

Performance Obstacles and its relation to the Perceived Quality of patient care and Quality of Working Life among ICU Nurses: A Comparative Study

Abeer Mohamed Seada and Sahar Hassan Aly EL Banan

Assist prof of Nursing Administration, lecturer of Nursing Administration
Nursing Administration Department, Faculty of Nursing, Cairo University, Egypt

Abstract:

Background: Performance obstacles and poor ICU work system design may negatively affect the quality and safety of nursing care as well as nursing quality of working life (QWL).

Aim: The aim of this study was to investigate performance obstacles and its relation to perceived quality of patient care and quality of working life among ICU nurses.

Design: A correlational comparative design was utilized in this study.

Setting: The present study was carried out in the intensive care units at three private hospitals and in new kaser El Ainy teaching hospital in Egypt.

Subjects: A convenient sample of 188 staff nurses who were working in the selected ICU and who were willing to participate in the study constituted the study sample .It divided into (80) staff nurses out of 129 in private sector and 108 staff nurses out of 178 in new kaser El Ainy teaching sector.

Tools: Data of the present study were collected through utilizing the following three tools: Performance obstacles of ICU questionnaire, quality of work life questionnaire (QWL) and perceived quality of care questionnaire.

Results: Findings of the present study concluded that there was a statistical significant difference between nurses' perception of performance obstacles in the selected sectors, a statistical significant difference between nurse's perception of quality of work life as well as perceived quality of patient care in both teaching and private sectors, and there was a statistical significant correlation between performance obstacles and WQL only in the private sector while no correlation was found between performance obstacles and perceived quality of patient care and QWL in the teaching sector .

Recommendations: It is recommended that hospital administration must implement interventions aimed at redesigning the work system of critical care units to remove performance obstacles related to organization and technology obstacles. Health care policy makers in teaching hospitals must establish strategies to eliminate performance obstacles related to unavailability, misplacement of equipment, supplies, and patient charts as well as reorganization of patient rooms.

Keywords: Performance Obstacles, Perceived Quality of patient care, QWL and ICU nurses

I. Introduction

The competitive capability of organizations is depending on how individuals can perform distinctively because the performance of individuals represents the overall performance of the organization. Therefore, researchers deem human resources as the major resource for achieving the competitive advantage in a dynamic market (Caliskan, 2010). Nurses as a human resource play an essential role in providing care in ICUs. (Mc Steem & Peden-Mc Alpine, 2006 and Rogers et al, 2008) Professional nurses who have been working in critical care unit for a long time period are keen about the environment in which they work. They find their on duty time is challenging and stimulating. (keshk, Qalawa & Aly 2012).

A critical care unit is a movable and highly technological environment that is slowly changing because fewer professional nurses with an additional qualification in critical care are working in the critical care units (Dunsdon, 2011). Intensive care nurses play a principal role in patient's recovery. They must reply continuously and quickly to the needs of patients and families, implement procedures accurately, and react with the most intense emotional aspects of life. Nurses work in a demanding and stressful work environment to assist patients in critical conditions. In addition, patient safety and quality of nursing care are major problems in intensive care units. The characteristics of the ICU work environment can provoke obstacles for nurses in carrying out patient care tasks. Therefore they are threatening the quality and safety of care provided by nurses.(Institute of Medicine, 2004).

The work environment of intensive care units may have a substantial impact on both nursing outcomes and patient safety .There are several challenges facing nurses in intensive care units, among these challenges are

improving quality and safety of nursing care as well as improving nursing quality of working life (QWL). Poor ICU work system design may negatively affect the quality and safety of nursing care as well as nursing QWL (Institute of Medicine 2004). "ICU work system design" points to the design of all ICU work system tasks, technologies, physical environment, and organization, as well as the interactions among them, which eventually affect care providers, processes, and outcomes. Interruptions, overworking, illegible writing, ineffective communication, and equipment problems are the outcome of poor ICU work system design. Such hazards can increase nursing errors and also negatively affect QWL as well as quality of patient care. Improving nursing QWL is critical because poor QWL leads to high nursing turnover. (Gurses, Caryon and Wall 2009).

Quality has been and continues to be a central issue in health care organizations and among health care providers. In the majority of countries, quality of care provided by the health care delivery system has become the focus. Since quality is a critical factor in health care, initiatives to address quality of health care have become worldwide phenomena. Many countries are examining various means to improve the quality of health care (Nandraj, Vidya & Khot, 2006).

Nurses comprise the largest group of health care providers, they are well positioned to serve on the frontlines of quality improvement, and they are the key to quality in health care delivery system, holding a unique role as care coordinators of client care delivery. As hospital participation in quality improvement increase, so does the role of nursing. Quality of nursing care is the degree of excellence observed in delivering nursing care to patients, quality nursing as a process sought to attain the highest degree of excellence in the delivery of patient care. The logical definition of quality nursing care might be to benefit patients without causing harm, meet patients' needs for nursing care, and help patients to reach their goals for health promotion, maintenance and recovery from illness (Zhao & Akkadechanunt, 2011).

A high Quality of Working Life (QWL) is a must for healthcare organizations to attract and retain qualified, committed and motivated employees. Working life quality refers to employee's satisfaction with working life. It shows the interaction between employees and their physical, social and economic work environment. It is a multi-dimensional concept that covers various dimensions of work. These include the job content, working conditions, fair and adequate compensation, opportunities for career development, task appreciation, participation in decision-making, occupational health and safety, work stress, job security, organizational and personal relations and work-life balance (Hsu & Kernohan, 2006; Connell, 2009; Adhikari & Gautam, 2010; and Mosadeghrad Ferlie, and Rosenberg, 2011). Improving nurses' QWL may result in a higher level of quality of care delivered to patients (Hsu and Kernohan, 2006).

Today, quality of work life (QWL) has become an important issue that basically describes the methods by which an organization can ensure the holistic wellbeing of an employee instead of concentrating on work-related aspects. QWL is a process by which the organizations' employees and stakeholders learn how to work better together to enhance both the staff's quality of life and the organizational effectiveness simultaneously (Heidari-Rafat, Enayati-Navinfar & Hedayati, 2010 and Daubermann & Pamplona, 2012).

The concept of quality of work life (QWL) refers to the favorable or unfavorable job environment aspects for people working in the organization. It is the degree to which the members working in the organization are able to satisfy personnel needs through their experience in the organizations. More over QWL can be explained in term of following eight conditions; adequate and fair compensation, opportunity to use and expand human capacities, safe and healthy working conditions, opportunity for career growth, social integration in the work place, work and quality of life: as well as social relevance of work (Gaurav, 2012 and Swamy, Nanjundeswaraswamy, & Rashmi 2015). While Jerome (2013) added that QWL is a process by which an organization reacts to employee needs for developing mechanisms to let them to share fully in making the decisions that design their lives at work. In addition Swamy, Nanjundeswaraswamy, & Rashmi (2015) stated that quality of work life (QWL) is the extent to which an employee is satisfied with personal and working needs through participation in the workplace while achieving organizational goals. Rai (2013) reported that quality of working life is important because it is related to employees commitment (Farjad & Varnous, 2013), turnover intentions (Korunko, Hoonakker & Carayon, 2008), organizational effectiveness (An, Yom & Ruggiero, 2011), productivity (Nayari, Salehi & Noghabi, 2011) and quality of life (Drobinic, Behamy & Prag, 2010).

The concept of performance obstacles can be utilized to study ICU work system design. Performance obstacles are "the features of work system design that affect performance and are closely associated with the immediate work setting" and they can affect employees QWL and quality of care negatively. (Gurses, Caryon and Wall 2009 & El Hehe, Hassan, Khafagy & Sleem 2014). Workload intercede the effects of performance obstacles on perceived quality, safety of care and QWL. Several factors affect quality of working life among ICU nurses such as increased workload; task complexity; high patient mortality and morbidity rate; unnecessary prolongation of life; emergencies, admissions, and transfers; communication problems with coworkers; high level of noise; weak autonomy; insufficient or improper equipment; and frequent use of complicated technology. Furthermore studies have found that inappropriate staffing; admissions and transfers,

and a high number of severely ill patients can increase ICU nursing workload. More over redesigning ICU work systems by reducing performance obstacles may be an effective strategy for lowering workload and enhancing quality and safety of care as well as QWL among nurses, thereby completing the efforts on optimizing the nurse/patient ratio. (Rogers et al 2008 and Gurses, Caryon and Wall 2009)

Carayon et al (2013) and Gurses and Carayon, (2007) have argued that obstacles may be related to one or more elements of the work system, such as those related to tasks which include, dealing with many family issues ,and obstacles related to tools/technologies as unavailability of necessary equipment in a timely manner were considered among the categories of performance obstacles that prevent ICU nurses from accomplishing their tasks. They added that other physical environment obstacles as insufficient and poorly designed workspace as well as those related to organization as delay in getting medications from pharmacy also hinder nurses from completing their work. Moreover performance obstacles concept can also be used to recognize problems in other health care settings, for other types of care providers and patients. In addition, Performance errors were classified as a skill based errors (failure to achieve intended plans of action, including unintended acts and errors or neglected acts), rule-based mistakes (such as using an incorrect treatment protocol), and knowledge-based errors. (Gurses and Carayon, 2007 and keshk, Qalawa & Aly 2012). This study was attempted to investigate performance obstacles and its relation to perceived quality of patient care and quality of working life among ICU nurses.

II. Significance of study

Improving staff quality of working life is as much needed as improving patient's quality of care. Quality of work life is considered to be the most critical aspect of job that ensures long term association of the employees with the organization. At the same time it is observed that when the employees are provided with internal, personal, physical, spiritual working environments, this will lead to higher productivity of the organization (Rai, 2013). QWL leads to a favorable atmosphere that leads to good interpersonal relations and highly motivated employees who strive for their development. QWL will secure enthusiasm in the work environment with opportunities for everyone to do his best. Such job will provide job satisfaction and appreciation to the organization .Many performance obstacles related to physical environment, issues related to family, supply chain management as approaching to supplies, stock in patient rooms, access to patient chart, lateness in getting medications as well as equipment-related issues affect ICU nurses' perceptions of quality and care safety care either directly or indirectly through their influence on workload (Gurses, Caryon and Wall 2009). Furthermore, performance obstacles and workload are negatively affected nursing job satisfaction and, as a result, contributing to high turnover and nursing shortage. Moreover the higher patient acuity, work system factors and expectations also contribute to nurses workload: nurses are expected to execute nonprofessional tasks such as delivering and retrieving food trays; housekeeping; transmitting patients; and ordering, coordinating, or performing ancillary services. Nurses are experiencing higher workloads than ever before due to several reasons as increased demand for nurses, inadequate supply of nurses, shortage of staffing, overtime, and reduction in patient length of stay. Nurses as the largest group of health care grievors should enjoy a satisfactory quality of working life to be able to provide quality care to their patients. So it is hoped that this study will provide information about the ICU nurses' work system factors in order to improve their quality of working life as well as the quality of care they provide to patients.

Study Methods

Aim:

The aim of this study was to investigate performance obstacles and its relation to perceived quality of patient care and quality of working life among ICU nurses.

Design

A correlational comparative design was utilized in this study to investigate performance obstacles and its relation to perceived quality of patient care and quality of working life among ICU nurses. Cross sectional design was utilized.

Research questions:

The following research questions were guided the research study:

- 1- Is there a difference among ICU nurse's perceptions of performance obstacles at different selected sectors?
- 2- What is the relationship between performance obstacles, perceived quality of patient care and QWL among ICU nurses in the selected sectors?
- 3- Is there a difference among ICU nurse's perceptions of quality of patient care and QWL at different selected sectors?

Study setting:

The present study was carried out in the intensive care units at three private hospitals and in new kaser El Ainy teaching hospital in Egypt .Each of the three private hospitals has two intensive care units (ICU and CCU) with a total of 66 beds .Regarding to new kaser El Ainy teaching hospital it has 8 medical and surgical intensive care units with a total of 80 beds .

Sample:

A convenient sample of 188 staff nurses who were working in the selected ICU and who were willing to participate in the study constituted the study sample .It divided into (80) staff nurses out of 129 in private sectors and 108 staff nurses out of 178 in new kaser El Ainy teaching hospital .The criteria for inclusion in the sample included: being a staff nurse who provide direct patient care in ICU .Those in administrative positions were excluded because they experience other different obstacles.

Tools:

Data of the present study were collected through utilizing the following tools:

- 1- Performance Obstacles of ICU Questionnaire: developed by Gurses and Carayon (2007) to assess performance obstacles that are facing nurses in ICU .It consisted of two parts:
 - 1- 1st part: Socio demographic data of study sample as :age, sex, marital status, educational level, years of experiences in nursing, years of experiences in ICU, preferable work shift , number of daily assigned patients and number of assisted nurses .
 - 2- 2nd part: Performance obstacles questionnaire included 36 questions about the performance obstacles experienced by critical care nurses during a particular shift. It contained 2 main parts. The first part included twenty-four items that had a nominal scale (yes or no), the scoring system was 2 to yes answer and 1 for No. It represents the following elements of the work system: environment obstacles (6 items), organization obstacles (7 items), technologies or tools obstacles (7 items), and task obstacles (4 items). Combinations of positively and negatively worded items were used in the questionnaire. For example, for the item ‘patient’s rooms are crowded with visitors’ the response category of yes indicated that the nurse experienced that obstacle, whereas for the item ‘the isolation rooms that I worked in were well-stocked,’ the response category of no meant that the nurse experienced an obstacle. While the second part included 12 items, it had a semantic differential response format with a 5-point rating scale and bipolar adjective pairs such as organized-disorganized and noisy-quiet. The 12 items intended to ask questions related to the help received from assistant nurse if available(3 items), from other nurses in unites (3 items) , and from unit clarks (3 items) and other two items intended to ask questions about nurse satisfaction regarding work place . Each one score for each question ranged from 4 to zero respectively.
- 3- Quality of work life questionnaire (QWL): developed by Swamy ,Nanjundeswaraswamy, & Rashmi (2015) to measure nurses perception of QWL. It consisted of 50 close-ended questions that related to nine components of QWL as follow: work environment (6 items), organization culture and climate (7items), relationships and co-operation (6 items) training and development (4 items), compensation and rewards (5 items), Facilities (5 items) Job satisfaction and Job security (8 items), autonomy of work (6 items) and adequacy of resources (3 items). The scoring system was a Five-point Likert scale with “1” being “strongly disagree” and “5” being “strongly agree”. The reliability coefficient of the questionnaire was 0.88 Cronbach’s alpha value.
- 4- Perceived quality of care questionnaire was developed by Lindgren and Andersson (2011) to measure nurses perception of quality of care .It composed of 33 items divided into the following subscales: psychosocial relations (8 items), commitment (4 items), work satisfaction (6 items), openness/closeness (4 items), competence development (5 items) and security/insecurity (6 items). The scoring system was a Five-point Likert scale with “1” being “strongly disagree” and “5” being “strongly agree. The Cronbach’s alpha correlation coefficient was 0.93 in the Karen-personnel instrument.

Tools validity: data collection tools were tested for its content validity through five expertises from nursing administration department to assess the coverage, relevancy and clarity of items. Based on their recommendations, the necessary modifications were made. Double translation English-Arabic-English was done to ensure validity of translation.

The Pilot Study:

A pilot study was conducted to test the clarity and applicability of the questionnaire and to estimate the time needed to fill the questionnaires. Minor changes were made by rephrasing some items and the time consumed ranged from 30 to 45 minutes.

Ethical consideration:

Official permissions were obtained from hospital's directors and nursing directors of the previous selected hospitals to conduct the study at the selected units. The researchers ensured that the correct procedures concerning informed consent, autonomy, and the maintenance of confidentiality were undertaken.

III. Procedures

The aim of the present study was explained to study subjects who were assigned to the previous selected intensive care units in both private and teaching University sectors and who are volunteering to participate in study. The tools were distributed to staff nurses during different shifts while they were on duty, with explanation of the way of answering. The time consumed to fill the questionnaires ranged from 30 to 45 minutes. Data were collected during 2016 with duration of three months (Feb to April). They were collected in the morning and afternoon shifts.

Statistical analysis: data were inserted and analyzed through using the statistical program of Statistical Package for the Social Sciences (SPSS) version 16. Data were analyzed using frequency and percentage, measures of mean and standard deviations. In addition, independent t test was used to investigate the difference between nurse's perception in private and teaching sectors regarding to performance obstacles, quality of patient care and quality of working life. For comparison between more than two means, the F value of analysis of variance (ANOVA) was computed. Correlation between variables was evaluated using Pearson's correlation coefficient. Significance was adopted at $p < 0.05$ for interpretation of results of tests of significance. Partial correlation coefficient was used to test the relationship between performance obstacles, quality of patient care and quality of working life.

IV. Results:

Table (1) Frequency Distribution of Nurses regarding Demographic Characteristics (N= 188)

Demographic characteristics	(N)	%
1.Sector:		
1-Teaching	108	57.44
2- Private	80	42.54
2. Age:		
1-Less than 25 years	76	40.4
2-25- less than 35 years	78	41.5
3-35-less than 45 years	27	14.4
4- 45- less than 55 years	7	3.7
5-More than 55 years	0	0
3. Sex :		
1-Male	84	44.7
2 Female	104	55.3
4. Social status :		
1-Married	106	56.4
2- Single	82	43.6
5. Educational level :		
1-Nursing diploma	87	46.3
2-Bacculerate in nursing	101	53.7
6. Years of experience :		
1-Less than 1 year	28	14.9
2-1- less than 3 year	47	25.0
3-3- less than 6 year	35	18.6
4-More than 6	78	41.5
7. ICU experience:		
1-Less than year	47	25.0
2-1- less than 3 years	64	34.0
3-3-less than 6 years	43	22.9
4-More than 6 years	34	18.1

Table (1) shows that 57.44 % of study sample were working in teaching hospital, (41.5 %) of them were in the age group ranged between 25 to less than 35 years, (55.3%) were female nurses while (56.4 %) of study sample were married. Also, this table shows that (53.7 %) of nurses had baccalaureate degree in nursing, (41.5%) of them had more than 6 years of experience in nursing and (34 %) of respondents years of experiences in ICU were ranged between 1 to less than 3 years.

Figure (1) Percentage Distribution of Nurses regarding Favorable Work Time

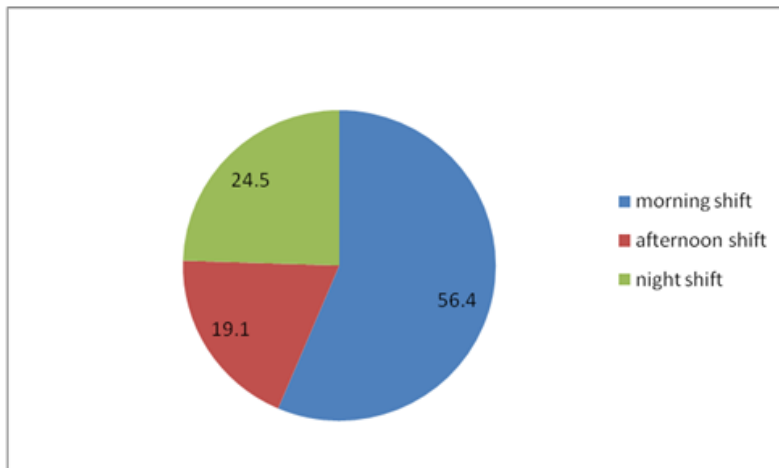


Figure (1) displays that (56.4%) of study sample prefer working in the morning shifts

Figure (2) Number of Assistant Nurses as reported by study sample

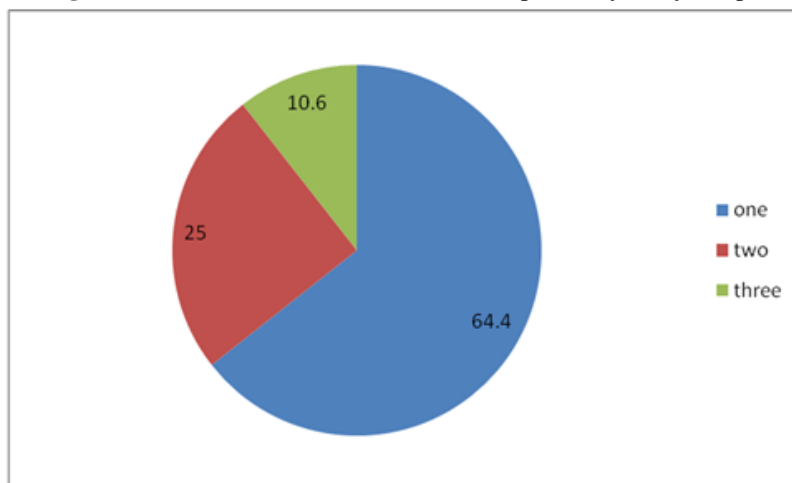


Figure (2) displays that highest percentage (64.4 %) of study sample reported that the number of assistant nurses was one.

Figure (3) Daily Patient Number to Whom Nurses were Responsible

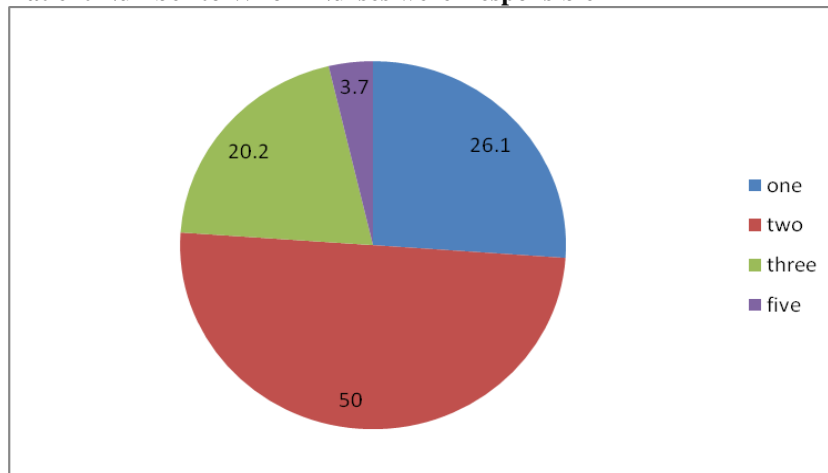


Figure (3) shows that half of study sample (50 %) reported that the daily patient numbers to whom they were responsible were two patients

Table (2) Comparison of Mean Scores of Performance Obstacles as Perceived by Study Sample at the Selected Sectors (No. = 188).

Performance obstacles subscales	Teaching sector (No 108)		Private sector (No 80)		T	Sig
	X	SD	X	SD		
1-Environmental obstacles	8.6111	1.96147	8.8250	2.12743	.713	.477
2-Organization obstacles	10.4352	1.59012	9.6500	1.58394	3.353	.001
3- Technology or tools obstacles	10.9167	1.56555	10.4625	1.99330	1.749	.082
4- Tasks obstacles	6.6481	1.09642	6.4750	1.30214	.988	.324
Total	36.6111	3.35677	35.4125	3.93200	2.249	.026

Table (2) represents the mean scores of performance obstacles as perceived by study sample at the selected sectors. It is clear from this table that the highest mean scores of performance obstacles were related to organization obstacles and technology obstacles. A statistical significant difference between nurses perception of performance obstacles regarding to organization obstacles subscale at the selected sectors (T, = 3.353 p=.001). As it is clear that nurses working in the teaching hospital had high mean scores regarding to organization obstacles compared to nurses in the private hospital. (X =10.4352, SD=1.59012, X= 9.6500 SD =1.58394).Although there was a slight differences between total mean scores of performance obstacles in both sectors, it was proved to be statistically significant differences (T= 2.249, p = .026).

Table (3) Comparisons of Mean Scores of Nurse’s Perception Regarding the Help They Received and Characteristics of Work Place at the Selected Sectors (No = 188).

Performance obstacles related questions	Teaching (No 108)		Private (No 80)		T	p
	X	SD	X	SD		
a- The help i received from assistant nurse:						
1- On time	2.1296	1.23116	2.4375	.92564	-1.877	.062
2- Adequate	2.2593	1.11381	2.4125	.92358	-1.002	.318
3- Useful	2.2315	1.21214	2.3125	.96251	-.493	.622
b- The help i received from other nurse:						
1- On time	2.5741	1.23956	3.0125	.73766	-2.815	.005*
2- Adequate	2.6204	1.20527	2.7375	.96448	-.716	.475
3- Useful	2.6204	1.21300	2.7500	.86420	-.815	.416
4- The help i received from ward clerk						
1- On time	2.3889	1.35228	2.4375	1.01687	-.270	.788
2- Adequate	2.2315	1.20440	2.4500	1.01757	-1.312	.191
3- Useful	2.1852	1.11194	2.5375	.95392	-2.280	.024*
5 -During my shift, the work place was:						
1- Quite	2.2963	1.11288	2.3625	.88937	-.438	.662
2- Adequately spaced	2.3148	.88231	2.2500	.84942	.506	.614
3- Organized	2.0741	1.20516	2.6750	.85351	-3.807	.000

It is clear from table(3) that was a statistical significant difference between nurses perception of the help they received from other nurses, as nurses working in private sector reported high mean scores regarding “they received help on time” compared to those nurses in teaching sector. (t= -2.815, p=.005*). Also there was a statistical significant difference between nurses perception of help they received from word clerk, as nurses working in private sector reported high mean scores regarding “the help they received is useful” compared to those nurses in teaching sector. (t=2.280, p=.024*). Data in the same table shows statistical significant difference between nurses perception regarding characteristics of work place as nurses working in private sector reported high mean scores regarding “the the work place was organized ” compared to those nurses in teaching sector. (t=3.807, p=.000 *) high mean scores regarding the organization of work place compared to those nurses in teaching sector (t= 3.807, p= .000)

Table (4) Comparison of Mean Scores of Quality of Working Life as Perceived by Study Sample at the Selected Sectors (No = 188).

QWL subscales	Teaching (No 108)		Private (No 80)		T	Sig
	X	SD	X	SD		
1- Work environment	19.6111	5.29650	21.7250	4.88857	-2.795	.006
2- Organization culture and climate	22.8056	6.41181	22.7250	7.41189	.080	.937
3- Relationships and co-operation	21.5093	3.85604	21.9250	5.09101	-.637	.525
4- Training and development	13.5463	3.78730	13.9250	4.24495	-.644	.521

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5- Compensation and rewards	14.3241	4.45293	15.0375	6.50500	-.892	.373
6- Facilities	14.7963	5.10224	15.2000	6.56303	-.474	.636
7- Job satisfaction and Job security	25.0000	6.87267	27.9625	7.49927	2.811	.005
8- Autonomy of work	18.7685	5.05041	21.7750	4.72530	-4.14	.000
9- Adequacy of resources	9.2685	2.70896	10.8875	3.14217	-3.783	.000
Total	159.62	29.186	171.162	43.334	-2.179	.031

Table (4) illustrates the mean scores of quality of working life as perceived by study sample at the selected sectors. There is a statistical significant differences between nurses perception of QWL regarding to the following subscales (Work environment (P=0.006), Job satisfaction and Job security (P= .005,) Autonomy of work (P=.000) and Adequacy of resources (P= .000). As it is clear that nurses working in the private hospitals had high mean scores of QWL compared to nurses working in the teaching hospital which is reflected in total mean scores respectively (T= 2.179 ,p= .031) .

Table (5) Comparison of Mean Scores of Quality of Patient Care as Perceived by Study Sample at the Selected Sectors (No.= 188).

Quality of patient care subscales	Teaching (No 108)		Private (No 80)		T	Sig
	X	SD	X	SD		
1- Psychosocial relations	27.3056	5.51372	28.5375	5.99355	1.459	.146
2- Commitment	13.3148	4.51715	16.4750	2.61918	5.597	.000
3- Work satisfaction	21.9444	5.22187	21.6375	5.56491	.387	.699
4- Openness/closeness	12.6296	3.61873	15.7250	2.76037	6.394	.000
5- Competence development	14.5370	4.91313	20.0125	3.33183	8.607	.000
6- Security/insecurity	17.6296	4.91344	24.0000	3.90391	-9.571	.000
Total	107.361	18.86	126.39	17.56975	-7.039	.000

Table (5) shows the mean Scores of quality of patient care as perceived by study sample at the selected sectors .There were statistical significant differences between nurses perception of quality of patient care regarding to the following subscales (Commitment P=.000) , Openness/closeness(P= .000), Competence development (P= .000) and Security/insecurity (P=.000) . As it is observed that nurses working in the private hospitals had high mean scores of quality of patient care compared to nurses working in the teaching hospital which is reflected in total mean scores respectively (T= 7.039 p=.000).

Table (6) Correlation between Performance Obstacles, Perceived quality of care and QWL at the Selected Sectors

Correlation	Teaching Sector				Private Sector			
	Quality of Care		QWL		Quality of Care		QWL	
	R	sig	R	sig	R	sig	R	sig
Performance Obstacles	-.060	.580	-.022	.837	.085	.471	.439**	.000

Note. * p < 0.05; ** p < 0.01

Table (6) shows the correlation between performance obstacles, perceived quality of care and QWL in the selected sectors. As shows in this table there was a statistical significant correlation between Performance obstacles and WQL only in the private sector while no correlation was found between performance obstacles and perceived quality of patient care and QWL in the teaching sector.

Table (7) Partial Correlation Coefficient: Performance Obstacles Subscales and QWL (N 188)

variables	Total QWL	Work environment	Org culture	Relationships	Training	Rewards	Facilities	satisfaction	Autonomy Resources
Performance obstacles	.092								
Environmental obstacles		.178	.131	.013	.108	.175*	.201**	.099	.149 .163*
Organization obstacles	.128								
Technology or tools obstacles		.136	.219**	.034	.056	.208**	.094	.033	.136 .058 .111
Task obstacles		.047	.043	.081	.134	.003	.040	.034	.005 .212**

* p < 0.05; ** p < 0.01.

Data in table (7) shows partial correlation coefficient: performance obstacles subscales and QWL. It is clear that there was no correlation between total performance obstacles and total QWL (r=.092). While a positive correlation was found between environmental obstacles and rewards (r=.175*) , Facilities (r=.201**) and resources (r=.163*). There was a positive correlation between organization obstacles and organizational culture (r=.219**), rewards (r=.208**) and resources (r=.166). A positive correlation was found between technology or tools obstacles and with relationship and cooperation subscale only (r=.223**), also between task obstacles and only with resources (r=.212**).

Table (8) Partial Correlation Coefficient: Performance Obstacles Subscales and Quality of Patient care subscales (No 188)

variables	quality of pt care	psychosocial relations	Commitment	Work satisfaction	Openness	Competence development	total Security
Performance obstacles	.098						
Environmental obstacles		.176	.216*	.194*	.102	.111	.088
Organization obstacles		.068	.064	.129	.013	.149	.171
Technology or tools obstacles		.385**	.236**	.284**	.160*	.242**	.245*
Task obstacles		.072	.042	.123	.100	.001	.108

* p < 0.05; ** p < 0.01.

Data in this table (8) represents partial correlation coefficient: performance obstacles subscales and quality of pt care. It is clear that there was no correlation between total performance obstacles and overall quality of patient care (r=.098). While a positive correlation was found between environmental obstacles and both commitment (r=.216*) and work satisfaction (r=.194*). Data in the same table also illustrates that there were positive correlation between technology or tools obstacles with all quality of patient care subscales.

Table (9) Correlation between Study Sample Demographic Characteristics and Total Study Variables

Demographic data	Total performance obstacles		Total QWL		Total quality of pt care	
	R	P	R	P	R	P
1-Age	.170	.020*	.129	.077	.087	.235
2- Years of experiences in nursing	.133	.069	.293	.000**	.127	.083
3- Years of experiences in ICU	.075	.306	.179	.014*	.188	.010*

Table (9) reveals that there was a statistical significant correlation between study sample age and performance obstacles (r=.170, p=.020*), also between years of experiences in nursing and QWL(r=.293, p=.000*). A statistical significant correlation also was found between years of experiences in ICU and quality of pt care (r=.188, p= .010*) and total QWL(r= .179, p= .014*).

Table (10) Differences between Study Sample Sex, Educational Level and Total Study Variables (No.188)

Demographic data	Total performance obstacles		Total QWL		Total quality of pt care	
	T	p	T	p	T	P
1- Sex	2.717	.000	1.646	.101	3.485	.001
2- Educational level	2.357	.019	1.875	.062	.239	.812

Table (10) shows differences between study sample sex, educational level and total study variables. It is clear from this table that there was a statistical significant differences between study sample sex and total performance obstacles (t= 2.717, p= .000), quality of pt care (t= 3.485, p=.001). Also between study sample educational level and performance obstacles (t= 2.357, p =.019).

Table (11) Differences among Study Sample Favorable Work Time, Daily patient's numbers and Number of Assistant Nurses and Study Variables

Demographic data	Total performance obstacles		Total QWL		Total quality of pt care	
	F	P	F	p	F	P
1-Favorable work time	1.994	.139	.258	.773	4.478	.008
2-Daily patient's numbers	6.815	.000	6.536	.000	2.946	.034
3-Number of Assistant nurses	.888	.415	3.703	.027	11.410	.000

Table (11) represents the differences among study sample favorable work time, daily patient's numbers and number of assistant nurses and total study variables. There were statistical significant differences between daily patient's numbers and all three study variables (performance obstacles QWL, and quality of pt care). Also, statistical significant differences was found between the number of assistant nurses and quality of patient care (F= 11.410, p=. 000) as well as QWL (F= 3.703 p= .027). Data in the same table shows statistical significant differences between favorable work time and quality of pt care(F=4.478 ,p= .008)

V. Discussion

Employees are the main drivers of the success of the organization. Organizational competitive ability largely depends on how individual can do distinctively as individual performance characterizes the overall performance of the organization. Therefore, researchers consider human resources as the main resources for achieving the competitive advantage in a moveable market (Rubel and Kee 2014).

Intensive care nurses as a human resource play a key role in patients' recovery. They must respond continuously and quickly to the demands of patients and families, implement procedures accurately, and interact with the most severe emotional aspects of life. They work in demanding and stressful work environments to assist patients in critical conditions. Characteristics of the ICU work environment can create obstacles for nurses in implementing patient care tasks, therefore threatening the quality and safety of care provided by nurses. Therefore the aim of this study is to investigate the performance obstacles and its relation to quality of work life and perceived quality of care (Institute of Medicine 2004).

The findings of the present study revealed that the highest percentage of study sample prefer working in the morning shifts , were responsible to provide nursing care for two patients while they had only one assistant nurse to help them in nursing care. In this respect Keshk, Qalawa, & Aly, (2012) reported in their research study that the highest percentage of nurses choose the morning shift in ICU as favorable work time for them ,as well as the highest percentage were responsible to give nursing care for more than 5 patients in ICU. While about half of the sample had only one assistant nurse to help them in nursing care. From the researcher's point of view the number of assistant nurses or other nurses as well as the help they provide might be consider an important factor in performance obstacles that face ICU nurses. In this respect Aiken (2003) reported that increased patient assignments, too few registered nurses for quality care, and inadequate support services lead to nurse's dissatisfaction and lower the quality of care.

Findings of the present study concluded that there was a statistical significant difference between nurses' perception of performance obstacles in the selected sectors as nurses working in the teaching hospital had high mean scores of total performance obstacles compared to nurses in the private hospital. This result is consistent with Keshk, Qalawa, & Aly, (2012) who investigate performance obstacles among ICU nurses in teaching hospital and found that critical care nurses experience a wide variety of performance obstacles that cover all elements of the work system model as organization , environment, technology as well as task obstacles . While El Hehe et al (2014) investigated performance obstacles in both governmental and teaching hospitals and found that performance obstacles were more in general hospital than in university hospital especially obstacles related to physical work environment, work organization, technology and tools and nursing tasks . Moreover, Gurses and Carayon. (2007) added that overall, ICU nurses experience a variety of performance obstacles in their work on a daily basis. In the same issue Aletras and Kallianidou (2014) reported that there is a considerable problem exist in ICU in all dimensions of performance obstacles especially the suitability of hospital materials, lack of appropriate spaces and facilities design and psychological distress. From the researcher's point of view the work system as well as the financial situation in both private and teaching hospital is quite different as the private hospital is purely profit as their revenue comes from patients admission, and therefore they have cash money budget for maintaining and purchasing supplies and equipment while the situation in new kaser El Ainy teaching hospital is currently affected by many factors that lead to performance obstacles , among these factors are misdistribution of financial resources, inadequate budget as well as lack of governmental support in addition to restriction of available budget to employees salary, incentives and new contracts , all these factors lead to problems related to performance obstacles regarding to organization and tasks problems .

More over when mean scores of nurses perception regarding performance obstacles subscales were investigated , results of the present study showed that nurses working in the teaching hospital had high mean scores regarding to organization obstacles and technology obstacles compared to nurses in the private hospital. In this respect Janakiraman et al(2011) reported that among the performance obstacles that reported by critical care nurses in teaching hospital were related to technologies or tools element such as the isolation rooms were not well stocked ,the central stock area was not well stocked , having to use equipment that was in poor as well as waiting to use a piece of equipment because someone else was using it. In addition Gurses and carayon (2007) and Gurses ,Carayon and Wall (2009) added that the most frequently experienced performance obstacles included noisy work environment ,distractions from families , hectic and crowded work environments ,delay in getting medications from pharmacy ,spending considerable amount of time teaching families , equipment not being available-someone else using it .As well as patient rooms not well-stocked , insufficient workspace for completing paperwork , seeking for supplies or patients' charts , receiving many phone calls from families , delay in seeing new medical orders , and misplaced equipment .

Regarding to performance obstacles related questions, result of the current study revealed that there was a statistical significant differences between nurses' perception of the help they received as well as the characteristics of work place as nurses working in private sector reported high mean scores regarding " they

received help on time” compared to those nurses in teaching hospital , more over they reported high mean scores regarding “the help they received is useful” compared to those nurses in teaching sector . In addition when nurses were asked about characteristics of work place, the findings of the current study concluded that nurses working in private sector reported high mean scores regarding the organization of work place compared to those nurses in teaching sector. In this respect Keshk, Qalawa, & Aly, (2012) reported that performance obstacle reported by critical care nurses in a teaching hospital was related to help from nursing assistants, help from other nurses, help from unit clerk, and organization of work environment.

Results of the present study showed that there were statistical significant differences between nurses perception of quality of patient care as well as QWL in the selected sectors. As nurses working in the private hospitals had high mean scores of quality of patient care compared to nurses working in the teaching hospital in the following subscales:, commitment, openness/closeness, competence development and security/insecurity. In addition they had high mean scores of QWL compared to nurses working in the teaching hospital regarding to work environment, job satisfaction and job security, autonomy of work and adequacy of resources. In this respect Moradi, Maghaminejad and Aziz-fini (2014) reported a significant relationship between nurses QWL and the type of hospital so that nurse in specialty settings such as ENT hospitals had a better QWL than nurses in general hospitals. The differences in QWL of nurses in different hospitals could be attributed to the hospital’s circumstances. It has been reported that factors such as hospital size, number and type of patients, nurse’s salary, hospital policies and physical environment may affect the nurses QWL. From the researcher point of view this might be contributed to a variety of performance obstacles experienced by nurses in teaching hospital that affect their perception of quality of patient care as well as QWL. As performance obstacles could lead nurses to feel less powerful and perform nursing activities in an ordinary way without any creativity, as well as feeling of job insecurity .Moreover performance obstacles affect QWL which is reflected on nurses productivity, feeling of imbalance between organizational objectives and available resources, ineffective work environment and nurses inability to use their skills and abilities .

Furthermore, the findings of the present study revealed that there was a statistical significant correlation between performance obstacles and WQL only in the private sector while no correlation was found between performance obstacles and perceived quality of patient care and QWL in the teaching sector. In this respect El Hehe et al (2014) found negative correlation between performance obstacle and QWL at Mansura University hospital While there was no correlation between performance obstacle and QWL at Mansura general hospital . In the same issue, Gurses and Carayon. (2009) provided support for direct relationships between performance obstacles and quality as well as perceived quality of patient care. In addition, their results suggested that performance obstacles increase workload, which then decreases perceived quality/safety of care and quality of work life. In addition, equipment-related issues contributed to decreased quality/safety of care perceptions and quality of work life. Hence, performance obstacles may be an important driver of poorer well-being and perceived quality of care among nurses in intensive care units. Also, Moawad (2013) added that as working conditions decline, job performance may deteriorate, the quality of care may diminish, and employee turnover may increase. In the same issue Gurses, Carayon and Wall (2009) reported that performance obstacles in ICUs are a major determinant of nursing workload, perceived quality and safety of care, and QWL. In general, performance obstacles increase nursing workload, which in turn negatively affect perceived quality and safety of care and QWL. In this respect Hoonakker et al (2011) reported that the existence of performance obstacles such as inadequate workspace, displaced equipment or patients’ charts, poorly stocked supplies, inadequate information from physicians, and a hectic/disorganized work environment are related to a very higher perceived workload, lower QWL, and lower perceived quality and safety of care. High perceived workload significantly increased stress and tension among ICU nurses.

When a correlation between performance obstacles subscales and QWL subscales was further investigated, results of the present study showed a positive correlation between environmental obstacles and rewards, facilities and resources, as well as a positive correlation between organization obstacles and organizational culture, rewards and resources. More over a positive correlation was found between technology or tools obstacles and relationship and cooperation subscale only as well as between task obstacles and only with resources. In this respect Vazirani et al. (2005) reported that performance obstacles related to poor physical work environment, effectiveness of supply chain management (lateness in getting medications from pharmacy, poorly stored patient rooms, and disorganized supplies area), searching for patient charts, dealing with many family-related issues and patient admissions will affect QWL dimensions among nurses like relationship and cooperation among nurses, autonomous practice to perform nursing activities and opportunity for using available resources .

Regarding the correlation between performance obstacles subscales and perceived quality of patient care subscales, results of the present study revealed a positive correlation between environmental obstacles and both commitment and work satisfaction, also there were positive correlation between technology or tools obstacles with all quality of patient care subscales. From the researcher point of view, environmental obstacles

like inability to find place to complete paper work, distraction from family members, many telephone calls, as well as crowded patient rooms could affect nurse's job satisfaction and their commitment to work. Also technology or tools obstacles such as isolation rooms were not well stocked, the central stock area was not well-stocked, having to use equipment that was in poor condition, waiting to use a piece of equipment because someone else was using, all of these obstacles could affect nurses job satisfaction, commitment, psychosocial relation as well as feeling of openness and connectedness.

Regarding to the relationship between study sample demographic characteristics and study variables , results of the present study revealed that there were statistical significant relationship between study sample age, sex ,educational level as well as daily patient numbers and with nurses perception of performance obstacles .In this respect Gurses, Carayon and Wall (2009) reported that , only gender, age, and shift type were significantly related to nurses perception of performance obstacles .From the researchers point of view nurses' age play an important role in perception of performance obstacles as younger nurses with less experiences might be less adapted to work environment and ICU work system also increased patient assignments with complicated cases in ICU could lead to perception of performance obstacles.

More over study results revealed statistical significant relationship between study sample years of experiences in nursing, years of experiences in ICU and daily patient number and overall QWL .This result is contrary to study done by Said, Nave, and Matos (2015) who found no any statistical significant relationship between QWL and nurses demographic data. In the same issue Jerome (2013) found no any significant relationship between age, educational qualification and overall QWL. While Moradi, Maghaminejad and Aziz-fini (2014) reported a significant relationship between nurses QWL and their education level, work experiences while age has no any significant relationship with QWL.

In addition results of the present study showed a significant relationship between respondent's gender, years of experiences in ICU, daily patient number and number of assistant nurses and with overall perceived quality of patient care .In this regard, Gurses, Carayon and Wall (2009) reported that female nurses reported providing higher quality and safety of care. From the researchers point of view nurses who have more years of experiences in ICU are more likely to have good psychosocial relation with each other, support and collaborate with each other, are more committed to their work as well as feel secure, all these factors reflected on their perception of quality of patient care. More over when nurses have increased patient assignment with decreased number of assistant nurses this will increase work over load which in turn affect quality of patient care.

VI. Conclusion

Findings of the present study concluded that there was a statistical significant difference between nurse's perception of performance obstacles in the selected sectors, a statistical significant difference between nurse's perception of quality of work life as well as perceived quality of patient care in both teaching and private sectors, and there was a statistical significant correlation between performance obstacles and WQL only in the private sector while no correlation was found between performance obstacles and perceived quality of patient care and QWL in the teaching sector.

VII. Recommendations

Based on the findings of the present study the researchers recommend the following:

- [1]. Hospital administration must implement interventions aimed at redesigning the work system of critical care units to overcome performance obstacles related to organization and technology obstacles,
- [2]. Health care policy makers in teaching sector must establish strategies to eliminate performance obstacles related to unavailability or misplacement of equipment, supplies, and patient charts as well as reorganization of patient rooms,
- [3]. Future researches should investigate the impact of reducing performance obstacles on ICU nurses workload and other outcomes, health care organizations can use the findings of the present study as a blueprint to improve work environment and increase the retention of critical care nurses.
- [4]. A better understanding of the most intense and the most frequently occurring obstacles that restrict nurses from providing quality of care could lead to the development and testing of interventions to lower both the intensity and the frequency of these obstacles, thus lessening the burden of care.

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