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Research Article

Greek Nurses' Clinical Decision-Making during the Covid-19 Pandemic

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Abstract

Background: Nurses' daily clinical decisions affect patients and the quality of care provided. **Aims:** To compare nurses' clinical decisions while working in medical, surgical, and critical care units during the covid-19 pandemic. **Methods:** A standardized questionnaire was used as a data collection tool. A total of seven public hospitals in Greece took part in the study (125 questionnaires). **Results:** Regarding direct patient care, nurses regularly make decisions about diagnosing the patient's condition and providing basic nursing care. Nurses often make clinical decisions in regard to supervision and management related to managing the work environment and supervising junior staff. In regard to the nurses extended role, nurses did not make clinical decision to inform patients about their prognosis. In addition, nurses in the critical care setting frequently made decisions about diagnosing the patient's condition ($p < 0.05$) than nurses in the medical and surgical setting. **Conclusion:** Greek nurses must redefine their role through continuing education and research in order to acquire a higher level of autonomy.

Keywords: Clinical decision-making; Nurses; Covid-19; Greece

Introduction

Clinical decision-making is a multifaceted concept. It is a skill practiced daily by nurses in the clinical setting that needs to be constantly developed to lead to quality patient care. Clinical decision-making is considered an integral part of the nurses' role as and is linked to professional satisfaction [1].

Clinical Decision

Definition

Marino, Andrews & Ward [2] defined clinical decision making as a behavior that leads to making a choice and implementing a course of action based on that choice. In making decisions the nurse is asked to choose an intervention between two or more options [3]. Thus, decision making is synonymous with selection, and using information to base decisions in practice.

Decision making is directly related to the stages of the nursing process [4].

Factors Influencing Clinical Decisions

It is important for nurses to make decisions based on certain factors. Many researchers claim that the most important decision-making factors are intuition [5], knowledge [6], clinical experience [7], role [8], stress and duties [9] as well as the relationship between doctors and nurses [6]. Other researchers found that successful decision making is based on critical thinking and rationality [10], personality [11], clinical guidelines [12], autonomy and authority [13] and continuing education [14].

Usefulness of Clinical Decisions

Clinical decision making is an essential skill for all health professionals, as well as a fundamental component of daily clinical practice [15]. It is a skill that needs to be constantly developed to lead to the provision of effective, safe, and quality patient care [16]. In addition, the decision-making process is essential for achieving cost-effective nursing care, ensuring accountability within the health system8. Nurses should be trained in regard to clinical decision-making skills from an undergraduate level since these skills will have a vital role in their daily clinical patient care.

Making the Right Clinical Decision

Making the right clinical decision is not a simple process. There are many factors that can distract the nurse from making the right choice. An important, factor influencing the decision-making process, that should not be overlooked, is the limited time nurses have to make decisions. Decisions need to be made quickly to address the patient's problem and reduce waiting time. According to Bakalis & Watson [17], nurses are often called upon to make decisions in a short period of time based on limited information resulting in a high degree of uncertainty. The decision-making process causes the nurse emotional stress as some decisions can have a major impact on the patient's life [18]. In the clinical care setting, nurses make clinical decisions based on available research data, their clinical expertise and patient preferences [19].

Nurses' Clinical Decisions

Nurses make frequent, complex and important decisions. Research has shown that nurses working in the emergency room make decisions every 10 minutes, nurses working in in the intensive care unit make decisions every 30 seconds [20], while community nurses make 10 decisions when interacting with a family [21]. These results are confirmed by other researchers, who analyzed the frequency of nurses' clinical decision in various settings [6,17]. Although Greek nurses make clinical decisions, they are characterized by low autonomy [22]. Greek nurses' low autonomy is evident, perhaps due to inadequately defined nursing duties and responsibilities in Greece and the lack of hospital protocols. These circumstances facilitate a passive role on the part of the nurse in making clinical decisions.

The Nursing Profession in Greece

The nursing profession in Greece is constantly improving. Nursing as a science provides opportunities for the further education and professional development in the field. However, there are many problems that hinder the prospect of further development of the nurse's role. Indicatively, the main problems are:

- nursing duties and responsibilities in Greece are inadequately defined
- community nursing (school, home care) is not very developed
- there is a significant shortage of nursing staff, especially in hospitals
- there is a significant lack of clinical guidelines
- continuing education offered to nursing staff is inadequate

Nursing Education in Greece

Undergraduate nursing education in Greece is a four-year university program, which includes theoretical, laboratory and clinical training in a variety of health care settings (hospitals, health centers, etc.). Upon completion of the undergraduate nursing program students can further their education and obtain a postgraduate degree (MSc / PhD) in Greece or abroad. The graduate nurse is issued a government license to practice nursing in Greece. A nurse can also acquire additional education and gain expertise in one of the following fields of nursing: a) Palliative and Supportive Nursing Care, b) Geriatric Nursing, c) Cardiovascular Nursing, d) Mental Health Nursing, e) Oncology Nursing, f) Adult Nursing Care, g) Pediatric Nursing and h) Perioperative Nursing [23].

Hospital Care in Greece

The nurse's role is fundamental in the medical and surgical care setting [24,25]. Despite the different characteristics of each setting (elderly patients in the medical clinics while patients in surgical clinics experience intense anxiety and fear due to an operation and the possible outcome), they are characterized by nurse understaffing and limited use of clinical, making clinical decisions a difficult task [26]. In contrast, the intensive care setting requires more resources due to the severity of the patients' disease. The Intensive Care Units (ICUs) in Greece have the lowest rates of understaffing and apply rigorous clinical guidelines, while at the same time demonstrate the highest rate of clinical decision-making in the field [27].

An extensive review of the literature on nurse's clinical decision making demonstrated that studies on the topic involve different research approaches (quantitative-qualitative) and

examine different aspects. There is a lack of research conducted in Greece regarding nurses' clinical decisions while internationally, studies mainly focus on factors that influence nurses' clinical decisions. The purpose of this study was compare Greek nurse's clinical decisions made while working in the medical, surgical and intensive care units during the Covid-19 pandemic.

The SARS-CoV-2 coronavirus, which the WHO declared a pandemic in March 2020, influence health systems in most countries of the world, pushing them to radical changes [28] and adjustments in the way health services are provided [29]. As expected, important questions and concerns arose, not only for the effective management of the pandemic, but also for the efficient management of patients [30,31]. It is generally accepted that the fight against the COVID-19 pandemic is primarily fought on two fronts: prevention and treatment. On both fronts, the role of health services is crucial.

Materials & Methods

A clinical decision-making questionnaire (CDMQ) designed by Bakalis & Watson [17] was used to conduct the research. This questionnaire consists of 15 statements (closed-ended), regarding aspects of nursing practice such as direct patient care, supervision and management decisions, and decisions related to nurses' extended roles. All statements were answered using a four-point Likert scale ranging from 1 to 4 (1= regularly, 2 = often, 3 = sometimes, 4 = not at all).

Procedure

Due to the Covid-19 pandemic and restrictive measures in place, questionnaires were distributed via electronic form. Google Forms is an online software that allows researchers to create surveys that can be completed online, without the researcher's physical presence. This study received ethical approval by the institutional review board of the University of Patras (Greek registration number: 7586). Hospitals (7 public hospitals) were selected using convenience sampling. Letters providing information of the study were sent to the directors of nursing. Once hospital permission was granted, the questionnaire was uploaded to the hospital's website. Nurses who had access to the hospital website and wished to participate in the study were able to complete the questionnaire. The first page of the questionnaire explained the purpose of the study and questionnaire completion guidelines. Information regarding nurse's anonymity, confidentiality and voluntary participation were included. Participants who agreed to join the study completed the questionnaire. The time needed to complete the questionnaire was 5-8 minutes.

Sample

The total study sample included 125 nurses from 7 public hospitals in Greece.

Statistical Analysis

Results were analyzed using the statistical program SPSS 24. A confidence level $p<0.05$ was determined for the analysis of the data. Cronbach's alpha reliability coefficient was used to test the internal consistency of the questionnaire, a value of 0.70 was accepted as satisfactory.

Results

Cronbach's alpha Reliability Coefficient

The reliability analysis revealed that the Cronbach's alpha coefficient for the questionnaire was 0.711 (Table 1). This value is over the threshold of 0.70, and thus is acceptable demonstrating that the questionnaire is characterized by consistency.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
711	711	15

Table 1: Cronbach's alpha reliability coefficient Reliability Statistics.

Descriptive Analysis: demographic characteristics (n=125)

The majority of the sample that participated in the study were women (87.2%), aged 26-60 years (x = 42.23 years). Almost half of the participants worked in the surgical (49.6%) and medical (41.6%) setting. Their previous work experience ranged between 1-31 years (x = 12.03 years). The majority of the participants did not hold a postgraduate degree (84.8%). Lastly, the majority of the participants lived in an urban area (75.2 %) and their annual income ranged from € 10,001-20,000 (76.8%).

CDMQ	Regularly		Often		Sometimes		Not at all	
	Frequency	Percent (%)	Frequency	Percent (%)	Frequency	Percent (%)	Frequency	Percent (%)
Q1	40	32	34	27,2	36	28,8	15	12
Q2	58	46,4	38	30,4	24	19,2	5	4
Q3	101	80,8	21	16,8	2	1,6	1	0,8
Q4	64	51,2	39	31,2	21	16,8	1	0,8
Q5	67	53,6	35	28	21	16,8	2	1,6
Q6	44	35,2	26	20,8	42	33,6	13	10,4
Q7	18	14,4	13	10,4	38	30,4	56	44,8
Q8	11	8,8	10	8	25	20	79	63,2
Q9	37	29,6	30	24	30	24	28	22,4
Q10	39	31,2	26	20,8	32	25,6	28	22,4
Q11	10	8	13	10,4	14	11,2	88	70,4
Q12	2	1,6	5	4	22	17,6	96	76,8
Q13	22	17,6	25	20	52	41,6	26	20,8
Q14	5	4	5	4	4	3,2	111	88,8
Q15	27	21,6	33	26,4	42	33,6	23	18,4

Table 2: Frequency of each of the 15 statements of CDMQ (n=125).

Nurses *regularly* made decisions about *direct patient care* and specifically regarding the diagnosis of the patient's condition, providing basic nursing care, providing psychological support and patient teaching, while they *sometimes* provided information to patients. Nurses *regularly* made clinical decisions regarding *supervision and management* and specifically in relation to managing the work environment, mentoring nursing students, and supervising junior staff. Nurses *sometimes made* decisions related to organizing the work of others while they *never made* decisions on the ward or unit budget. Lastly regarding the nurses extended role, nurses *regularly* made decisions to intervene in emergency situations but *never made* decisions related to the diagnosis of the patient's condition, arranging (further) patient investigations, changing patient medication, and discharging a patient.

Kruskal-Wallis test was used to investigate statistically significant differences in the medical, surgical and critical care settings.

	Clinical Area	N	Mean Rank
Q1	Medical	52	53,14
	Surgical	62	64,95
	Critical care	11	70,92
	Total	125	
Q3	Medical	52	62,73
	Surgical	62	63,20
	Critical care	11	63,14
	Total	125	
Q4	Medical	52	68,19
	Surgical	62	58,10
	Critical care	11	66,05
	Total	125	
Q6	Medical	52	63,83
	Surgical	62	64,99
	Critical care	11	57,86
	Total	125	
Q13	Medical	52	60,47
	Surgical	62	65,25
	Critical care	11	62,27
	Total	125	

	Q1	Q3	Q4	Q6	Q13
Kruskal-Wallis H	7,426	,011	2,742	2,350	,549
df	2	2	2	2	2
Asymp. Sig.	,024	,995	,254	,309	,760
a.Kruskal Wallis Test; b. Grouping Variable: ward					

Table 3: Kruskal-Wallis test in Greek Subset (direct patient care).

Statistically significant differences for question 1 ($p<0.05$) were identified between the nurse's responses working in the critical care setting when compared with nurses working in the medical and surgical settings (Diagnosing the patient's condition).

	Clinical area	N	Mean Rank
Q2	Medical	52	54,54
	Surgical	62	69,39
	Critical care	11	67,00
	Total	125	
Q9	Medical	52	60,57
	Surgical	62	65,15
	Critical care	11	62,36
	Total	125	
Q10	Medical	52	61,18
	Surgical	62	61,29
	Critical care	11	81,23
	Total	125	
Q11	Medical	52	59,59
	Surgical	62	65,45
	Critical care	11	65,32
	Total	125	
Q15	Medical	52	61,98
	Surgical	62	64,08
	Critical care	11	61,73
	Total	125	

	Q2	Q9	Q10	Q11	Q15
Kruskal-Wallis H	5,663	,489	3,274	1,220	,118
df	2	2	2	2	2
Asymp. Sig.	,059	,783	,195	,543	,942
a. Kruskal Wallis Test; b. Grouping Variable: ward					

Table 4: Kruskal-Wallis test (supervision/management).

The findings indicate that, there is a statistically significant difference between the nurse's responses working in the surgical setting when compared with nurses working in the medical and critical care settings for question 2 ($p<0.05$ Managing the work environment).

The Kruskal-Wallis test regarding the nurses extended roles, indicates no statistically significant differences (p>0.05).

		Q1	Q2	Q5	Q8	Q10	Q11	Q14	Q15
Age	Pearson Correlation	,053	-,087	,031	,049	,029	,229*	,042	,199*
	Sig. (2-tailed)	,561	,336	,728	,587	,751	,010	,639	,026
	N	125	125	125	125	125	125	125	125
Gender	Pearson Correlation	,078	,025	-,189*	-,074	,027	,051	,010	,066
	Sig. (2-tailed)	,387	,780	,035	,410	,768	,576	,914	,467
	N	125	125	125	125	125	125	125	125
Experience	Pearson Correlation	,025	,187*	-,077	-,097	-,108	,202*	,112	,235**
	Sig. (2-tailed)	,786	,037	,391	,280	,229	,024	,214	,008
	N	125	125	125	125	125	125	125	125
**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).									

Table 5: Correlations between demographic characteristics and statements of CDMQ**.**

The results indicate that there is a statistically significant correlation between the participants age and decisions on ward or unit budgets (r = .229, df = 125, p <0.05) and organizing the work of others (r = .199, df = 125, p <0.05). As the nurse's age increased findings indicate that, nurses make more decisions on ward or unit budgets and organizing the work of others. Participant's gender was significantly correlated with acting in an emergency situation. Male participants tend to make decision more often in emergency situations than women. Lastly, the findings indicate a positive correlation between nurses' years of working experience and decisions made regarding managing the work environment (r = .187, df=125, p <0.05), deciding on ward or unit budgets (r = .202, df = 125, p <0.05) and organizing the work of others (r = .235, df = 125, p <0.05).

Discussion

Nurses face a challenge due to the unpredictable health crisis brought on by the Covid-19 pandemic along with the ongoing advances in the health care field. Nurses today need to prepare and adapt to the ongoing changes that are taking place. Patients expect that the nursing care they will receive will be based on the best available data, while they themselves will be involved and informed about the health care provided.

This study examined Greek nurses' clinical decisions while working in the medical, surgical, and critical care settings. Participant were asked questions related to the provision of patient care, supervision and management, as well as the nurses extended role. The results of this study demonstrated that Greek nurses make decisions regarding the provision of patient care. Specifically, nurses in all settings regularly make decisions regarding the diagnosis of the patient's condition, the provision of basic nursing care, the provision of psychological support and offer instruction to the patient and his family.

Decisions regarding the provision of information to the patient and his family upon his discharge from the hospital were often (41.6%) and seldomly made (20.8% respectively). This is likely because doctors are usually the health professionals who inform the patient when leaving the clinic / unit. It is noteworthy that nurses working in the critical care setting make decisions about the patient's diagnosis more often as oppose to nurses working in the medical and surgical setting (p<0.05). Other studies have found similar results [17,32,33]. Research suggests that the critical care setting is a physically and emotionally challenging environment for the health care professional [34,35].

In terms of clinical decisions regarding supervision and management, nurses in all settings investigated in this study, make decisions but to a lesser extent. Specifically, the majority of the sample regularly coordinates the work environment and in fact nurses who work in the surgical setting often make decisions regarding the coordination of the work environment (p<0.05). Nurses, in all three settings, also make decisions regarding mentoring nursing students and supervising junior staff. Finally, the vast majority of nurses do not make decisions on the budget of the clinic/unit. This is mainly because, the charge nurse is primarily responsible for making decisions related to the budget of the clinic/unit.

The findings related to the nurse decisions regarding their extended role are interesting. Specifically, nurses regularly make decisions related to emergency intervention. This may be since in Greece, medical support is not always available on a 24-hour basis [34]. Therefore, in emergency situations, when doctors are absent, nurses autonomously make decisions and implement actions that normally would require a doctor's involvement. Doctors, on the other hand, 'accept' that nurses intervene when faced with a clinical problem during their absence [35].

Furthermore, the findings of this study demonstrate that nurses, in all clinical settings investigated, do not make decisions on informing patients about their prognosis. This is because doctors are responsible for diagnosing and treating the disease, so patients seek information about their prognosis from the medical staff.

Finally, to a lesser extent, nurses appear to be involved in decisions related to discharging a patient and to changing patient medication. With regard to patient discharge, it is clear that the nurse's role is limited, as the decision related to the patient's discharge is solely a medical task. However, all members of the health care team should be involved in patients discharge. This can be accomplished by making joint decisions with the use of proper communication skills among the members of the multidisciplinary health care team in order to meet the patient's unique health needs [26]. Regarding decisions to change patient medication, nurses are unable to take initiative on this matter mainly because nursing duties and responsibilities in Greece are inadequately defined and there is a lack of clinical guidelines related to many procedures.

Health professionals are called upon daily to take on new roles, having to deal with important issues. This includes staff shortages as well as personal value crisis and thus, significantly affecting the manner and frequency with which clinical decisions are made. The lack of clinical guidelines, professional legal coverage as well as nursing understaffing, lead to limited autonomy of the nursing profession.

It is therefore imperative, especially during these difficult working conditions brought upon by a global pandemic, to redefine the nurse's role as a health professional, scientist and researcher, both to provide quality patient care and to validate the expectations of those who have chosen to serve this profession. Although several attempts have been made to improve nursing in Greece, there is still a need for significant changes.

Ways to improve the situation may include the following:

- establish clearly defined legal nursing duties and responsibilities in Greece
- construct and establish up to date clinical protocols
- recruit nursing staff to meet the increased hospital needs.
- offer nurses incentives for professional development and advancement.

Limitations of Research

The main limitation of this study is the small sample size. Although the results provided important data on the frequency with which clinical decisions are made, it is considered necessary to use a larger sample in future studies in order to produce generalizable results.

Conclusion

Clinical decision-making is an important part of nursing science and daily clinical nursing practice. Nurses' clinical decisions significantly determine the patient's prognosis and outcome, especially in emergency situations. It is therefore of great importance to establish clearly defined legal nursing duties and responsibilities in Greece, that will highlight the multidimensional nursing role. Another important issue is the recruitment of nursing staff and the implementation of clinical protocols to assist nurses in providing quality nursing care.

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