Critical and Medical-Surgical Nurses' Adherence to Professional Nursing Code of Ethics and Quality of Nursing Care Satisfaction

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Abstract

Background: Nursing code of ethics is an essential part of nursing professional practice. Nurses' adherence to a code of ethics is an important pillar of improving their performance, providing good nursing care and achieving patient satisfaction. **This study** aimed to examine relationship between nurses' adherence to an Egyptian professional nursing code of ethical practice and patient satisfaction with quality of nursing care in critical and medical-surgical care units. **Subjects and Method: Study design:** A cross-sectional descriptive correlational study. **Setting**: Critical and medical-surgical care units in Alexandria Main University Hospital. **Subjects:** The study was implemented on 400 nurses and 400 patients. **Study tools:** Data were collected using an observational checklist of nurses' adherence to the Egyptian code of ethical practice and a patient satisfaction questionnaire. **Results:** The nurses' adherence to the code of ethical practice and patient satisfaction with quality of nursing care were found to be below a satisfactory level in critical (48.5%, 43.0, respectively) and medical-surgical care units (46.5%, 37.5%, respectively). There was no significant difference between critical and medical-surgical care units in mean scores of humanity and patient right respect and provision of nursing practice ($p > .05$). However, nurses in critical care units had better adherence to the ethics code compared to nurses in medical-surgical care units. Commitment of nurses to the code of ethical practice had a positive significant effect on patient satisfaction with quality of nursing care. **Conclusions:** An unsatisfactory level of nurses' adherence to the Egyptian code of ethics was the predictive factor of patient dissatisfaction in the study units. This could be contributed to some management and organizational factors that faced nurses during implementing their roles. **Recommendations:** Healthcare organizations should continuously help nurses update their ethical practices and adherence to the nursing code of ethical practice in their workplace.

Keywords: Nurses, Adherence, Code of ethics, Patient satisfaction, Quality of nursing care, Critical, Medical-Surgical

Introduction

Nurses are always keen to provide high quality of nursing care and achieve patient satisfaction in their workplace, but they face a variety of ethical challenges that has a significant impact on their nursing practice **(Abd El-mawgood et al., 2018; Beykmirza et al., 2022)**. Ethical challenges could result from rapid innovations in medical technology, changing dynamics of the health care system and increasing demands for quality of care with raising overload and cost of health services **(Abed El-mawgood et al., 2018; Beykmirza et al., 2022)**.

Nurses need to address the nursing code of ethical practice (NCEP) in their daily activities to regulate their specific actions and guide their nursing decisions to face ethical dilemmas and new challenges in health care settings **(Poorchangizi et al. , 2019 ; Beykmirza et al., 2022; Momennasab et al., 2023)**. When nurses are properly guided to use NCEP in their practice, this would enhance proper patient care and satisfaction constituting **(Yeboah – asuama, 2015; Abd El-mawgood et al., 2018)**.

NCEP is an essential and crucial feature of the nursing profession; in addition to it is the cornerstone of nursing practice (**Hunt, 2020; Poreddi et al., 2022**). NCEP can be defined as "a set of normative principles that underlie a nurse's purpose and associated values" **(Bah & Sey-Sawo, 2018; Kumah et al., 2020)**. It guides nurses' behaviors to achieve the standards of the nursing profession, quality of nursing care and patient safety (**Abd El-mawgood et al., 2018; Poreddi et al., 2022**). Nurses should pay their attention to adhere to the NCEP for safeguarding patients' rights and achieving patient satisfaction with the quality of nursing care (**Bah & Sey-Sawo, 2018; Momennasab et al., 2023**).

Nurses in critical and medical-surgical care units need to continually adhere to the NCEP to ensure optimal patient care and make the best decisions for their patients when faced with challenges that require clinical and ethical decision-making. Patients in critical care units and

medical-surgical care units are a highly vulnerable group and it is thus necessary to be sensitive to observing their rights and their provision of nursing care (**Bah & Sey-Sawo, 2018; Toumová et al., 2021, Momennasab et al., 2023**).

Significance of the study

Nurses' adherence to the NCEP is one of the most critical aspects of quality health service delivery. Delivery of health care service relies on the way of interaction between nurses and patients, which affects the patients' perception and satisfaction with health care services (**Abd El-mawgood et al., 2018; Beykmirza et al., 2022)**. Non-adherence to NCEP has major adversely affecting not only affecting the quality of services that patients receive but also affecting the reputation of nursing practice in hospitals and causing costly lawsuits and other legal charges raised by patients (**Abd El-mawgood et al., 2018, Kumah et al., 2020**).

Globally, there is a surge of research addressing compliance with NCEP by nurses from the perspective of patients, administrators, nurses and student nurses in various healthcare settings (**Mohajjel et al., 2013; Lakeh et al., 2014; Foroutan et al., 2015; Momennasab et al., 2016; Bijani et al., 2017; Jafarimanesh et al., 2020; Kumah et al., 2020; Poreddi et al., 2022**). However, nurses' adherence to NCEP and patient satisfaction were not comprehensively studied. Only a study in Iran (2020) addressed the relationship between nurses' compliance to NCEP and patient satisfaction with nurses' performance from the patient's perspective (**Izadi et al., 2020**). Even though few studies investigated nurses' adherence to the NCEP in Egypt (Abd **El-mawgood et al., 2018; Ali et al., 2018**), the relation between nurses' adherence to professional NCEP and patient satisfaction was not broadly studied.

Aims of the study

The present study aimed to:

(1) Assess level of nurses' adherence to an Egyptian nursing code of ethical practice (NCEP).
(2) Assess level of patient satisfaction with quality of nursing care.
(3) Examine the relationship between nurses' adherence to an Egyptian professional NCEP and patient satisfaction with quality of nursing care.

Research questions:

The current work included three research questions:

(1) How much does a convenience sample of nurses in critical and medical-surgical units in Alexandria Main University Hospital adhere to the Egyptian NCEP?
(2) What is the level of patient satisfaction with nursing care provided to them in these units?
(3) Does adherence of nurses to Egyptian NCEP have a positive effect on patient satisfaction in these units?

Subjects and Method

Research design:

A cross-sectional descriptive correlational design was used to achieve the study's aims.

Settings:

The study was conducted at the critical and medical-surgical care units (wards) in the Alexandria Main University Hospital.

Subjects:

The study was carried out on nurses and patients in the study units, as follows:

Nurses: A convenience sampling was carried out on 400 nurses; 200 nurses in critical care units and 200 nurses in medical-surgical care units. Only nurses who provided direct patient care and were willing to participate were included in the study.

Patients: According to reviewing admission and discharge records of the study units, the numbers of admissions of the study units were 1000 patients throughout three months. The sample size was calculated according to Slovine's formula (1960). This formula was $n=N/1+Ne^2$ (n= simple size, N=population, e= level of confidence at 0.05). The estimated sample size was 400 alert, conscious and educated patients, 200 patients from critical care units and 200 patients from medical-surgical care units. All patients who were less than 18 years old, unaware or could not communicate during data collection were excluded from the study.

Study tools:

Face validity was achieved by reviewing the literature to design study tools (**Laschinger et al., 2005; Egyptian nursing syndicate, 2021**). The study tools included four tools:

- **Tool (I): Nurses' and patients' socio-demographic questionnaire:**

It was developed to collect data regarding the nurses' and patients' socio-demographic characteristics. It was related to patients' age, gender, educational level, medical condition, duration of hospitalization, nurses' age, and experience and job title.

- **Tool (II): Source of nurses' knowledge questionnaire:**

It was developed to assess source of nurses' knowledge about Egyptian code of ethics related

to undergraduate lectures, syndicate booklet on hiring, work experience, colleagues, training, workshops and conferences. The source of nurses' knowledge was measured using a binary scale of yes=1 and no =0.

- **Tool (III): Observational checklist of nurses' adherence to an Egyptian professional NCEP**:

It was designed by researchers and based on the professional nursing code of ethics of the Egyptian nursing syndicate for assessing the level of the nurses' adherence to an Egyptian professional NCEP (**Egyptian nursing syndicate, 2021)**. The observational checklist included 24 practices covering two aspects, namely; the respect of humanity and patient rights (8 items) and provision of nursing care (16 items). Each item of the checklist was rated by three ranking scales (never practice (0 points) or sometimes practice (0.5 points) and always practice (1 point).

Scoring system

The maximum possible score for the observational checklist was 24. Furthermore, nurses' adherence to the Egyptian professional NCEP was considered unsatisfactory adherence if the score was less than or equal to 14 (less than 60 %) and satisfactory adherence if the score was 15 to 24 (equal or more than 60 %).

- **Tool (IV): Questionnaire about patient satisfaction with the quality of nursing care:**

It was developed by **Laschinger et al. (2005).** It contained 22 questionnaire items covering 22 aspects of nursing practice for measuring patient satisfaction with the quality of nursing care in the study units. Patient satisfaction with quality of nursing care was measured by five Likert scales ranging from 1 = poor and 5 = excellent.

Scoring system

The maximum scores were 110 points and patients were satisfied with the quality of nursing care when mean scores were equal or more than 66 points (≥ 60 %).

Validity of the study tools:

Content validity was accomplished through five experts in the same field. They agreed on the observational checklist and questionnaire items using a five ranking Likert scale (1= invalid to this study to 5= valid to this study). For ensuring the appropriateness and clarity of the study tools, necessary modifications were only needed for the observational checking according to the experts' comments regarding wording changes.

Reliability of the study tools:

Agreement and consensus among experts for measuring inter-rater reliability were attained using the content validity index (CVI). The cut point of CVI of the observational checklist and questionnaires was equal and greater than 80 %. The observational checklist was translated from Arabic into English and retranslated into Arabic, whereas the contrary was done for questionnaires for ensuring consistency. The alpha coefficient reliability of observational checklist of nurses' adherence to an Egyptian professional NCEP was .82, while the alpha coefficient of questionnaire about patient satisfaction with the quality of nursing care was .92

Pilot study and Test-retest reliability:

A pilot study was conducted on 10 % of the sample size (40 patients and 40 nurses) to assess clearly, simplicity and comprehensiveness of the study tools. Additionally, test-retest reliability was assessed using Pearson's correlation from time 1 and time 2, where the same 40 patients completed the questionnaire and 40 nurses were observed two times. Test-retest reliability was .82 for the source of nurses' knowledge and .87 for the patient satisfaction questionnaire.

Data Collection:

The researchers interviewed patients and nurses to describe the study, answer the questions and clarify the questionnaire and observation items. The patients were asked to rate the quality of nursing care they received during their hospitalization using five Likert scales ranging from 1 = poor and 5 = excellent. The patient questionnaire was filled by the patients in 20-30 minutes. Also, the nurses identified their source of knowledge using a binary scale of yes =1 and no = 0. The source of nurses' knowledge questionnaire was filled in 10 minutes.

Additionally, the researchers observed nurses using intermittent observation technique. Researchers observed nurses in an irregular and unpredictable manner, three times during their provided care to patients. The researchers rated the nurses' adherence to the Egyptian professional NCEP using three ranking scales (never practice (0 points) or sometimes practice (0.5 points) and always practice (1 point).

Ethical Consideration:

The ethics Committee of the Faculty of Medicine at Alexandria University and Faculty of Nursing at Matrouh University agreed to the research protocol before the conduct of the study. All participants provided informed consent and they had the right to withdraw from the study at any time. The researchers assured participants that the confidentiality and anonymity of the study data were maintained through a coding number system of the study tools.

Statistical Analysis:

Statistical analysis was achieved through (SPSS) version 24.0. Descriptive statistics (frequencies, percentages, mean, and standard deviation) were used to assess the nurses' adherence to an Egyptian NCEP. Student t-test and Chi-square test were used to compare differences between nurses and patients in critical and medical-surgical care units. The correlation coefficient and linear regression were used to investigate the relationship between study variables.

Results

Demographic data of the participants

More than a third of the patients in critical and medical-surgical care units had age groups between 40 to 59 years (34 % and 36% respectively). More than a half of the patients in critical and medical-surgical care units had education on a secondary school level (63 and 65 %, respectively) (**Table 1**).

As shown in table (1), more than a third of critical care and medical-surgical care nurses were aged between 30 and 39 years (43.0%, 37 %, respectively) and had work experience in their units ranging from 10 to 19 years (38.5 % and 35.5%, respectively). Critical and medical-surgical care nurses were professional (36% and 7.5 respectively), technical (65.0 and 9.0, respectively) and staff nurses (57.5 and 83.5, respectively). The main source of nurses' knowledge about NCEP was undergraduate lectures and a syndicate booklet (100.0%) for critical and medical-surgical care nurses.

Levels of study variables

The nurses attaining adherence to the Egyptian NCEP at a satisfactory level, constituted about 48.5 % in critical and 46.4 % in medical-surgical care units. Patients who showed satisfaction in critical and medical - surgical care units constituted about 43.0 % and 37.5% respectively (**Table 2**).

Mean scores of study variables

There were no statistically significant differences in mean scores between critical and medical–surgical care units regarding nurses' adherence to the respect of humanity and patient rights (p =.532) and provision of care aspects of NCEP (p=.477) as well as patient satisfaction (p=.152) (**Table 3**).

Percentages of observational nurse variables

Based on the study results, there was no significant difference between nurses in critical and medical-surgical care units regarding the majority of items of adherence to the NECP ($p > .05$) (**Table 4**).

Regarding respect of humanity and patient right, the nurses in both critical and medical-surgical care units had a reasonable adherence to NECP related to respect of humanity and patient right aspects, such as " deal with the patient as a distinct individual irrespective to his/her characteristics, maintain the privacy of the patient during providing the medical and nursing procedures and keep confidentiality of medical records". Nevertheless, nurses in both critical and medical-surgical care units showed low adherence to the NCEP concerning respect of humanity and patient right aspect pertained to "introduce him/her and his/her job to the patient" (**Table 4**).

On the other hand, nurses in critical care units had a significantly higher adherence to all NCEP compared to nurses in medical-surgical care units, especially in helping patient decision making, providing the nursing procedure in timely and a correct manner and cooperating with colleagues and other health care team to respond to the patient's health needs ($p \leq .05$) (**Table 4**).

Adherence to the NCEP was relatively low in both critical and medical-surgical care units, regarding the provision of nursing care in relation to "commit to general patient safety principles while providing nursing care, use all the safety measures to maintain the environment of the hospital safe, consider the somatic and mental capabilities of the patient, report the problems that the patient faces to his/her superiors and search the patient satisfaction during nursing care"(**Table 4**).

Relationship between nurses' adherence and patient satisfaction

As shown by the correlation and regression analysis, the nurses' adherence to the NCEP had a positive significant relationship and effects on patient satisfaction with the quality of nursing care in critical ($r = .499$, $R^2 = .249$) and medical-surgical care units ($r = .382$, $R^2 = .146$). B value indicated that as nurses' adherence to NCEP increased, patient satisfaction with the quality of nursing care also increased in critical (B=.240) and surgical care units (B=.434) (**Table 5**).

Table (1): Nurses and patients' characteristics in critical and medical-surgical care units

Nurses' characteristics	Critical (n=200) No. (%)	Medical – Surgical (n=200) No. (%)	Patients Characteristic	Critical (n=200) No. (%)	Medical – Surgical (n=200) No. (%)
Age (year)			**Age (year)**		
< 30	66 (33.0)	59 (29.5)	< 30	28(14.0)	35 (17.5)
30-39	86(43.0)	74(37.0)	30-39	58(29.0)	55 (27.5)
40-49	37(18.5)	43(21.5)	40-59	68 (34.0)	72(36.0)
≥ 50	11(5.5)	24(12.0)	≥ 60	46 (23.0)	38(19.0)
Job title			**Gender**		
Professional nurses	72(36.0)	15(7.5)	Male	80(40.0)	84(42.0)
Technical nurses	13 (65.0)	18(9.0)	Female	120(60.0)	116 (58.0)
Staff nurses	115(57.5)	167(83.5)	**Education level**		
			Secondary school	126 (63.0)	130 (65.0)
Experience			University/college	74 (37.0)	70(35.0)
			Major clinical		
<10	82(41.0)	75(37.5)	**conditions**		
10-	77(38.5)	71(35.5)	Medical condition	77 (38.5)	90 (45.0)
≥ 20	41(20.5)	54(27.0)	Surgical procedure	25(12.5)	83(41.5)
Source of ethical knowledge			Invasive procedure	98 (49.0)	27 (13.5)
Undergraduate lecture	200(100.0)	200(100.0)	**Length of stay (days)**		
Syndicate booklet during hiring	200(100.0)	200(100.0)	1-3	20 (10.0)	24(12.0)
Work experience	155 (77.5)	150 (75.0)	4-6	50 (25.0)	70(35.0)
Colleagues	107(53.5)	120 (60.0)	≥ 7	130(65.0)	106(53.0)
Training	0(0.0)	0 (0.0)			
Workshop& Conference	53(26.5)	23 (11.5)			

Table (2): Levels of nurses' adherence to the professional NCEP, patient satisfaction with nursing care quality

Levels	The study units	
	Critical (n=200) No. (%)	Medical-Surgical (n=200) No. (%)
Nurses' Adherence to the NCEP		
Satisfactory adherence	97 (48.5)	93 (46.5)
Unsatisfactory adherence	103 (51.5)	107(53.5)
Patient satisfaction		
Satisfied	86(43.0)	75(37.5)
Unsatisfied	114(57.0)	125(62.5)

Table (3): Mean scores of nurses' adherence to NCEP and patient satisfaction

Variables	Critical		Medical - Surgical	p value *
	Min- Max	Mean ± score	Mean ± score	
Adherence to the NCEP aspects				
Respect of humanity and patient rights	1-8	4.67±1.88	4.66±1.84	.532
Provision of nursing care practice	1-16	8.25±4.94	7.76±4.80	.477
Patient satisfaction	1-100	48.94±7.19	47.09±10.03	.152

***Simple (t) test was significant at ≤ 0.05**

Table (4): Comparison between critical and medical-surgical care nurses regarding adherence to the Egyptian NCEP

Nurse	% of adherence		
	Critical	Medical-Surgical	p-value*
Humanity and patient right respect			
1. Introduce him/her and his/her job to the patient.	15.0	13.0	.320
2. Provide nursing care with respect and attention, guarding the patient's human dignity.	65.0	60.0	.249
3. Deal with the patient as a distinct individual irrespective of his/her characteristics (gender, age, religion, ethnicity, political belief, medical diagnosis, any personal characteristics as well as his/her social, economic and educational level).	86.0	80.0	.214
4. Listen carefully to the patient and take the patient's words and expressions seriously.	50.0	46.0	.311
5. Communicate with the patient using clear and understandable language and simple methods as well as respond to all the questions posed by the patient.	54.0	45.0	.178
6. Maintain the privacy of the patient and his/her rights while providing medical examination and nursing procedures.	89.0	82.0	.510
7. Keep the patient medical data confidential by protecting the data of the patient's medical record and restricting access to the records to the concerned health team.	82.0	80.0	.371
8. Not to blame the patient, at the time of providing particular care, for any omission or noncompliance to medical advice provided earlier for the same care.	55.0	50.0	.260
Provision of nursing care practice			
1. Kindly respond to the patient's medical needs in a timely manner.	89.0	85.0	.204
2. Complete and sign the informed written consent from the patient or his/her next-to-kin for diagnostic and other nursing procedures indicated for his/her health status.	54.0	46.0	.228
3. Help the patient in decision-making regarding the nursing care provided to him/her. In case of refusal, the nurse should try her best to convince the patient by elaborating on the importance of the care.	46.0	20.0	.000
4. Provide complete information to the patient about his/her diagnosis and nursing procedures that will be provided to him/her and included and documented in the medical files.	60.0	56.0	.303
5. Provide correct and safe care, based on comprehensive professional knowledge of the nursing procedures provided and the tools/material used in these procedures.	66.0	57.0	.191
6. Provide the nursing procedure in a timely manner.	96.0	85.0	.007
7. Correctly provide the nursing procedures.	96.0	85.0.	.007
8. Maintain the quality of the nursing care during the nursing procedure.	66.0	57.0	.104
9. Accurately evaluate the pain and work on relieving it and alleviating its effects.	66.0	57.0	.104
10. Cooperate with colleagues and other health care teams respond to the patient's health needs according to his/her medical status or health service needs.	79.0	53.0	.000
11. Document the nursing procedures correctly and honestly in the patient file and registries or records of the facility.	94.0	89.0	.146
12. Commit to the general patient safety principles while providing a nursing care bearing in mind the expected risks in case of incorrect provision.	33.0	25.0	.128
13. Report the problems that the patient faces to superiors.	17.0	10.0	.102
14. Search the patient satisfaction during nursing care. In case of refusal of care from a particular nurse, his/her demand should be respected	11.0	10.0	.490
15. Use all the safety measures to maintain the environment of the hospital safe and convenient as well as far from hazards for patients.	33.0	25.0	.128
16. Consider the somatic and mental capabilities of the patient.	33.0	25.0	.128

***Chi-square test was significant at ≤ 0.05**

Table (5): Relationship between nurses' adherence to NECP and patient satisfaction with nursing care quality, using linear regression

Variables	Nurses' adherence to the professional NCEP											
	Critical						Medical-Surgical					
	r	Standardized Coefficients Beta	Unstandardized Coefficients		R^2	t-test (sig.)	r	Standardized Coefficients Beta	Unstandardized Coefficients		R^2	t-test (sig.)
			B	Std. Error					B	Std. Error		
Patient satisfaction with quality nursing care	.499*	.499	.240	.041	.249	8.196 (.000)	.382*	.382	.434	.103	.146	5.829 (.000)

***Correlation (r) was significant at ≤ 0.05**

Discussion

Nurses are constituted as one of the main healthcare providers who are responsible for giving care to patients based on ethical practice (**Poorchangizi et al., 2019; Amiri et al., 2020**). The Nursing code of ethical practice (NCEP) enlightens the nurses during delivering nursing care services and providing quality of care to their patients. Patient satisfaction is one of the important indicators for assessing the quality of nursing care (**Safitri et al. 2020; Poreddi et al., 2021**). Therefore, the present study aimed to examine the relationship between nurses' adherence to an Egyptian professional NCEP and patient satisfaction with the quality of nursing care.

It was worthy to notice from the present results that less than half the nurses showed a satisfactory level of adherence to an Egyptian NCEP in the study units. This can be explained by the fact that they might not know the ethical principles that regulated and guided their nursing care. Most of the sample size in the current study was staff nurses. They graduated from the secondary school of nursing where the ethical practices may not be fully and comprehensively taught. This study was supported by a study in Gambia (2018) which found that educational level affected the proper practicing code of ethics among nurses (**Bah & Sey-Sawo, 2018**).

Commitment to ethical nursing code in this study was also compared with another study in Iran, where the adherence to NCEP was at an unsatisfactory level of about 51.8 % (**Mohajje et al., 2013**). Otherwise, the current study was in line with Egypt, Pakistan, and Northwest and South-East Ethiopia studies, which found that 48%, 50%, 45.6% and 46.7 of health professionals and nurses had poor practices of code of health care ethics (**Mohamed et al., 2012; Imran et al., 2014; Name et al., 2019; Yeshineh et al., 2022**).

However, the current finding was incongruent with the Egyptian study in 2016 which found that the nurses had adequate practice of the professional code of ethics among nurses in outpatient and hemodialysis units (**Hafez et al., 2016; Ali et al., 2018**). The present study also disagreed with other studies in Iran (2016 and 2023) (**Momennasab et al., 2016; Momennasab et al., 2023**), Ethiopia (2022) (**Haile, 2022**) and Indonesia (2020) (**Safitri et al., 2020**), which found that nurses' adherence to NECP was at a satisfactory level.

The discrepancies between the current study and other studies could be attributed to the fact that the present study was carried out in critical and medical-surgical care units where nurses may face more challenges. Moreover, training programs about nursing ethics were not provided in the study units.

Haile (2022) stated that the professional NCEP could be influenced by different parameters such as socioeconomic and cultural characteristics, organizational, and customer safety, experiences, as well as leadership quality. Peer pressure, workload and existence of role models could also be critical factors, in addition to training programs and management support activities.

The findings of the present study showed that there were no significant differences between mean scores of nurses' adherence to the NCEP in critical and medical–surgical care units in both aspects of humanity, respecting patient rights and the provision of nursing care practice.

The nurses in both critical and medical-surgical care units in the present study had reasonable adherence to NECP related to humanity and respecting patient rights, especially in dealing with the patient without discrimination to his/her characteristics, maintaining the privacy and keeping confidentiality of medical records. A similar finding was found in studies in Egypt (2015) **(Ghanem et al., 2015**), Ghana (2020) (**Kumah et al., 2020**) and India (2021) (**Poreddi et al., 2021**), which concluded that nurses

provided care to patients in a respectful manner, keeping human patient rights.

Nurses in all units of the current study showed low adherence to the NCEP concerning introducing themselves and their jobs to the patient. This was in agreement with **Koshkaki et al. (2016), Kumah et al. (2020)** studies. Improper nurses' personal introduction to patients could hinder good relationships and quality of patient care and patient satisfaction.

However, regarding provision of nursing care practice, a significantly higher adherence to NCEP was noticed among nurses in critical care units compared to medical- surgical care units, especially in helping patient decision making and correct provision of care, in a timely manner and cooperating with other health care providers. These findings were not surprising because patients in critical care units are highly vulnerable, requiring complex care and rapid response compared to other hospital wards (**Momennasab et al., 2023**).

In this respect, adherence to the NCEP was relatively low in both critical and medical-surgical care units, particularly in the provision of nursing care related to commitment to general patient safety principles, maintaining hospital safe environment, considering somatic and mental capabilities of patients, reporting patient problems to superiors and searching the patient satisfaction during nursing care. These items might not be considered as an essential nursing care compared to other provision care items from the nurses' perspectives.

Caring is referred to as the core of NCEP. Patients' perceptions of having a caring nurse seem proportional to their expectations of quality nursing care (**Bah & Sey-Sawo, 2018; Poreddi et al., 2021**). The present study showed the unsatisfactory level of nurses' adherence to NCEP had direct significant impact on patient satisfaction in both critical and surgical care units.

These results can be attributed to the fact that nurses in the study units were faced with increased number of admissions, declining patient-nursing staff ratio and lack of workplace facilities and resources. Because of this, nurses could not spend more time with their patients for proper listening and caring for them due to time constraints and heavy workload.

Similar results were found in international studies conducted between 2003 to 2022 which revealed that time limitation and shortage in nursing personnel with increasing numbers of patients were the major barriers against proper application of NCEP and quality of nursing care (**Bennett et al., 2003; Aliyu et al., 2015; Ghanem et al., 2015; Bah & Sey-Sawo, 2018; Jafarimanesh et al., 2020; Safitri et al., 2020; Asare et al., 2022; Haile, 2022**). This similarity proved that barriers to adherence to the NCEP were similar among nurses in different locations around the world.

Conclusion and recommendations

The present study pointed out that the nurses' adherence to the NCEP in critical and medical-surgical care units were at below sufficient level in the both aspects of humanity and patient right respect and the provision of nursing care. The nurses in both critical and medical-surgical care units had a reasonable adherence to the NECP, particularly in providing care to patients in a respectful manner and keeping human rights of all individuals. Critical care nurses had better adherence to the NCEP compared to medical-surgical nurses.

The results of the present study showed that unsatisfactory nurses' adherence to the NCEP led to patient dissatisfaction with the quality of nursing care. Nurses' adherence to NCEP had a significant positive correlation with and effect on patient satisfaction with the quality of nursing care, which can be attributed to management and organizational factors in the study units

Healthcare organizations should continuously help nurses update their ethical practices and adherence to NCEP through: developing, maintaining and monitoring standards of application of NCEP; providing seminars or workshops and practical training on NCEP for nurses, especially in intensive care and medical-surgical units and embedding evaluation criteria of NCEP into the performance evaluation system. The nursing syndicates should play an effective role in regularly enhancing and evaluating the nurses' ethical behavior and identifying barriers facing nurses' adherence to NCEP.

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