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Performance Obstacles in ICU and Their Effects on Patients` Safety at Selected Hospitals in Jazan Region, KSA

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Abstract: *Obstacles to nurse's performance are the barriers that prevent intensive care nurses from performing their duty effectively. It is now widely accepted that about 10% of all patients admitted to hospital will be unintentionally harmed. Patient safety refers to the prevention of errors to patients during health care.*
Aim: *to explore performance obstacles in ICU and their effects on patients` safety.*
Objectives *are to: investigate performance obstacles in ICU among nurses, describe patient safety attitude among ICU nurses and to identify the effect of performance obstacles on patient safety in ICU.* ***Research design is*** *descriptive exploratory research design.*
Setting: *the study was conducted at ICUs and NICUs in the following hospitals in Jazan Region, KSA: Jazan General Hospital, Sabia General Hospital, and Abu Arish General Hospital.*
Subjects: *69 critical care nurses.*
Tools*: questionnaire for Socio- demographic data, Performance Obstacles of ICU Nurses Questionnaire, Safety Attitude questionnaire (ICU version).*
Results*: Performance obstacles in ICU were related to environment, equipments and task. Receiving many phone calls or messages from patient`s family, The change of shift report(s) took longer than they should, the central stock area is not well stocked, and orientation of new nurses. Moderate level of patient safety*.

Recommendations: *Policy makers must develop strategy, protocol, or system to eliminate performance obstacles related to misplacement of equipment, supplies, Hospital should recruit nursing assistants and unit clerks to decrease work load on nurses.*
Keywords: *ICU, nurses, obstacles, patient safety*

I. Introduction

Patient safety refers to the prevention of errors and adverse effects to patients associated with health care (WHO, 2014).Essential Practices to keep patient safe include: identifying patients correctly, using medicines safely, avoiding surgical errors, utilizing good hospital design principles, rapid response systems, sharing data for quality improvement and fostering an open-communication culture (Kreimer, 2010). ICU staff nurse provide care to patients with highly critical medical conditions e.g. invasive surgery, accidents, trauma or organ failure (Jacksonville University, 2014). Duties of ICU nurses include: continuous monitoring patients, coordinating care provided by other members of health care team; and (3) develop discharge planning for the patient and family (Needleman & Hassmiller, 2009). Performance obstacles are barriers that hinder nurses' capacity to perform their jobs. ICU Performance obstacles affect patient safety (Gurses, Carayon and Wall, 2009).

"Critical care nursing is that specialty within nursing that deals specifically with human responses to life-threatening problems. An intensive care nurse is a licensed professional nurse who is responsible for providing high quality care to critically ill patients "(American association of critical care nurses, 2014). ICU is a stressful environment to patients. This stress is caused by the disease process, pain, and medication, therapeutic and diagnostic procedure. Moreover, the physical structure of the ICU environment which include monitors, ventilators and other equipments. ICU environment lead to a syndrome called ICU psychosis. Frequently reported stressful factors in ICU are noise, frequent alarms, ambient light, restriction of mobility, and social separation (Wenham & pittard, 2009).Challenges to staff working in ICU include: high complexity of care needed by the patient, high level of stress to family and ICU staff, high rate of errors and complications, and about 120 alarm/ patient day (Ravitz and Sapirstein, 2011). ICU nurses have a significant role in recovery of patient. They must perform procedures efficiently and accurately, to help critically ill patients ICU nursing is a challenging specialty in which nurses provide care for patients under critical condition (Keshk, Qalawa &Aly, 2012) and (Villanova University, 2014).Skills that required for ICU nurses to provide maximum patient care include: Knowledge of pathology, ability to determine and arrange priorities of patient care needs,

communication skills, knowledge on normal values, ability to work in and cope with stress, medication administration, wound care, hygiene and nutrition (Swinny, 2010).

Critical care nurses should have knowledge, skills and experience to provide high quality care to patients. ICU nurses advocate for patient, provide direct and indirect care to patient, health teaching to patient and family, and conduct researches (American association of critical care nurses, 2014). ICU safety culture is an important issue that hospital managers should prioritize (Alayed , Lööf & Johansson ,2014). According to Premier (2014) safety refers to freedom from accidental injury. Error means the inability to complete an action effectively as planned. Sources of errors include problems in clinical practice, equipments, supplies, and/or organization systems. Adverse event is a complication resulting from care. It is now widely accepted that about 10% of all patients admitted to hospital will be unintentionally harmed (NHS, 2012). Adverse events are medical errors that could and should be avoided by health care providers, e.g. communication failure during handoffs, unclear communication in critical situations, lack of clear protocols, lack of knowledge of products or equipment unavailable or not working, and ineffective education (Washington State Department of Health, 2014). The estimated cost of adverse events in USA is$US8 to $US14.5 billion (Allen, 2009).Patient safety has received an increasing attention worldwide. In Saudi Arabia, patient safety is a priority issue, policy makers and health care organizations spend great deal of efforts to enhance quality and patient care safety. To improve patient safety hospitals should establish non punitive culture, supportive climate, shared decision making and staff development programs (Al- Ahmadi, 2009).

Types of patient safety problems include side effects from medication and improper blood transfusions, wrong-site surgery, patient falls, burns, pressure ulcers, and mistaken patient identities. High error rates with serious consequences are most likely to occur in intensive care units, operating rooms, and emergency departments (Institute Of Medicine, 1999). Near misses are defined as occurrence that could have caused adverse consequences and harmed a patient, but did not. (Hughes, 2008). Reporting adverse event requires identifying an adverse event, report the adverse event, explore the cause of the event through root cause analysis, and use the result of the analysis to make improvement (Washington State Department of Health, 2014).Culture is the shared attitudes, values, goals, and practices that characterize an institution or organization. Patient safety culture is considered common in an organization if each employee in that organization assumes an active role in error prevention and that role is supported by the organization (Elizabeth, 2011). International patient safety goals include correct patient identification, improve effective communication, improve the safety of high-alert medications, ensure correct-site, correct-procedure, correct-patient surgery, reduce the risk of health care–associated infections; reduce the risk of patient harm resulting from falls (Joint Commission, 2009). Strategies to promote patient safety include: prophylactic treatment to avoid deep venous thrombosis in patients at risk, use of aseptic technique and infection control measures during the provision of care to prevent infection, ensure that patient understands all information during informed-consent process, use of appropriate care measures to prevent bed sores, appropriate provision of nutrition (Kennedy &Heard, 2001).

Significance of the study:

Kopp et al. (2006) and Gurses, Carayon & Wall (2009) asserted that for every five medication doses administered in ICU there is one medication error. Moreover, In KSA(Kingdom Of Saudi Arabia) there is limited research in the area of adverse drug reaction during hospitalization which in turn affects patient safety and 60% of the reactions can be prevented (Al Malaq, Al Aqeel & Al Sultan (2008). Performance obstacles increase nursing workload, which in turn negatively affect perceived quality and safety of care .The issue of performance obstacles in ICU and its effect on patient safety are not adequately addressed in Jazan,KSA. Therefore, it is necessary to generate relevant evidence through a detailed study to guide the Ministry Of Health and other health partners to develop strategies to address performance obstacles in ICU and improve patient safety.

Aim of the study:

To explore performance obstacles in ICU among nurses and their effects on patient safety at selected hospitals in Jazan Region, KSA.

Objectives:

The specific objectives for this study were to:

1. Investigate performance obstacles in ICU among nurses.
2. Describe patient safety attitude among ICU nurses.
3. Identify the effect of performance obstacles on patient safety in ICU.

Research design:
Descriptive exploratory research design. This design is suitable for the study objectives and is appropriate for the setting.

Setting:
The study was conducted at ICU and NICUs in the following hospitals in Jazan Region, KSA: Jazan General Hospital, Sabia General Hospital and Abu Arish General Hospital.

Subjects:
All ICU nurses from the above mentioned hospitals who accepted to participate in the study was included.The study subjects included critical care staff nurses and neonatal staff nurses. The inclusion criterion is to have at least one year of experience in the unit. The total number of staff nurses included in the study was 69 nurses. The sample size is calculated using soft ware and based on confidence level of 95% and confidence interval of 5% this give a sample size of 87 staff nurses.

Tools for data collection:

I- Tool for Socio demographic data: it will contain information related to demographic characteristics of critical care nurses these characteristics include: sex, age, nationality, social status, qualifications, job position, total experience, experience in intensive care units, and daily work hours in ICU, daily number of patients that nurse provide care for and number of nursing assistance.

II- Performance Obstacles of ICU Nurses Questionnaire developed by Gurses & Carayon (2007). This questionnaire provides information about the positive and negative aspects of working environment and working conditions for nurses in ICU during a particular shift. The total number of items in the questionnaire is 37 items. The researcher arranged Performance obstacles of ICU nurses questionnaire into three main parts:

Part one contains 23 items arranged into 4 domains.

1. Performance obstacles related to ICU work environment: it contains 5 items.
2. Performance obstacles related to organization: it contains 7 items.
3. Performance obstacles related to equipments or tools: it contains 7 items.
4. Performance obstacles related to task: it contains 4 items.

These 23 have a dichotomous scale; the response for these items will be in yes, or no.

Part two: is related to help that ICU nurse receives from nursing assistance, other nurses and unit clerks. It contains 9 items. These items are concerned with time, adequacy and usefulness of the assistance. In the 1st three items, the response will be rated in 3 point Likert scale includes no assistance, late assistance and timely. In the 2nd three items the response will be rated as inadequate, adequate to some degree, and adequate. The last 3 items will be rated as useless, useful to some degree and useful.

Part three contains 5 items related to work place condition. The questionnaire will took about 15 minutes to fill out. The questionnaire was translated and modified by the researcher to be suitable and easy for nurses to complete. Also, validity of the questionnaire was assessed.

III Safety Attitude questionnaire (ICU version) developed by Sexton, Thomas & Helmreich (2006). "The Safety Attitudes Questionnaire demonstrated good psychometric properties. Healthcare organizations can use the survey to measure caregiver attitudes about six patient safety-related domains, to compare themselves with other organizations, to prompt interventions to improve safety attitudes and to measure the effectiveness of these interventions. The Safety Attitudes Questionnaire (SAQ) is a refinement of the Intensive Care Unit Management Attitudes Questionnaire" (Sexton et al., 2006).

The questionnaire contains 64 items arranged in 6 domains namely: teamwork climate, job satisfaction, perception of management, safety climate, working condition, and stress recognition. The response to questionnaire items are in 5 point Likert scale ranged from strongly disagree (1) to strongly agree (5). This questionnaire takes about 10 minutes to be answered. The questionnaire will be translated and modified by the researcher to be suitable and easy for nurses to complete. Also, validity of the questionnaire will be assessed through pilot study and expert opinions. Tools of data collection will be handed to six assistant professors and 10 lecturers in Faculty of Nursing and Allied Health Sciences, Jazan University; and 4 experts in nursing administration in different KSA universities to assess the clarity and content validity, criterion related validity and reliability of the study questionnaires.

II. Administrative design

Before starting the actual data collection process administrative approval for the research was taken from the director of health affairs at Jazan and the nursing director in each hospital.

Pilot study:

Before any attempt for data collection a pilot study was carried out on 15 ICU staff nurses (not included in the main study subjects). The purpose of the pilot study is to ascertain the clarity, applicability of the study tools and to identify the obstacles and problems that may be encountered during data collection. Based on the findings obtained the necessary modifications were done and some statements were reworded.

Ethical consideration:

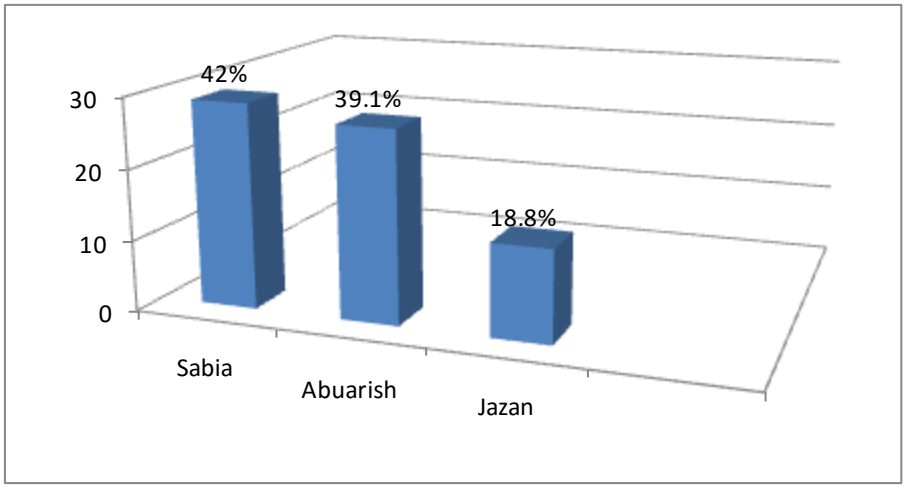
Ethical approval for the study was taken from Regional Health Administration in Jazan and the Medical Research Center in Jazan University. The purpose and benefits of the study explained to director of nursing in each hospital, nurse unit managers of the ICUs and ICU staff nurses. The study adhered to the ethical principle of beneficence. Also, confidentiality of information assured to participants and the researcher explained that the information will be obtained through self administered questionnaires; no one of in the hospital knew that these information or opinions of specific person; it is not required to write the name of respondent on the questionnaire. There is no any threats for the nurse`s contract; Information will be used only for the purpose of research.

Analysis of the Results:

The appropriate statistical methods will be used for analysis of the result. The collected data will be analyzed and tabulated using the statistical package for the social sciences (SPSS) version 20. Arithmetic mean and standard deviation were calculated for quantitative data. Qualitative data was analyzed using frequencies and percentages. Person`s correlation was used to test the correlation between performance obstacles and patient safety.

III. Results

Figure (1) Distribution of Study Subjects According To Hospital



According to this figure, the total number of study subjects was 69 nurses, they distributed as 42% from Sabia General Hospital , 39.1% were from Abu Arish General Hospital and 18.8% were from Jazan general hospital.

Figure (2) Distribution of Study Subjects According To Unit

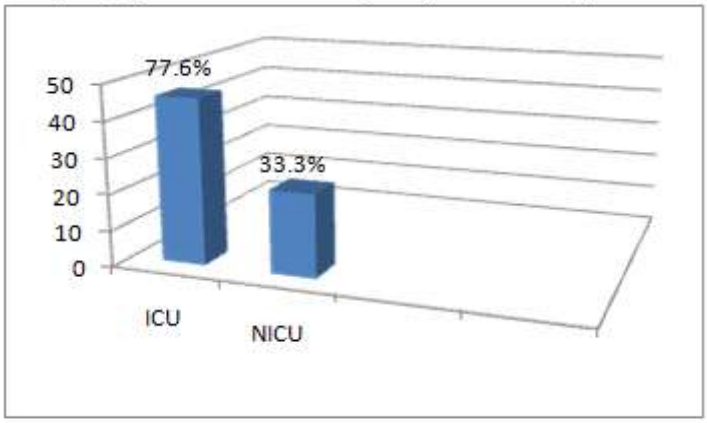


Figure (2) shows that majority of study subjects (77.6%) were from ICUs while 33.3% were from NICU.

Figure (3) Distribution Of Study Subjects According To Nationality

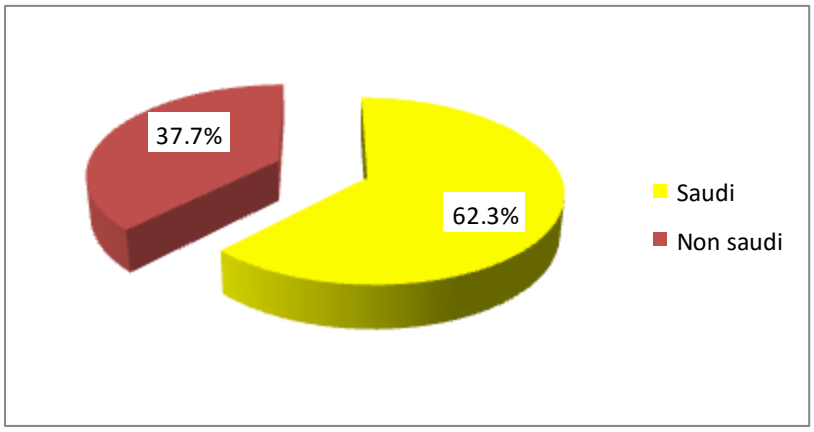


Figure (3) shows that majority of study subjects (62.3%) were Saudi

Table (1) a. Socio- Demographic Characteristics of Study Subjects.

Characteristics	Critical care nurses (N= 69)	
	No.	%
1. Work Shift		
Morning	41	59.4
afternoon	18	26.1
night	10	14.5
2. Sex		
Female	65	94.2
Male	4	5.8
3. Social status		
single	34	49.3
married	35	50.7
4. Level of education:		
Diploma	35	50.7
Bachelor	34	49.3
5. Age		
20- <25	11	15.9
25-<30	44	63.8
30-35	14	20.3
mean ± SD	27.2±3.2	
6. Experience in ICU		
1-<5	49	71
5-<10	17	24.6
10-14	3	4.3
mean ± SD	3.7±2.9	

Table (1) b. Socio- Demographic Characteristics of Study Subjects.

Characteristics	No.	%
7. Daily Work Hours		
8	54	78.3
9	9	13.0
10	6	8.7
mean ± SD	8.3±0.6	
8. Number of assigned patient during the shift		
1-<5	52	75.3
≥5	17	24.7
mean ± SD	3.7±3	
9. Number of nursing assistants		
0	45	65.3
1-≥3	15	21.7
4-5	9	13
mean ± SD	1.2±1.8	
10. Number of patients that each nurse had at the beginning of the shift		
Minimum	0	
Maximum	18	
mean ± SD	2.9±2.6	
11. Number of patients admitted during the shift		
Minimum	0	
Maximum	8	
mean ± SD	1.3±1.6	
12. Number of patients in isolation room		
Minimum	0	
Maximum	3	
mean ± SD	0.6±0.6	

Table (1) a & b presents the socio-demographic characteristics of study subjects. According to this table the highest percentage of study subjects (94.2%) were female, married (50.7%), diploma school degree (56.5%), staff nurses (92.8) and working in morning shift (59.4%). The mean ages and years of experience of study subjects were 27.2 and 3.7 years respectively. Regarding daily work hours majority of study subjects (78.3%) work 8 hours daily. Mean number of patients assigned to nurse was 3.7 patients. The highest percentage of study subjects (65.3%) had no nursing assistants. Mean number of newly admitted patients during the shift was 1.3 patients.

Table (2) Distribution of Study Subjects According to Their Experience with Performance Obstacles Related to Work Environment.

Work environment obstacles	ICU nurses (N= 69)				Chi-square	p-value
	Yes		No			
	No	%	No.	%		
1. I had difficulty finding a place to sit down and do my paperwork in the unit.	16	23.2	53	76.8	19.8	0.000**
2. My patients' rooms were full of visitors.	10	14.5	59	85.5	34.8	0.000**
3. Patients` rooms were not organized.	6	8.7	63	91.3	47.1	0.000**
4. Receiving many phone calls or messages from my family members or friends.	8	11.6	61	88.4	40.7	0.000**
5. Receiving many phone calls or messages from patient`s family.	28	40.6	41	59.4	2.4	0.1

Table (2) Presents distribution of study subjects according to their experience with performance obstacles related to work environment. There were statistical significant difference between study subjects regarding all items of the work environment obstacles except the for the item " Receiving many phone calls or messages from patient`s family". The highest work environment obstacle was receiving many phone calls or messages from patient`s family (40.6%) followed by I had difficulty finding a place to sit down and do my paperwork in the unit (23.2%).

Table (3) Distribution of Study Subjects According To Their Experience With Performance Obstacles Related To The Organization.

Performance obstacles related to the organization	ICU nurses (N= 69)				Chi-square	p-value
	Yes		No			
	No	%	No.	%		
1. Delay in getting medications for my patient(s) from pharmacy.	12	17.4	57	82.6	29.3	0.000**
2. The change of shift report(s) took longer than they should.	20	29	49	71	12.1	0.000**
3. There was a delay before I saw the new medical orders for my patient(s).	9	13	60	87	37.7	0.000**
4. I spent much time searching for my patients' charts.	3	4.3	66	95.7	57.5	0.000**
5. The patient-related information given to me by the previous shift's nurse(s) during the shift change was not sufficient.	10	14.5	59	85.5	34.8	0.000**
6. The patient-related information given to me by the previous shift's nurse(s) during the shift was unnecessarily detailed.	6	8.7	63	91.3	47.1	0.000**

Table (3) presents that the distribution of study subjects according to their experience with performance obstacles related to organization. There were statistical significant differences between study subjects regarding all items of the organization. The major organizational obstacle was "The change of shift report(s) took longer than they should" (29%) followed by "There was a delay in getting medications for my patient(s) from pharmacy"(17.4%).

Table (4) Distribution of Study Subjects According To Their Experience With Performance Obstacles Related To Equipments.

Performance obstacles related to equipments	ICU nurses (N= 69)				Chi-square	p-value
	Yes		No			
	No	%	No.	%		
1. I had to use equipment that was in poor condition.	16	23.2	53	76.8	19.8	0.000**
2. I spent much time looking for equipment because it was not located where it was supposed to be.	10	14.5	59	85.5	34.7	0.000**
3. I had to wait to use a piece of equipment because someone else was using it.	12	17.4	57	82.6	29.3	0.000**
4. I spent much time seeking for supplies in the central stock area.	8	11.6	61	88.4	40.7	0.000**
5. The central stock area was not well-stocked.	16	23.2	53	76.8	19.8	0.000**
6. The isolation rooms that I worked in were not well-stocked.	11	16	58	84	32	0.000**
7. The non-isolation rooms that I worked in were not well-stocked.	10	14.5	59	85.5	34.7	0.000**

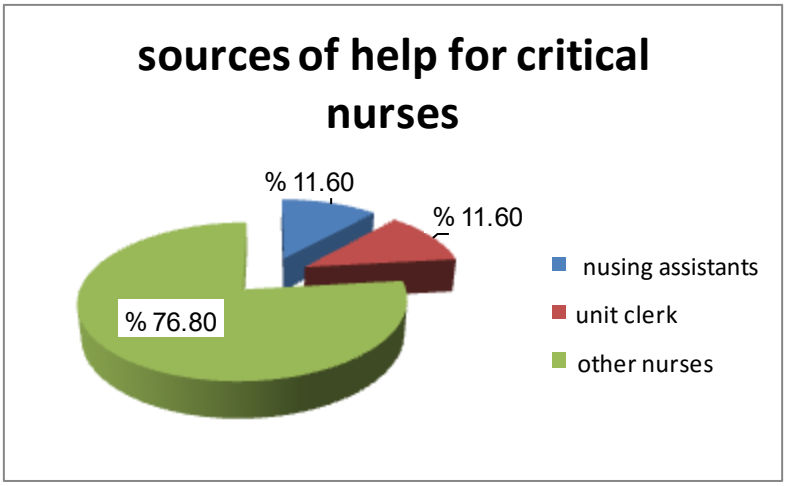
Table (4) shows the distribution of study subjects according to their experience with Performance obstacles related to equipments. There were statistical significant differences between study subjects regarding all items of performance obstacles related to equipments. "I had to use equipment that was in poor condition" and "The central stock area was not well-stocked" had equal percentages (23.2%). Followed by I had to wait to use a piece of equipment because someone else was using it (17.4%).

Table (5) Distribution of Study Subjects According To Their Experience With Performance Obstacles Related To Task.

Performance obstacles related to task	ICU nurses (N= 69)				Chi-square	p-value
	Yes		No			
	No	%	No.	%		
1. I was responsible for orienting a nurse.	32	46.4	37	53.6	32.3	0.000**
2. I accompanied a patient during intra-hospital transport today.	25	36.2	44	63.8	5.2	0.02*
3. I spent a considerable amount of time teaching my patient(s) or family members.	22	31.9	47	68.1	9.1	0.03*
4. I spent much time dealing with family needs.	26	37.7	43	62.3	4.2	0.04*

Table (5) presents the distribution of study subjects according to their experience with Performance obstacles related to task. There were statistical significant differences between study subjects regarding all items of performance obstacles related to task. The order of task obstacles was "I was responsible for orienting a nurse" (46.4%); "I spent much time dealing with family needs"(37.7%); "I accompanied a patient during intra-hospital transport today" (36.2%) and I spent a considerable amount of time teaching my patient(s) or family members (31.9%).

Figure (4) Sources Help for Critical Nurses



According to figure (4) the majority of help the nurses received was from other nurses (76.8%)

Figure (5) Adequacy and Usefulness of Help Received

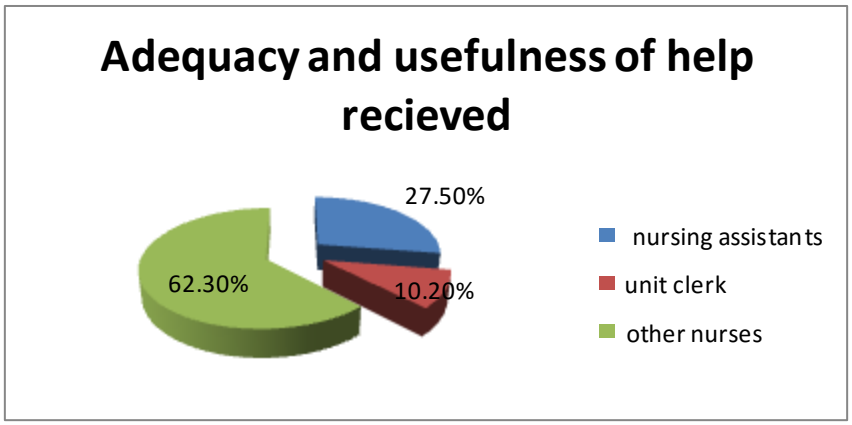


Figure (5) shows that the majority of useful help the nurses received was from other nurses (62.3%)

Figure (6). Work place condition as reported by Critical care nurses with the.

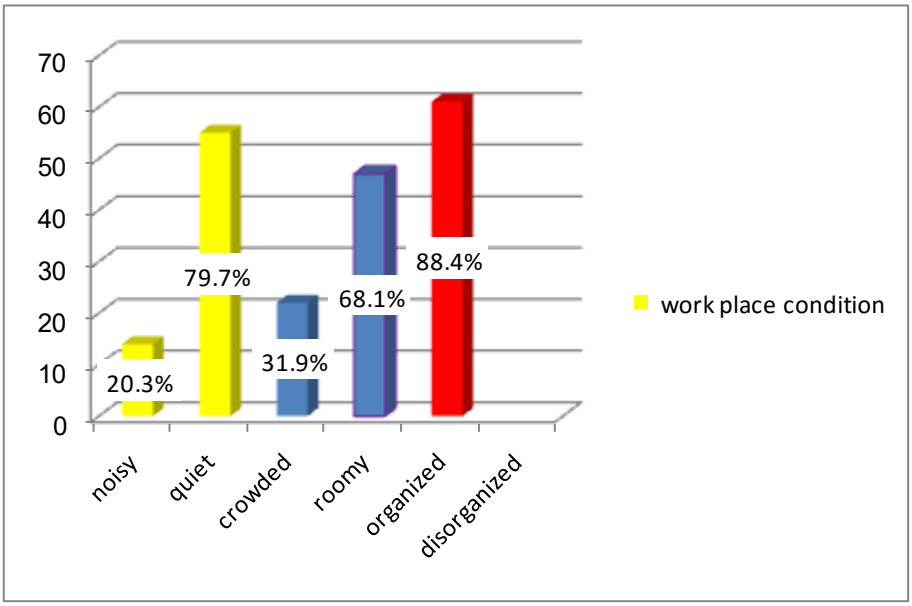


Figure (6). Shows the work place condition as reported by critical care nurses. Majority of study subjects described their work place as quiet (79.7%), roomy (68.1%) and organized (88.4%).

Table (6) Distribution of Total Patient Safety Scores

patient safety	Critical care nurses (n = 69)		Chi- square	p- value
	no.	%		
High	11	15.9	29.5	0.9
Moderate	49	71		
Low	9	13.1		

Table (6) presents distribution of total scores of patient safety. There were no statistical significant differences between study subjects regarding total score of patient safety. Majority of study subjects (71%) perceived moderate level of patient safety.

Table (7) Mean Scores of Patient Safety as reported by Critical Care Nurses

domains patient safety			t-test	p- value
	Mean	± SD		
1. **Team work climate**	39.4	4.1	80.1	0.000**
2. Safety climate.	70.1	8.5	68.8	0.000**
3. Job satisfaction.	23.4	2.8	70.2	0.000**
4. Stress recognition.	29.8	5.1	48.5	0.000**
5. Work condition	40.4	4.9	68.8	0.000**
6. Perception of management	20.4	3	56.4	0.000**
Total patient safety score	**223.5**	**19.6**	**94**	**0.000****

Table (7) revealed that, there were statistical significant differences between study subjects regarding the means of all domains of patient safety and also the mean of the total patient safety score.

Table (8) Correlations between Age, Experience, Work Hours and Total Patient Safety Scores.

Variables	Total patient safety scores.	
	r	P
Age	0.225	0.63
Experience	0.130	0.29
Work hours	-0.033	0.78

Table (8) presents the Correlations between age, experience, work hours and patient safety. According to this table there were non significant correlations between age, experience, work hours and patient safety. All correlations are positive except between work hours and patient safety had negative correlations.

Table (9) Correlations between performance Obstacles and Total Patient Safety Scores in ICU.

Performance obstacles	Total patient safety scores.	
	R	P
Receiving many phone calls or messages from patient`s family.	0.21	0.08
Delay in getting medications for my patient(s) from pharmacy.	0.091	0.4
The change of shift report(s) took longer than they should.	0.029	0.8
I had to use equipment that was in poor condition.	0.019	0.8
The central stock area was not well-stocked	-0.059	0.6
I was responsible for orienting a nurse.	-0.045	0.7
I accompanied a patient during intra-hospital transport today.	0.126	0.3
I spent a considerable amount of time teaching my patient(s) or family members.	0.263	0.02*
I spent much time dealing with family needs.	0.14	0.23

*statistical significant $p<0.05$

Table (9) shows correlations between performance obstacles and total patient safety scores in ICU. According to this table all correlations were non significant except between the item " I spent a considerable amount of time teaching my patient(s) or family members" had significant correlations with total patient safety scores(P= 0.02). Also, all correlations between performance obstacles and total patient safety scores were positive except in the two items of "The central stock area was not well-stocked" and "I was responsible for orienting a nurse" the correlation was negative with total patient safety scores.

IV. Discussion

Improving patient safety is a major challenge for intensive care units (ICUs) (Gurses, Carayon & Wall, 2009). Performance obstacles are the challenges that inhibit intensive care nurses from providing high quality care patients. Performance obstacles are related closely with the immediate work environment. The work environment of intensive care nurses may have important impact on both nursing satisfaction and patient safety (Keshk, Qalawa &Aly, 2012) and (Gurses &Carayon, 2007).The aim of this study was to explore performance obstacles in ICU and their effects on patients` safety. Results of this study table (2) revealed that The highest work environment obstacle was receiving many phone calls or messages from patient`s family this can be referred to that cases in ICUs are critical and may be end stage so family members are worried and anxious about the patient and need reassurance. In the same time there is shortage of nurses and work over load which make the receiving of calls and messages from family members difficult. This result is in same line with (Sangala et al., 2015) who found in their study about telephone communication in ICU that the predominant needs of family during telephone conversations with ICU nurses are the desire for clinical information and the need for emotional support. Nurses are readily accessible at all times of the day and provide a valuable source of information and support for family members over the telephone.

According to the finding of this study table (3) the major performance obstacle related to the organization was "The change of shift report(s) took longer than they should". This may be attributed to the number of patient assigned to each nurse. According to the result of this study majority of nurses reported 1-<5 patient each shift. This result is congruent with that of Laws and Amato (2010) found that bedside reports took just as long as previous reports. Moreover the highest percentage of nurses described the item " the central stock area is not well stocked as the equipment obstacle. This because most nurses in ICU reported that there is no central stock. This result is congruent with that of (Mohammadi et al., 2016) who found that The most critical performance obstacles affecting workload included: difficulty in finding a place to sit down, hectic workplace, disorganized workplace, poor-conditioned equipment, waiting for using a piece of equipment, spending much time seeking for supplies in the central stock, poor quality of medical materials, delay in getting medications, unpredicted problems, disorganized central stock, outpatient surgery, spending much time dealing with family needs, late, inadequate, and useless help from nurse assistants, and ineffective morning rounds

Regarding the performance obstacles related to task table (5) near half of critical care nurses described "I was responsible for orienting a nurse" as a task obstacle this may be attributed to that at the time of data collection there was cross training program allover Sabia General Hospital in which all nurses from all departments and units were under training in that was different from their main departments or units. Also, critical care nurses are responsible for orienting nursing internship students and undergraduate nursing students. Additionally, ICU has shortage of nurses , no unit clerk, and lack of nursing assistance. So, these orientations of nursing internship and other new nurses with the ICU critical procedures will add another work overload and need much time.

The findings of this study are similar to that of (Ibrahim et al., 2015) who found ICU performance obstacles related to physical work environment, work organization, technology and tools, and nursing tasks. Moreover, results of this study are similar to that of are congruent with that of (Beckstrand &Kirchhoff, 2005) and (Gurses &Carayon, 2007) who reported that most frequent obstacles to performance in ICU are telephone calls from patients' family for information, patients' family member who did not understand the term lifesaving measures, physicians disagreeing about the direction of care of a dying patient, noise, crowdedness, lack of equipment and supplies, recording and reporting, in addition to staff shortage and high workload. These factors can lead to delaying of giving medication to patient, medication errors which violates the patient safety. Moreover these factors can cause dissatisfaction for nurses

Regarding patient safety the results of the study table (6) revealed that majority of study subjects reported moderate level of patient safety. This result is contradicted with that of (Eldeeb, Ghoniem and Eldosokey, 2016) who found in their study low level of patient safety. Also, Aiken et al (2012) had dissimilar results in their study of Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States they found poor patient safety scores. Additionally, WHO (2011) mentioned that hospitalized patients are at risk of suffering from adverse events; and patients on medication have the risk of medication errors and side effects.Regarding the correlation between shift report and patient safety the finding of this study revealed non significant positive correlation. This result is congruent with that of (Laws and Amato, 2010) who found that four months after implementation, nurses were more likely to agree that bedside reports improved safety .

V. Conclusion

Performance obstacles in ICU were related to environment, equipments and task. Receiving many phone calls or messages from patient`s family, The change of shift report(s) took longer than they should, the central stock area is not well stocked, and orientation of new nurses. Moderate level of patient safety.

VI. Recommendations

- Policy makers must develop strategy, protocol, or system to eliminate performance obstacles related to misplacement of equipment, supplies,
- Hospital should recruit nursing assistants and unit clerks to decrease work load on nurses.
- Central stock area should be available in each ICU.
- Policy makers are needed to redesign of the physical layout of the ICU to eliminate performance obstacle of inadequate workspace.
- Quality Circles program must be provided to develop a culture of participation and team work among the nurses.

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