-0.229	0.819	1.877
Spiritual growth	-0.012	-0.011	-0.110	0.913	2.034
Interpersonal relationships	-0.182	-0.080	-0.910	0.364	1.554
Nutrition	-0.124	-0.087	-0.983	0.327	1.588

This research was done with the general purpose of determining the relationship between the quality of nursing care from the patient's point of view and the health-promoting behaviors of working nurses. The findings of this study showed that the average score obtained from the examination of health-promoting behaviors in nurses is 128.93, which is higher than the average score for health-promoting behaviors. According to the results obtained from the scores obtained from the sub-scales of health-promoting behaviors in nurses, the highest score was reported in the "responsibility" dimension with an average of 2.89, and the lowest score was reported in the "physical activity" dimension with an average of 1.89.

In a study conducted by Nukbet and Esin [36] in Turkey, the highest score obtained from the analysis of health-promoting behaviors in nurses was related to spiritual growth, and the lowest score was related to the physical dimension, which is similar to the findings of the current study. In this research, it has been shown that the amount of physical activity of nurses depends on their understanding of exercise, social support, and motivation. It can be mentioned that the results of performing health-promoting behaviors in nurses were reported to be lower than expected, and various factors such as lack of enough time, low income, and having children were effective in the results obtained [36].

It is necessary to remember that all the studies mentioned in the discussion to investigate health-promoting behaviors in nurses, similar to the above study, have used the international questionnaire of health-promoting behaviors, which is derived from Pender's model. The goal of the researcher was only to use the questionnaire derived from Pender's model. According to the results of this study, the quality of nursing care from the patient's point of view was evaluated as good. It should be noted that in this study, using the nursing care quality questionnaire (from the patient's point of view), which was developed by a researcher, the quality of nursing care was checked, and the highest average score obtained belonged to the dimension of nursing ethics and the lowest average score obtained related to Next was teaching the patient.

In line with the study, we can refer to the study by Cho *et al.* [10] that investigated the relationship between the nursing work environment, nursing care quality, and health-promoting behaviors. The relationship between three independent variables has been measured and the results have shown that if nurses in their work environment have sufficient manpower, appropriate resources, and the support of responsible managers, they will give more importance to a healthy lifestyle and improve their health level. Finally, it affects the performance of nursing work. Chu and his colleagues concluded that the relationship between the quality of nursing care and the lifestyle of nurses depends on their support in the work environment, which is in line with the study of Kowitlawkul *et al.* [37].

A study by Kowitlawkul *et al.* [37] showed that nurses are still satisfied with their jobs despite spending more time at work compared to their lives. If they have the support of their family members in the family environment and the support of their colleagues, officials, and managers in the work environment, it can better help the individual adapt to stress and increase the quality of life of nurses. It seems that the conditions of the work environment and the support provided play a significant role in motivating nurses to follow a healthy lifestyle and ultimately perform better in the work environment [37].

## Conclusion

In this study, for the first time, the relationship between health-promoting behaviors in nurses and nursing care quality was studied. The results showed that there is no significant relationship between nursing care quality and health-promoting behaviors. This means that if a nurse follows a healthy lifestyle in her personal life and gets a good grade in this field, she will not necessarily get a good grade when evaluating the quality of nursing care of her patient in the workplace. It should be noted that, in general, nursing care quality was evaluated as good by the patients in this study. In the continuation of the investigations from the above research, we concluded that the health-promoting behaviors only in the dimension of nutrition had a statistically significant correlation with nursing care quality in the dimension of nursing ethics, and this correlation was negative. In general, no statistically significant correlation was found between the quality of nursing care and health-promoting behaviors in nurses. In addition, from the correlation between the demographic characteristics of nurses and the quality of nursing care, it was found that the quality of nursing care had a significant relationship only with nurses' shift work. This means that the quality of nursing care in nurses who had rotating shifts was higher than those who worked in fixed shifts. This issue can be indicative of the fact that these nurses spend more time with their patients at different hours of the day and night, so they can better understand their needs and provide appropriate solutions to solve them. This issue is effective in improving the quality of nursing care and increasing patient satisfaction, which is the ultimate goal of nursing. Considering the low level of physical activity among nurses, it is necessary to implement health education programs with an emphasis on physical activity among them. In addition,

considering that in the examination of the quality of nursing care, the area of patient education received the lowest score, it is necessary to take measures to remove the existing obstacles and upgrade the necessary facilities to increase the provision of high-quality nursing care. In this regard, it is necessary to devote more time to training and stressing the importance of this issue and its effect in accelerating the healing process and reducing complications.

**Acknowledgments:** None.

**Conflict of interest:** None.

**Financial support:** None.

**Ethics statement:** None.

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