

Original Article

Does Workplace Stress Affect Decision-Making Styles of Clinical Nurses? A Survey Study

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Abstract

Background: Clinical nurses must make accurate decisions to provide safe and qualified nursing care in hospitals where the working environment gets stressful each day.

Aim: To determine the decision-making styles and workplace stress levels of clinical nurses and to investigate whether their stress levels affect the decision-making styles of them.

Methodology: Descriptive and cross-sectional study. This study took place in a public university hospital in Istanbul in 2016. The sample consisted of 337 nurses. Data were collected by a questionnaire that consisted of a demographic data form, "Melbourne Decision Making Questionnaire I-II" and "Workplace Stress Scale."

Result: There was a positive correlation between the scores of the Melbourne Decision Making Questionnaire II and the Workplace Stress Scale. There were differences between the participants' Melbourne Decision Making Questionnaire I-II scores according to their Workplace Stress Scale scores.

Conclusion: Nurses' workplace stress levels and their decision-making styles were significantly related to each other. Nurses who were exposed to high level of workplace stress had a low level of self-esteem (self-confidence) and tended to make decisions in hyper-vigilance style.

Keywords: clinical nursing, decision making, workplace stress

Introduction

Nurses often make professional decisions in clinical settings while they are serving to the patients. They try to make decisions by considering their own knowledge and experience as a part of their roles in various areas such as management, research, education and/or health care practice (Johansen & O'Brien, 2016; Marquis & Huston, 2012). Since they make important decisions related to patient care and related to organizational events and professional

matters in the clinical care settings they work in (Nibbelink & Brewer, 2018), they feel under pressure to adapt themselves to increasingly difficult and complex health care working environments (Eren, 2015).

Decision making is "a complex, cognitive process often defined as choosing a particular course of action" (Marquis & Huston, 2012). For nurses, making the right decision is an important part of their professional roles and responsibilities. As professionals, they need to make the right decision in fulminant and complicated situations. They also need to think

fast and should not lose time (Nibbelink & Brewer, 2018). Well-timed decision-making increases efficient resource utilization, the quality of the healthcare service and patient satisfaction. Besides, it decreases the cost and the expense of healthcare and medical treatment as well as reducing medical errors. Making the right decision and considering the results are also effective to improve their work motivation (Al-Dossary et al., 2016; Bektaş et al., 2017; Chen et al., 2016).

In the process of decision making, the first step is to determine the aims for solving a problematic situation. Secondly, some alternative solutions are created with the help of professional experience and expertise in the field. Finally, the best appropriate solution is chosen among the alternatives (Marquis & Huston, 2012). Following these steps, nurses need to have more autonomy and play an active role in the clinical decision-making process (Ugur et al., 2017).

Workplace stress, as a well-known phenomenon, is also a major concern for health care providers. World Health Organization (2019) defines it as “the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope.” Related to the characteristics of the work environment of hospitals, healthcare professionals are faced with high levels of stress. Noticing others’ suffering, feeling empathy for others’ pain and dealing with the suffering patients (and their relatives) put nurses at risk of experiencing stress in the workplace (Moss et al., 2016; Zhang et al., 2018).

When the studies are examined, main stressors nurses encounter in their work life are listed as; intense work pressure, tasks, taking lots of responsibilities, excessive working hours, communicating with patients’ relatives, working in shifts, dealing with patients in terminal wards or patients with severe injuries, and witnessing death (Vicente et al., 2016). Besides, moral distress, nursing shortage, limited human resources, lack of organizational or managerial support in clinical environments, organizational pressures, and the feeling of guilt when they are unable to provide qualified nursing care are among those major issues affecting nurses directly. Furthermore, relationships with patients, colleagues and other health professionals might

trigger concern or stress reactions among nurses (Zhang et al., 2018).

Nursing, as a profession dealing with human beings, needs to make the right clinical decision according to the principle of (capacity) utilization. For providing efficient and qualified healthcare, nurses need to make the right clinical decisions which can be achieved by determining the stress level of their work environment, diagnosing it and reducing its intensity. Besides, studies in the literature show that stress levels of nurses are higher than other healthcare professionals (Kozłowski et al., 2017).

Previous studies related to decision making and workplace stress on nurses exist in literature. Some of them aimed to define the workplace stress levels of nurses and researched relations between stress and burnout (Garrosa et al., 2008), organisaitonal commitement, job satisfaction (Ergün, & Çelik, 2015), intention to stay the job (Borhani et al., 2014), workplace violence and compassionate behavior (Zhang et al., 2018). Other ones aimed to define decision making ways and styles of nurses (Al dosrrary et al., 2016; Chen et al., 2016; Nibbelink & Brewer, 2018; Johansen & O’Brien, 2016; Ugur et al., 2015). However, only one study was found that aimed to understand the relationship between decision making and workplace stress and it was on nursing students (Bucknall, et al., 2016).

Therefore, this study was planned to define decision-making styles and work stress levels of clinical nurses working in a public university hospital and it aimed to investigate whether the stress levels of their working conditions affect their decision-making styles.

Methodology

Design: This study is a descriptive and cross-sectional.

Sample and Setting: This study was carried out in a public university hospital that was established in 2016 in Istanbul. There were 829 nurses employed in that hospital. During the study process, the hospital was providing health care services with 750 hospital beds in its medical and/or surgical units.

Nurses working in medical and surgical clinics and operation rooms for at least one year were included in the study sample. Only 750 of the nurses were actively working in hospital clinics during the study period. The minimum sample

size was calculated as 328 for $\alpha = 0.05$ and a 98% confidence interval according based on the “calculating sample size with a finite population to the formula” (Singh & Masuku, 2014). After excluding twelve surveys which were not completed correctly, the study sample consisted of 337 nurses who agreed to participate in the study and filled in the surveys correctly between the 15th October – the 30th November 2016.

Most of the participants were at the age of 30 or younger (41.5%), female (88.7%), married (57%) and had a graduate degree (64.7%). The average professional experience of nurses was 12.45 ± 7.14 . It was 7.60 ± 7.14 for the unit and 10.53 ± 8.13 for the hospital. Most of them were working in shifts (59.9%).

Data Collection:

Informed Consent: Written informed consent was obtained from the nurses who agreed to take part in the study. One of the researchers visited the related clinics and distributed the data collection tools to the clinical nurses one by one. Nurses who wanted to participate in the study were given a week to fill in the surveys. Completed surveys were then collected.

Ethics Committee Approval: The study was approved by the ethics committee of a university (Scientific Ethics Board of Istanbul Okan University-2016-76).

Data Collection Tools: A data collection tool composing of three sections was used.

In the first section (Demographical form): An eight-item form was used in order to define demographical and professional characteristics of the participants.

In the second section (MDMQ I-II Scale): Melbourne Decision Making Questionnaire I and II (MDMQ I-II) were used in order to define the decision-making styles of the nurses. The original scale was first used by Mann et al. (1998) for intercultural research performed in 6 countries. The scale was prepared in a 3-point Likert style with a total of 28 items. It consisted of two sections including MDMQ-I and MDMQ-II. General explanations for the scales and the terms that were used in the study as in the following: MDMQ-I: It aims to measure the level of self-esteem in decision making. It consists of six items. The maximum score is 12. High scores demonstrate the fact that the respondent's level of self-esteem during decision making is high.

MDMQ-II: The scale aims to determine the decision making styles. It consists of 22 items

and 4 subscales. These decision-making styles are vigilance (6 items), procrastination (5 items), buck-passing (6 items) and hyper-vigilance (5 items). High scores show the high use of related styles.

1. Vigilance: The situation in which an individual searches for the necessary information and considers the alternatives carefully before making a decision and a choice. This sub-scale consists of six items (2, 4, 6, 8, 12, 16).

2. Buck-passing: The situation in which a person tries to avoid decision-making and tends to let others make decisions so that s/he can get rid of the responsibility of making a decision. This sub-scale is expressed in six items (3, 9, 11, 14, 17, 19).

3. Procrastination: The situation in which a person tries to postpone or delay decision-making without having an acceptable excuse. This sub-scale has got five items (5, 7, 10, 18, 21).

4. Hyper-vigilance: The situation in which an individual feels the time pressure on himself/herself and tries to formulate a quick solution when s/he needs to make a decision. This sub-scale consists of five items (1, 13, 15, 20, 22).

Cronbach alpha internal consistency coefficient was reported as 0.74 for MDMQ I, 0.80 for vigilance, 0.87 for buck-passing, 0.81 for procrastination and 0.74 for hyper-vigilance in the original study. It was adapted to Turkish by Deniz (2004). Cronbach's alpha internal consistency coefficients were found to be as 0.72 for MDMQ I, 0.80 for vigilance, 0.78 for buck-passing, 0.65 for procrastination, and 0.71 for hyper-vigilance in the adaptation study. In this study, Cronbach's alpha values were found as 0.68 for MDMQ I, 0.86 for vigilance, 0.78 for buck-passing, 0.76 for procrastination, and 0.73 for hyper-vigilance.

In the third section (WSS): “Workplace stress scale” was used for defining the stress level of nurses. It was a 5-point Likert-type scale and consisted of 10 items. Minimum score was 10 and the maximum score was 50. Mean scores between 10-12, 13-30 and 31-50 indicated low, medium and high-level stress respectively. Internal consistency coefficient of the scale was reported as 0.94 in the adaptation study (Aktaş, 2001). In this study, alpha value was 0.77.

Data Analysis: Descriptive statistics (number, percentage, minimum and maximum values, mean and standard deviation) were used to

determine the sociodemographic characteristics of the participants and to evaluate scores obtained from the scales and sub-dimensions. For testing the reliability of the results obtained from the scales, Cronbach's Alpha internal consistency coefficient was calculated. In order to determine whether there is a significant difference between the participants' decision-making styles according to their workplace stress level or not, parametric comparative analysis (independent samples t-test) was conducted. Multiple linear regression analysis and Pearson correlation analysis were used to evaluate the relationship between the study variables and concepts.

Ethical approach: Ethical approval was obtained from the Scientific Ethics Board. Also, formal approval was obtained from hospital management. Each nurse was informed about the aim of the study by the researcher. After these explanations only the ones who accepted to take part in the study were included to the sample.

Results

Findings of the participants' decision-making styles, their self-confidence in decision-making and their workplace stress level; The participants obtained 10.29 (SD = 1.77) on the MDMQ I. They got the highest score on the vigilance sub-scale (mean = 10.39, SD = 1.89), and the lowest mean score on the hyper-vigilance sub-scale (mean = 3.18, SD = 2.31) in the MDMQ II. Their

mean score on the MDMQ II was 20.61 (SD = 6.85). It was also found that the nurses' mean score was 31.11 (SD = 6.16) in the WSS. When the workplace stress level of them was evaluated, it was determined that most of the nurses ($n = 187$, 87%) had a high level of workplace stress (Table 1). Table 2 shows whether there is a correlation between the participants' scores of the MDMQ-I, MDMQ-II, and WSS. It was found that there was a statistically significant and a positive correlation between the scores on the MDMQ-II and WSS ($r = 0.269$; $p < 0.001$). Multiple linear regression analysis was carried out to determine the effect of WSS scores on the MDMQ-I-its sub-scales and MDMQ II. Both models were statistically significant ($F_{MDMQI} = 8.23$; $F_{MDMQII} = 26.12$, $p < 0.001$). WSS scores explained 7.9% of the variance in the MDMQ-I (Table 3) and 7% of the variance in the MDMQ-II. Finally, the MDMQ-I and MDMQ-II scores of the participants were compared according to their workplace stress levels in Table 4. It was found that nurses with a high-stress level got a significantly lower mean score in the MDMQ-I ($t = 1.98$, $p < 0.05$) and a higher mean score in the MDMQ-II ($t = 2.24$, $p < 0.05$). When comparisons were made for the sub-scale scores, there were no statistically significant differences between the mean scores of the nurses in vigilance, buck-passing and procrastination sub-scales ($p > 0.05$). However, there was a statistically significant difference in the hyper-vigilance sub-scale ($p < 0.01$).

Table 1: The mean scores were obtained from the scales (MDMQ I, MDMQ II-its subscales, WSS (N = 337))

Scales	<i>n</i>	α	LV -HV	Mean	(SD)
MDMQ-I	6	0.684	3-12	10.29	(1.77)
MDMQ-II	22	0.863	6-44	20.61	(6.85)
Vigilance	6	0.730	3-12	10.39	(1.89)
Buck-passing	6	0.776	0-12	3.84	(2.66)
Procrastination	5	0.767	0-10	3.20	(2.44)
Hypervigilance	5	0.762	0-10	3.18	(2.31)
WSS	10	0.773	10-50	31.11	(6.16)

n = The number of the items in the scale, α = Cronbach Alpha Internal Consistency Coefficient, LV = The Lowest Value; HV = The Highest Value, SD = standard deviation

Table 2: Correlation between decision-making styles (MDMQ-I, II) and workplace stress (N = 337)

Scales		1	2	3	4	5	6	7
MDMQ-I	r	1						
MDMQ-II	r	-.308*	1					
Vigilance	r	0.317*	0.244*	1				
Buck-passing	r	-.378*	0.865*	-.042	1			
Procrastination	r	-.332*	0.859*	0.002	0.676*	1		
Hypervigilance	r	-.386*	0.861*	-.050	0.732*	0.709*	1	
WSS	r	-.105	0.269*	0.049	0.191*	0.237*	0.287*	1

* $p < 0.001$ **Table 3: Results of the multiple linear regression analysis between the decision-making styles (MDMQ-I, II) and workplace stress (N = 337)**

	MDMQ I	Adjusted R ²	β	F	p
WSS					
	Vigilance	0.079	0.060		
	Buck-passing		0.069		
	Procrastination		0.084	8.23	0.000*
	Hypervigilance		0.281		
	MDMQ II	0.070	0.269	26.12	0.000*

* $p < 0.001$

Table 4: Comparisons between the nurses' decision-making styles (MDMQ I-II) according to their work stress level (N = 337)

Scales	Low and medium level stress		High level stress		Test; p values
	(n:150)		(n:187)		
	Mean	(SD)	Mean	(SD)	
MDMQ-I	10.51	1.60	10.12	1.89	$t = 1.98; p = 0.048^*$
MDMQ-II	19.69	7.02	21.36	6.63	$t = 2.24; p = 0.026^*$
Vigilance	10.25	1.92	10.50	1.86	$t = 1.21; p = 0.227$
Buck-passing	3.75	2.75	3.91	2.60	$t = 0.55; p = 0.581$
Procrastination	2.91	2.46	3.43	2.41	$t = 1.95; p = 0.052$
Hypervigilance	2.77	2.39	3.51	2.18	$t = 2.96; p = 0.003^{**}$

* $p < 0.05$; ** $p < 0.01$, *SD* = standard deviation

Discussion

In terms of nursing, decision making is a process in which nurses put their theoretical and experiential knowledge into practice by considering and interpreting them effectively. Nurses have a responsibility to analyze the healthy/ill individuals in their environment and take a key role in the communication of the health care team. Nurses often need to make decisions to deal with these roles and responsibilities (Marques et al., 2012). Even there were studies related to the decision making in nursing, limited studies were reported from midwestern countries (Ugur et al., 2017). This study investigated the nurses' decision making styles and whether the workplace stress was one of the factors affecting their decision making.

Discussion about the participants' scores obtained from the scales (MDMQ I, II and WSS); It was determined that the nurses got high mean score in the MDMQ I, which showed that they felt confident in decision-making. Study also found that nurses make decision vigilantly according to their MDMQ II scores (Table 1). These high scores indicated the fact that they

investigated and analyzed the information and considered alternatives in detail before making a decision. Nurses who were self-confident and who made decisions vigilantly became more successful at their works, became more enterprising in practice and were affected less by the stress factors. Low mean scores that nurses obtained in the other sub-scales (buck-passing, procrastination, and hyper-vigilance) indicated the fact that they did not tend to pass the buck, they did not postpone their decisions and they did not act inconsiderately (when taking actions urgently). Beside using different scales for defining clinical decision making styles, similar results were reported in different studies (Al-Dossary et al., 2016; Ugur et al. 2017).

Nurses needed to make vigilant decisions while describing and verifying patients' identity information, gaining patients' consent for medical care and treatment, providing communication security among the members of the health care service, providing medication security, diminishing the infection risk and preventing patients from falling (Nibbelink & Brewer, 2018; Kanaskie & Snyder, 2018). When

the findings of this study were evaluated, it could be claimed that nurses made decisions judiciously and vigilantly, they made choices which would not risk patient safety and they worked according to the professional requirements of their jobs.

Unfortunately, the mean score of the nurses in the WSS was high and it was observed that most of the nurses experienced a high level of workplace stress (Table 3). Different from this study, Ergün and Çelik (2015) found the nurses' workplace stress level partially high according to the units they worked in a ministry of health hospital. However, similar to our study, it was revealed in Ergün and Çelik's study that nurses who got high scores from WSS were the ones who were working in intense units. As our study took place in a university hospital which statistically has an intense workload in all of its units, the results of both studies are consistent.

The health care environment is more stressful than other job environments because it provides service to a lot of highly stressed people such as patients, their relatives, and health care professionals. As nursing is a profession dealing with human health, it requires to be practiced with constant attention and accurate decision-making. It also contains complex information and demands long and flexible working hours. Besides, the number of patients and patients' relatives that nurses have to be dealing with would affect their workload. Therefore, it can be easily seen that these facts about nursing intensify the workload and cause nurses to feel stressed and their professionalism is affected by this fact (Borhani et al., 2014).

Discussion about the relationship between nurses' decision-making styles and workplace stress; In this study, no relation was found between the level of workplace stress and nurses' having self-esteem in decision making (Table 2). 73.6% of the nurses were 'specialist nurses'. This might be because of the fact that most of the participants were experienced both in the nursing profession and in their institutions. Thus, it is understandable that they maintain their self-esteem and self-confidence in decision making despite the stress they feel (Orsolini-Hain & Malone, 2007).

However, there was a statistically significant difference between workplace stress level and the preference of the decision-making style of the participants. Especially, it was designated that

more nurses preferred to make decisions in buck-passing, procrastination and hyper-vigilance styles when the workplace stress level increased.

By means of this study, it is reported that employees cannot be beneficial for their institutions when they experience a high level of stress because of their tendency to make decisions in a highly emotional and panicked way increases. Besides, the emphasis is laid on some situations in which employees should make decisions in a sudden, pressured and fast way. Discussion About Regression of the Workplace Stress Scale and the Scores Obtained From MDMQ-I and II; Factors affecting the decision-making process may both make it easier or limit it. The stress they experience may cause decision makers not to define their aims properly, not to understand the problematical side of the matter and to have difficulty in decision-making. The problems nurses encounter in clinical environments may cause them to feel anxiety, it may influence their motivation and self-confidence and consequently, their decision-making process can be affected negatively (Bektaş et al., 2017). Abilities such as considering a matter, analyzing it and intervening in it properly are critical for the patients' health (Bucknall et al., 2016). These all can be possible by nurses' vigilance in decision making. This study is important as it shows that the workplace stress level of the nurses does not affect their vigilance in decision making in a negative way. The results reveal that nurses uphold professional vigilance despite job related stress. However, it is also designated that workplace stress causes nurses to make decisions in buck-passing, procrastination, and hyper-vigilance. This finding must be underlined carefully in terms of patients' health and work safety because it may cause severe issues. For example, the buck-passing decision-making style can cause nurses to be unwilling to perform an action – in favor of delegation to another colleague; the procrastination decision-making style can cause them to postpone an intervention which must be done as soon as a problem occurs; and the hyper-vigilance decision-making style can cause them to perform a wrong application under so much pressure (Table 3). Discussion about nurses' decision-making styles (MDMQ I-II) according to their stress levels; Nurses who work under a high level of stress have a lower average from MDMQ-I scores (Table 4). This finding reveals that nurses who work under a high-stress level

are less self-confident in deciding-making than the nurses who experience a medium or low level of stress.

Furthermore, there was a statistically significant difference between workplace stress and the hyper-vigilance style of decision making in MDMQ-II ($p < 0.01$). The reason why nurses who experience a high-stress level mostly make their decisions in hyper-vigilance is that they need to find a solution in a very fast way and in a very short time. Since they should make decisions for some sudden and fast pacing situations, they may not have enough time to time to consider outcomes and they have to formulate a quick solution and hence act in hyper-vigilance.

Limitations: Because of it is a single centred study, the findings were limited to the nurses who work at that center.

Conclusions: Nurses' level of self-esteem (self-confidence) was found high according to MDMQ-I. Their mean score for "vigilance decision-making style" in MDMQ-II was also higher. Besides, nurses' vigilance was revealed to be high in decision-making. As nursing is an occupation dealing with human beings, this is an important and a desirable finding. Also, most of the nurses (55.5%) were observed to experience workplace stress. Decision-making styles of nurses were analyzed according to their workplace stress level and it was found that nurses who were exposed to high level of workplace stress had a low level of self-esteem (self-confidence) and tended to make decisions in hyper-vigilance style. Another point that must be underlined is related to the effects of workplace stress in other aspects. Workplace stress is thought to have various influences on both individuals and institutions. For example, not only nurses' decision-making processes but also their individual health in both physical and psychological terms might be being affected. Moreover, a lot of other work-related matters such as their performance, work satisfaction, productivity and motivation might be being affected, too. Therefore, this study can be seen as a pointer underlining the other issues regarding workplace stress.

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