

Studying the Relationship between Professional Participation and the Quality of Nursing Care in Intensive Care Units

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Abstract

Professional participation has been proposed as a vital factor in the development of quality and safe care, but it has been addressed in a few studies. Therefore, the current study was done to investigate the relationship between professional participation and the quality of care of nurses working in intensive care units. This cross-sectional study was conducted on 310 nurses working in intensive care units. The data collection tool included the professional participation subscale from Rivaz *et al.*'s nursing professional practice environment questionnaire and the nursing care quality scale by Koi *et al.* $P < 0.05$ was considered as a significant level. The average score of professional participation subscale was 20.47 ± 5.04 and the average score of nursing care quality was 135.94 ± 18.20 . There was a significant and direct relationship between professional participation and the quality of nursing care ($P < 0.001$, $r = 0.62$). The findings of the multivariate regression model revealed that the variable of nurses' professional participation explained the dimension of ethical behaviors ($P < 0.001$, $\beta = 0.39$) more than other aspects of nursing care quality, 0.39 and in total the professional participation variable predicted 52% of changes in the quality of nursing care. According to the obtained results, due to the significant direct relationship between professional participation and the quality of nursing care, it is necessary to carry out educational planning with an emphasis on the ethical values of the nursing profession to improve the ability of nurses in the field of professional participation and the quality of nursing care.

Keywords: Professional participation, Nursing care, Intensive care units, Nurses

Introduction

The intensive care unit (ICU) is a stressful and complex work environment that requires the speed of nurses' actions in patient care because of the critical nature of hospitalized people, advanced equipment, and devices utilized in the department. The nature of the special care department has affected the participation and communication of nurses and requires the professional participation of nurses in the field of patient care, nurses' respect for each other, and increasing the confidence and competence of nurses [1-3].

Professional participation in nurses is a characteristic and professional commitment of nursing and an important factor in providing health care and is known as a suitable solution for many problems in the health system and providing good quality care [4, 5]. Therefore, health institutions were required to redesign their programs in the direction of training safety and quality of care to meet the training needs of health team members. Accordingly,

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nursing leaders also designed a quality and safety training program for nurses. This program focuses on teaching six main skills, one of which is teamwork and cooperation [6, 7].

Professional partnership in nursing is a professional process in which nursing members come together to achieve a common goal and respectfully share their knowledge and resources to solve patient care or healthcare system problems [8]. Effective professional participation in nursing leads to the best results for patients, nurses, and organizations, and improving the quality of patient care, reducing the length of hospitalization, increasing job satisfaction, improving individual performance, improving decision-making, reducing absenteeism and Procrastination is associated with improvements in professional performance components such as coordination, shared responsibility, and innovation [9]. Meanwhile, insufficient or incomplete interprofessional nursing participation often leads to a decrease in the quality of care and performance. Ineffective collaboration and communication disrupts continuity of care and causes inappropriate treatment. Following poor communication, patients are at risk of medical errors and adverse events. In addition, the coherence and continuity of care are lost and the probability of leaving the job of nurses increases [9-11].

The dynamics and quality of nursing care in intensive care units is one of the essential pillars of hospitals because it accommodates patients with serious conditions who are at risk of death. In addition, in this department, with the correct provision of medical services, the optimal use of modern medical equipment, and the use of experienced staff and group decision-making, it is possible to be effective in restoring health to critically ill patients [12]. However, the evidence shows that working in the intensive care unit puts a lot of stress on nurses and affects the quality of their care. Factors such as professional participation, support, and teamwork spirit have been influential in the way of patient care [1-3]. Professional participation in intensive care units has been proposed as a necessary factor in adapting to the complex care needed by patients [12].

The results of the study by Adams *et al.* had experienced intra-professional conflicts, and poor communication between colleagues, and 71% reported high job stress and low job satisfaction [13]. The findings of the study of Attia *et al.* [14] revealed that the score of nurse-nurse cooperation of most nurses in special care departments was not favorable, which is due to the low understanding of nurses and supervisors about teamwork and to a large extent the lack of training in teamwork and the lack of support from nursing managers.

Meanwhile, an essential element to providing high-quality care in intensive care units is interprofessional collaboration between nurses, which facilitates knowledge and information exchange and thus improves performance. Good intra-professional nurse-nurse relationships are important for not only nurses themselves but also for patients and healthcare organizations because they increase job satisfaction and professional commitment and reduce the desire to leave the job [15]. Conversely, nurses' job satisfaction is related to patients' satisfaction and increasing the quality of nursing care [16, 17].

Considering the increase in healthcare costs, it is necessary to continuously improve the quality of nursing services and control the quality of nursing services to increase patient satisfaction [18]. Today, managing patients requires the cooperation of different people. Differences in people's views can lead to ineffective management of patients. Providing safe and effective care requires teamwork. However, the evidence shows that team performance among health team members faces weaknesses that subsequently affect the quality of nursing care. The participation of healthcare team members has been proposed as one of the organizational characteristics of the work environment, an essential factor for the quality and safe care of patients, and the importance of professional participation training has been emphasized [19].

Limited evidence is available regarding the relationship between professional participation and nursing care quality, so the present study was conducted to investigate the relationship between professional participation and the nursing care quality in nurses working in intensive care units.

Materials and Methods

The present research was a cross-sectional study conducted in intensive care units for adults. The study population consisted of 340 nurses working in adult special care units. The sample size was determined based on 80% power, 95% confidence level, and 15% attrition.

Nurses who met the inclusion criteria were selected by the classification method based on sample size and by simple random method. Inclusion criteria included nurses with at least one year of experience in intensive care units, nurses with a bachelor's degree or higher, consent to participate in the study, and no fatigue due to ward workload. In case of non-cooperation in completing the questionnaires, leaving the organization (leaving the hospital), and changing the department (from the special department to other departments), the study samples were excluded from the study. After obtaining the necessary permits, the researcher attended the special care units, explained the objectives of the research and how to fill out the questionnaire to the research units, and asked the qualified nurses to complete the questionnaire if they wished. 18 people did not want to complete the questionnaire and 12 questionnaires were incompletely completed, so they were excluded from the study and finally, 310 questionnaires were completed.

The data collection tool included the demographic characteristics questionnaire and the professional participation subscale from the NPPEI (Professional Practice Environment Nursing Instrument). The construct validity of the tool was investigated by exploratory factor analysis, which caused the extraction of 36 items and six subscales of effective leadership (10 items), patient-centeredness (6 items), professional participation (6 items), professional atmosphere of excellence (5 items), adequacy of resources (6 items), and transparency of policies (3 items). In the present study, the professional participation subscale was used to collect information. The reliability of the whole tool using Cronbach's alpha was 0.93 and for each dimension between 0.74 and 0.82. The reliability of the subscale of professional participation in the present study was found to be 0.78. The reliability of the subscale of professional participation in this study was checked through test-retest so that 30 participants completed the subscale during two stages with an interval of two weeks, then the scores obtained from two tests (before and after) Using the correlation coefficient between the two tests, 0.78 was obtained and it was significant at the level of $P < 0.001$.

Regarding the nursing care quality, the quality scale of nursing care (Cambodian Nursing Care Quality Scale) was used. The construct validity of the tool by exploratory factor analysis caused the extraction of 35 items, which are in the form of 6 dimensions of patient outcomes (9 items), ethical behaviors (7 items), nurse job requirements (6 items), nurse characteristics (6 items), development of nursing process (4 items), and physical environment (3 items) was ranked, which was 60.76% of the total variance was explained. The items of the questionnaire were compiled based on a 5-point Likert scale from completely disagree (1) to completely agree (5).

Data were analyzed using SPSS23 software and through descriptive (frequency and mean) and inferential tests (Chi-square, Pearson's correlation coefficient, and multivariate regression model). 0.05 was considered as a significance level. The chi-square test was utilized to check the significant difference between professional participation and quality of nursing care and demographic variables. The quality of care dimensions of demographic and nursing variables that had a significant difference ($P < 0.25$) with professional participation were entered into the multivariate regression model. It should be noted that before performing multivariate regression, assumptions including data normality, homogeneity of variance, and independence of residuals were evaluated. Adequate information about the objectives, importance of the study, anonymity, and confidentiality of participants' information was provided. In addition, voluntary participation in the research and free withdrawal at each stage of the research were also explained.

Results and Discussion

The results of data collected from 310 nurses in intensive care units were analyzed. The average age of the nurses was 28.5 ± 4.54 years with an age range of 25-54 years and an average work experience of 7.99 ± 6.51 years. Most of the nurses (73.2%) were women. The demographic specifications of the participants are given in **Table 1**.

Table 1. Demographic specifications of special care nurses participating in the study.

	Variables	N	%	P-value
Gender	Male	83	26.8	0.432
	Female	227	73.2	
Age group (Years)	< 24	67	21.6	0.514
	25-29	106	34.2	
	30-34	50	16.2	
	35-39	51	16.5	
	40-44	25	8	
	45-50	9	2.9	
	> 50	2	0.6	
Marital status	Married	142	45.8	0.410
	Single	168	54.2	
Level of education	Bachelor of Nursing	283	91.3	0.520
	Master's degree	27	8.7	

Employment status	As a project	113	36.5	0.321
	Contractual or corporate	107	34.5	
Job Category	Official	90	29	0.361
	Nurse	298	96.1	
	Superintendent	8	2.6	
Type of work shift	Supervisor	4	1.3	0.311
	Fixed shift	56	18.1	
	Rotating shift	254	81.9	

The average score of the subscale of professional participation was 20.47 ± 5.04 and the average score for the nursing care quality was 135.94 ± 18.20 . The mean scores of nursing care quality dimensions are given in **Table 2**.

Table 2. The mean and standard deviation of the score of nursing care quality dimensions from the perspective of the participating nurses.

Dimensions	Mean	Standard deviation
Patient outcomes	35.48	5.37
Ethical behavior	27.44	4.89
Job requirements of nurses	27.36	4.39
Characteristics of the nurse	28.18	4.16
Nursing process development	11.92	1.97
Physical environment	9.63	2.97

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The Pearson correlation test results revealed that there is a significant and direct relationship between professional participation and the total score of nursing care quality ($P < 0.001$, $r = 0.62$). In addition, there was a significant and direct relationship between professional participation and dimensions of nursing care quality including patient outcomes ($P < 0.001$, $r = 0.36$), ethical behaviors ($P < 0.001$, $r = 0.57$), nurse job requirements ($P < 0.001$, $r = 0.34$), nurse characteristics ($P < 0.001$, $r = 0.31$), nursing process development ($P < 0.001$, $r = 0.27$), and physical environment ($P < 0.001$, $r = 0.34$) (**Table 3**).

Table 3. The relationship between the professional participation of nurses with the nursing care quality and its dimensions using the Pearson correlation coefficient.

Variables	Professional participation of nurses
Professional participation of nurses	1
Quality of nursing care	$P < 0.001$, $r = 0.62$
Patient outcomes	$P < 0.001$, $r = 0.36$
Ethical behaviors	$P < 0.001$, $r = 0.57$
Characteristics of the nurse	$P < 0.001$, $r = 0.31$
Nurse job requirements	$P < 0.001$, $r = 0.34$
Nursing process development	$P < 0.001$, $r = 0.27$
Physical environment	$P < 0.001$, $r = 0.34$

However, there was no significant relationship between professional participation and the demographic characteristics of the participants ($P > 0.05$). The results of the multivariate regression model test showed that there

is a significant and positive relationship between professional participation and patient outcomes, ethical behaviors, nurse characteristics, nurse job requirements, nursing process development, and physical environment ($P < 0.001$). So with the increase of one unit of professional participation of nurses, patient outcomes, ethical behaviors, nurse characteristics, job requirements, nursing process development, and physical environment will increase by 0.3, 0.39, 0.22, and 0.25, respectively. In addition, the results showed that professional participation has a direct relationship with the nursing care quality and can explain 52% of the changes in the quality of nursing care (Table 4).

Table 4. The relationship between the professional participation of nurses and dimensions of nursing care quality using a multivariable regression model.

Quality dimensions of nursing care	Estimated amount (B)	Standard error	Confidence limits of 95%	T-Statistics	P-value
Patient outcomes	0.3	0.03	0.22-0.36	7.94	< 0.001
Ethical behaviors	0.39	0.029	0.23-0.40	7.19	< 0.001
Characteristics of the nurse	0.22	0.003	0.15-0.3	0.051	< 0.001
Nurse job requirements	0.25	0.036	0.17-0.32	0.05	< 0.001
Nursing process development	0.12	0.002	0.13-0.22	0.03	< 0.001
Physical environment	0.11	0.001	0.11-0.20	0.01	< 0.001

Adjusted R² = 0.52

The findings of the current study revealed that the scores of professional participation and the quality of nursing care are relatively favorable and there is a moderate relationship between the two variables. In addition, the dimension of ethical behavior was more related to the professional participation of nurses compared to other aspects of nursing care quality. The findings of the current study revealed that nurses' perception of professional participation is relatively favorable. The results of Hassona and El-Aziz's [20] study also showed that the professional participation of nurses is at a desirable level.

Contrary to the findings of the current study, the results of the Serrano-Gemes and Rich-Ruiz study showed that factors such as lack of respect for professional problems and lack of responsibility were among the barriers to professional participation in special care nurses [12] and in another study, the professional participation rate of nurses in special departments was low [20]. Since areas such as collaborative relationships with peers, supportive managers, professional performance, and independence usually affect nurses' perception of the work environment, professional participation and communication skills should be emphasized during the training of nurses. The difference in results may be due to nurses' low understanding of teamwork and collaboration, lack of teamwork training, and lack of support from nursing managers for teamwork. Therefore, nursing administrators and educators should design educational programs that focus on creating innovative opportunities for nurses to learn about interprofessional collaboration in the practice environment.

The findings of the present study showed that the quality of nursing care and its dimensions are relatively favorable from the point of view of nurses. The results of Holmes *et al.*'s study showed that the quality of nursing care from the perspective of prostate cancer patients was high [21]. In another study, the quality of nursing care in special care units was low in the psychological and social dimensions [22]. One of the important tasks of the nurse is to meet the basic needs of the patient by establishing communication, intervening in various psychological, social, physical, and communication dimensions as well as helping and cooperating with the patient in the treatment, therefore re-evaluating the standards of care quality in three dimensions of the structure, process, and outcome from the point of view of nurses and patients, adopting measures to increase the appropriate therapeutic relationship between patient and nurse, and paying attention to the social and psychological needs of patients as much as possible can be beneficial. Based on the findings of the studies, it can be acknowledged that continuous education regarding quality indicators of nursing care is necessary to improve the knowledge and performance of nurses [23]. In addition, considering the sensitivity of the intensive care unit, the critical and complex conditions of patients, and the importance of critical care in these patients, intensive care nurses are available more than other members of the treatment team and spend more time, so the existence of skilled nurses and work the test requires teamwork spirit. Therefore, it seems that the reason for the results of the nursing care quality should be sought in the skills of special care nurses. On the other hand, the nature of the intensive care unit requires excellent collaboration and different interactions between all healthcare providers to provide safe and quality care.

Another finding of the present study is the presence of a significant and positive relationship between professional participation and the quality of nursing care. In the study of Urisman *et al.* [24], interprofessional clinical rounds were applied to strengthen the participation of nurses and surgeons in the intensive care unit. The amount of interprofessional participation increased after the intervention, and the rate of falls and spontaneous extubation of patients decreased and generally, the nursing care quality increased in the period after the intervention. In the study of Milton *et al.* [25], after an organizational intervention including changing the safety climate and working conditions and stress recognition, nurses' and doctors' perceptions of the safety climate and teamwork were significantly improved.

The findings of Black *et al.*'s study [26] showed that interventions based on interprofessional collaboration increase the quality of nursing care. In Anderson *et al.*'s [27] and Celik *et al.*'s [28] study, there was a significant direct relationship between nurses' understanding of teamwork and quality care and nurses' caring behaviors. Nurses had positive thoughts and attitudes regarding the necessity of cooperation between team members to provide quality care.

One of the important components of professional participation is teamwork. Poor attitude towards teamwork and lack of ability for teamwork is an important factor in increasing and decreasing patient safety. A nurse alone cannot provide all necessary patient care. Professional team members consider their jobs and duties as the responsibility of the whole team and reduce the incidence of forgotten nursing care by dividing tasks and making timely decisions [14].

Based on the findings, it is necessary to plan theoretical training courses and increase training workshops to improve the ability of professional team members in the form of group and professional participation. Based on the findings of the study, there was a significant and positive relationship between professional participation and all dimensions of nursing care quality, including patient outcomes, ethical behaviors, nurse characteristics, and job requirements, development of the nursing process, and the physical environment, and among these dimensions, the correlation coefficient between participation Professionalism and ethical behaviors dimension were higher compared to other dimensions of nursing care quality. Based on the results of previous studies, professional participation in nursing has favorable consequences for patients and nurses and is associated with increasing patient satisfaction and nurse job satisfaction, developing a supportive work environment, improving the quality of care, improving decision-making, and increasing job motivation [9, 11]. The findings of the study by Schluter *et al.* [29] showed that good nurses protect patients, give importance to the wishes and opinions of patients and others, and try to promote teamwork.

It seems that when group values are prioritized over individual values, the level of teamwork and participation may increase and can lead to an increase in the nursing care quality in intensive care units. Therefore, it is beneficial to hold training workshops to increase awareness in the field of team cooperation and professional participation to maintain moral values to improve the quality of nursing care.

Conclusion

The findings of the current study revealed that there is a significant and positive relationship between professional participation and the quality of nursing care in special care units. In addition, the dimension of ethical behaviors was more related to professional participation in nurses working in intensive care units. The health care system needs nurses who communicate with each other successfully and in compliance with the values of professional ethics because the treatment and promotion of patient health in special care units requires teamwork in a respectful professional environment. Interprofessional collaboration and partnership are important as one of the ways to achieve patient safety and provide patient-centered and quality services. It is recommended that the views of other members of the health care team be considered in future studies and the effect of educational interventions based on interprofessional participation on the quality of nursing care be investigated.

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