

The Health Care Working Conditions That Affect Patient Safety As Perceived By the Nursing Staff

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Abstract: Patient safety necessitate the modification of behavior of health care providers to perceive the wide range of factors of working conditions that affect patient safety and designing of the physical environment to reduce hazards, thereby reducing the chance of accidents. **This study aimed to assess the health care working conditions that affect patient safety as perceived by nursing.**

Design: descriptive, cross-sectional research design was used in this study.

Setting: The study was carried out in Menoufia University Hospital and in Liver Institute at Shebin El-Kom, Menoufia Governorate.

Subjects: Composed of two groups: Group 1: All available number of the staff nurses at the selected inpatient and critical care units in the two hospitals at the time of the study, Group2:All available number of the head nurses in the total previously selected hospitals.

Tool: Questionnaire Sheet" Hospital Survey on Patient Safety Culture Questionnaire"

Results: Indicated that high level of nursing staff perception toward health care working conditions that affect patient safety in the two settings. And also there was increase of nursing staff perception regarding all domains of working conditions in Liver Institute than Menoufia University hospital.

Conclusion: This study concluded that the mean score of nurses' perception in both Menoufia University Hospital and Liver Institute showed a high level of perception toward health care working conditions that affect patient safety. Nurses' perception about working conditions can be used as a baseline for raising **safety awareness** throughout the organization and identifying the areas that need for improvement.

Recommendations: further research is recommended in the field of patient safety to further investigate the relationship between the nursing staff perception about working conditions that affect patient safety and their actual performance. Also, implementing continuous training programs on patient safety issues for the different categories of health care providers to ensure their own safety as well as patients' safety.

Key words: patient safety- nurses perception - Health Working Conditions

I. Introduction

The healthcare delivery system includes a broad range of technical resources and personnel; patient safety is thereby dependent on the optimal interactions of the components of the healthcare system. Healthcare services expose patients to the risk of unintentional harm that can range from trivial and none disabling to severe permanent disability or death .Environmental factors such as noise, air quality, light, toxic exposures, temperature, humidity, and aesthetics have been examined for their effects on both patients and workers. The combination of environmental factors with the growing consumer demand for safety, security, competence, and physical and psychological comfort has engendered the concept of a healing environment.(1)

The World Health Organization (WHO) defines patient safety practices as processes or structures that reduce the probability of adverse events resulting from exposure to the health care system across a range of diseases and procedures.1 Patient safety aims at making health care safe for both clients and health service staff. Patient safety is a system property and the foremost attribute of quality of care. As such, it is of organizational, managerial and economic concern, in addition to being of clinical concern to the health care system. Patient safety is a global and regional public health issue affecting all types of health care systems whether in developed or developing countries. The majority of health care errors are considered to be preventable. Patient safety is challenged by not only the complexity of health care processes but also the culture of denial and blame, the two characteristics that have dominated the environment of problem solving and learning that the health care service is. In addition, inconsistencies in the reporting and learning systems prevent collection and dissemination of information in a meaningful way.(2)

Patient safety is the cornerstone of high-quality health care. Much of the work defining patient safety and practices that prevent harm have focused on negative outcomes of care, such as mortality and morbidity. Nurses are critical to the surveillance and coordination that reduce such adverse outcomes. Much work remains to be done in evaluating the impact of nursing care on positive quality indicators, such as appropriate self-care

and other measures of improved health status, consequently; patient safety problems arises when an intended outcome does not occur due to the interaction between pieces of equipment, among people and between people and equipment. Using pertinent, organized clinical knowledge and patient information to improve health delivery. (3)

Patient safety emerges as a central aim of quality. Patient safety, as defined by the World Health Organization, is the prevention of errors and adverse effects to patients that are associated with health care. Safety is what patients, families, staff, and the public expect. Joint Commission–accredited organizations. While patient safety events may not be completely eliminated, harm to patients can be reduced, and the goal is always zero harm. A health care organization aims to increase the reliability of its complex systems while making visible and removing the risk of patient harm. Joint Commission– accredited organizations should be continually focused on eliminating systems failure and human errors that may cause harm to patients, families, and staff. (4).

Organizational culture is an important determinant of patient safety in healthcare organizations. A culture of safety recognizes that safety is not an accident. It requires all staff to be properly trained and educated with regard to patient safety and prevention. It requires that the requisite supply of resources and infrastructure is present and available so staff can function efficiently and effectively within the workplace (5). The most critical contribution of nursing to patient safety, in any setting, is the ability to coordinate and integrate the multiple aspects of quality within the care directly provided by nursing, and across the care delivered by others in the setting. Staff members suggested a range of barriers to patient safety: heavy workloads; staff communication failures; failure to follow and document procedures; poor staffing levels; limited awareness of risk; and priority to achieve performance targets (6).

Patient safety can be influenced by a broad array of factors, from the individual patient, to the clinical care setting, to the entire health care system. The patients' condition and compliance with treatment regime directly impact their clinical outcomes. The knowledge of clinicians, work conditions, and how the teams communicate are critical to ensure safe and effective handoff. The organization's commitment to a culture of safety centered on recognition and reporting of potential safety threats encourage collaboration to resolve patient safety issues identified. In a hospital setting, the implementation of evidenced based care bundle and checklist has been shown to prevent or minimize error for healthcare acquired conditions. For example, the Institute for Healthcare Improvement Central Line Bundle is a grouping of best practices for patients with intravascular central catheter (7)

Working conditions are viewed either as resources that improve work quality or as demands that impede work quality. Working conditions potentially affect patient safety, which leads to patient outcomes. Working conditions were classified into five categories: workforce staffing, workflow design, personal/social factors, physical environment, and organizational factors. Workforce staffing refers to job assignments and includes four principal aspects of job duties: the volume of work assigned to individuals, the professional skills required for particular job assignments, the duration of experience in a particular job category, and work schedules. Workflow design focuses on the job activities of health care workers, including interactions among workers and the nature and scope of the work as tasks are completed. Personal/social factors refer to individual and group factors such as stress, job satisfaction, and professionalism. Physical environment includes aspects of the health care workplace such as light, aesthetics, and sound. Organizational factors are structural and process aspects of the organization as a whole, such as use of teams, division of labor, and shared beliefs (8)

II. Significance of the study:

Patient safety problems raised in different units in the hospital were blamed on nursing staff as committed professionals assuming both clinical and administrative role in their units while ignoring many other factors that can greatly contribute to these problems. These factors as working conditions which consider the resources that either improves work quality or as demands that impede work quality, those resources are viewed as potentially affecting patient safety. So the present study will be conducted to assess healthcare working conditions that can affect quality of patient safety as perceived by the nursing staff. Such study will increase awareness of the nursing staff to improve working conditions that affect quality of patient safety which in turn can influence the success of health care.

III. Aim of the study:

This study aimed at assessing the health care working conditions that affect patient safety as perceived by nursing staff through the following objectives:

- 1- Assess nursing staff perception toward health care working conditions that affect patient safety in Menoufia University Hospital.
- 2- Assess nursing staff perception toward health care working conditions that affect patient safety in Liver Institute at Shebin El-Kom, Menoufia Governorate.

3- Comparing nursing staff perception toward health care working conditions that affect patient safety between the two selected study settings.

IV. Subject and methods:

Research Design:-Descriptive, cross-sectional research design was used to conduct this study.

Setting:-This study was conducted in selected inpatient and critical care units in Menoufia University Hospital and in Liver Institute at Shebin El-Kom, Menoufia Governorate.

Menoufia University Hospital	National Liver Institute
Critical Care Units	Critical Care Units
I intensive care unit- Operating Unit- and Haemodialysis Unit	Medical Intensive Care Unit- Surgical Intensive Care Unit- Endoscope department and Operative unit
Inpatient Units	Inpatient Units
Medical Department- Or Surgical Department Orthopedic Department- Pediatric Department Urology Department-	Medical Department- Surgical Department - Pediatric Department and Emergency

Subject:-The subjects included in this study were composed of two groups: Group 1: All available number of the staff nurses assigned to patient care at the previously selected inpatient and critical care units in the two hospitals at the time of the study. The total number of subjects was 230 staff nurses (124 staff nurses from the University Hospital and 106 staff nurses from the National Liver Institute). Group 2: All available number of head nurses in the previously selected hospitals at the time of the study, their total number was 62 head nurses (37 head nurse from the University Hospital and 25 head nurse from the National Liver Institute).

Tools: A "Hospital Survey on Patient Safety Culture Questionnaire" was used for data collection. It was developed by Zohar, (9) adopted and modified by the researcher to be suitable for the purpose of the study. It had two main parts:

Part I: - Consisted of eight items related to demographic characteristics of the study subject, such as age, years of experience, qualification, and attendance of previous workshops.

Part II: - Comprised of 63 statements related to health care working conditions that affect patient safety. These statements were classified according to five main areas as the following:- Workforce Staffing(nine statements) , Personal/Social Factors (five statements) and Team Work within the unit, (five statements) ,workflow design (five statements) ,Organizational factors (four statements), Feedback and communication about error, (five statements) and Physical Environmental Factors (twenty three statements).

Scoring system: The response for each question was measured on a three point likert scale with choices of "Disagree", "Equivocal", or "Agree", which were respectively scored 1, 2, and 3. For each part, the scores of the items were summed up and the total score was divided by the number of items giving the average score of this domain. Nursing staff whose score of (63 or less) were considered having low perception about health care working conditions that affect patient safety, nurses whose score range from (64 to 126) were considered having moderate perception about health care working conditions that affect patient safety, and nurses whose score range from (127 to 189) were considered having high perception about health care working conditions that affect patient safety. These scores were converted into a percent score for facilitating comparison across domains.

Validity of the tool:-

Face validity involve evaluating whether the items on the questionnaire measure the concepts being studied, while the content validity refers to evaluating whether the questions of the instrument are representative of questions that should be asked about the topic. As the majority of the study subjects have diploma degree, a panel of six experts was recruited to test the content and face validity of the instrument. The panel consisted of experts from Nursing Administration, Pediatric, Psychiatric and Community Health Nursing Departments from the faculty of Nursing Menoufia University. After translating the tool into Arabic to be suitable for the purpose of the study, the panel were asked to critique the instrument as a whole, including identifying areas of concern and reviewing the construction, flow and grammar.

Reliability of the tool:-

A test / retest was used to determine stability and internal consistency of the measurement over the time. The researcher administered the same instrument to study subjects on two occasions; the two occasions were separated by three weeks. The scores on the repeated testing are compared. This comparison is expressed through correlation coefficient alpha, it was ($r = 0.93$).

Pilot Study:

After review of the tool by the experts, the researcher conducted a pilot study of the developed instrument before administering the final questionnaire. The purpose of the pilot study was to ascertain clarity and applicability of the study tool and to determine obstacles that may be encountered during data collection. It also helped to estimate the time needed to fill the form. The pilot study was carried on 23 staff nurses and 7 head nurse from the units under the study complete the questionnaire without difficulties.

Field Work:-

Before any attempt to collect data , an official approval letter was submitted to the Dean of the Nursing College to collect data from the pre-mentioned study settings, also a written approval letters were submitted to the director of The Liver Institute and the director of University Hospital to collect data from the pre-mentioned study subjects. The letter contained the title, aim of the study and method of data collection .The actual data collection took four months from 15/12/2011 to 15/ 10/2011).The designed questionnaire was distributed through meeting with staff nurses and head nurses in the selected study settings , the researcher started with introducing herself to the participants and explained the aim of the study. The participants were asked to fill up the tool throughout the morning and afternoon shift; it took from 20-30 minutes to fill the questionnaire by each nurse. The best time for the researcher to collect data was in the afternoon shift because the staff nurses had less workload, while the suitable time to collect data in the morning shift was after giving medication to patients at 12 PM.

Ethical consideration:-

The study conducted with careful attention to ethical standards of research and rights of the participants:-

Informed consent:

The respondents' rights were protected by ensuring voluntary participation; so that informed consent was obtained by explaining the purpose, nature, time of conducting the study, potential benefits of the study and how data will be collected.

Anonymity and Confidentiality:

The respondents were assured that the data will be treated as strictly confidential. Furthermore, the respondents' anonymity will be maintained as they will not be required to mention their names.

V. Results

Table (1): Personal and Job Characteristics of Nurses in both Critical and Inpatient Care Units in Menoufia University Hospitals.(N=161)

Personal Characteristics	Nurses in Menoufia University Hospitals							
	Critical care Units				Inpatient Units			
	Head Nurse(n=18)		Staff Nurse(n=79)		Head Nurse (n=19)		Staff Nurse(n=45)	
	No.	%	No.	%	No.	%	No.	%
Age:								
< 20 years	0	0.0	1	1.3	0	0.0	1	2.2
20- years	2	11.1	43	54.4	1	5.3	26	57.8
30- years	14	77.8	32	40.5	16	84.2	17	37.8
40 Or More	2	11.1	3	3.8	2	10.5	1	2.2
Qualifications:								
Bachelor of nursing	15	83.3	31	39.2	14	73.7	0	0.0
Diploma of nursing	3	16.7	48	60.8	5	26.3	45	100.0
Years of experience:								
> 5 years	0	0.0	14	17.7	0	0.0	1	2.2
5 - years	6	33.3	36	45.6	7	36.8	23	51.1
10- years	10	55.6	25	31.6	11	57.9	21	46.7
15 Or More	2	11.1	4	5.1	1	5.3	0	0.0
Attendance of training sessions:								
Yes	4	22.2	6	7.6	2	10.5	4	8.9
No	14	77.8	73	92.4	17	89.5	41	91.1
Total	18	100.0	79	100	19	100	45	100

Table (1): Represents personal and job characteristics of nurses in both critical and inpatient care units in Menoufia University Hospitals. As revealed from the table, regarding age ;the majority of head nurses (77.8%) and (84.2%) in critical care units and inpatient units respectively ranged from the age 30-40 years, while more than half on staff nurses (54.4%) & (57.8%) in critical care units and inpatient units respectively

ranged from the age 20-30 years. Concerning qualification the majority of head nurses (83.3%) and (73.7%) in critical care units and inpatient units respectively have a bachelor nursing degree. Nearly two thirds (60.8%) of staff nurses in critical care units and all of them (100%) in inpatient units have a nursing diploma qualification. Regarding years of experience more than half of head nurses (55.6%) & (57.9%) in critical care units and in inpatient units respectively ranged from 10-15 years of experience, while nearly half of staff nurses (45.6%) and(51.1%) in critical care units and in inpatient units respectively ranged from 10-15 years of experience. Meanwhile; the majority of head nurses (77.8%) & (89.5%) in both critical and in patient units respectively did not attend any workshops about patient safety. Also the majority of staff nurses (92.4%) & (91.1%) in both critical and in patient units respectively did not attend any workshops about patient safety.

Table (2): Personal and Job Characteristics of Nurses in both Critical and Inpatient Care Units in the Liver Institute. (N=131).

Personal Characteristics	Nurses in Liver Institute								
	Critical care Units				Inpatient Units				
	Head Nurse(n=14)		Staff Nurse(n=45)		Head Nurse (n=11)		Staff Nurse (n=61)		
	No.	%	No.	%	No.	%	No.	%	
Age:									
< 20 years	0	0.0	2	4.4		0.0	5	8.2	
20- years	0	0.0	20	44.4	1	9.1	27	44.3	
30- years	10	71.4	22	48.9	6	54.5	28	45.9	
40 Or More	4	28.6	1	2.2	4	36.4	1	1.6	
Qualifications:									
Bachelor of nursing	11	78.6	24	53.3	8	72.7	13	21.3	
Diploma of nursing	3	21.4	21	46.7	3	27.3	48	78.7	
Years of experience:									
> 5 years	4	28.6	16	35.6	3	27.3	20	32.8	
5 - years	8	57.1	15	33.3	5	45.5	20	32.8	
10- years	2	14.3	13	28.9	3	27.3	21	34.4	
15 Or More	0	0.0	1	2.2	0	0.0	0	0.0	
Attendance of training sessions:									
Yes	0	0.0	21	46.7	0	0.0	28	45.9	
No	14	100.0	24	53.3	11	100.0	33	54.1	
Total	14	100.0	45	100	11	100	61	100	

Table (2) represents personal and job characteristics of nurses in both critical and inpatient care units in Liver Institute. As revealed from the table, regarding age ;the majority of head nurses (71.4%) and in critical care units and more than half of them(54.5%) in inpatient units ranged from the age 30-40 years, also about half of staff nurses (48.9%) & (45.9%) in critical care units and inpatient units respectively ranged from the age 30-40 years. Concerning qualification the majority of head nurses (78.6%) & (72.7%) in critical care units and inpatient units respectively have a bachelor nursing degree,(53.3%) of staff nurses in critical care units have a bachelor nursing degree while the majority of them (78.7%) in inpatient units have a nursing diploma qualification. Regarding years of experience more than half of head nurses (57.1%) in critical care units and nearly half of them(45.5%) in inpatient units respectively ranged from 5-10 years of experience, while (35.6%) of staff nurses in critical care units have less than 5 years of experience and (34.4%) of them in inpatient units have 10-15 years of experience. Meanwhile; all of head nurses in both critical and in patient units did not attend any workshops about patient safety. Also the more than half of staff nurses (53.3%) & (54.1%) in both critical and in patient units respectively did not attend any workshops about patient safety.

Table (3): Nursing Staff Perception Regarding Health Care Working Conditions that Affect Patient Safety in Menoufia University Hospital. (N=161)

health care working conditions	Menoufia University Hospital.			
	Critical care units(n=97)		In patient Units(n=64)	
	No.	%	No.	%
1-Workforce Staffing:				
Agree	65	67.0	28	43.4
Disagree	16	16.5	28	43.4
Equivocal	16	16.5	8	13.2
2- Personal/ social factors / A)Supportive Measures for Maintaining Patient Safety:				
Agree	40	41.5	30.3	47.4
Disagree	39	39.8	23.3	36.4
Equivocal	18	18.7	16.4	16.2
B) Promoting Non-punitive Response to Treat Mistakes and Improve Performance:				

The Health Care Working Conditions That Affect Patient Safety As Perceived By the Nursing Staff

Agree	37.6	38.8	26.6	41.6
Disagree	22.4	43.7	17.8	24.7
Equivocal	40	17.5	19.6	33.7
C) Teamwork Within the Study Unit:				
Agree	56	57.7	56	55
Disagree	18	28.3	18	26.8
Equivocal	23	15	23	18.2
3-Work flow design A) Assessment of Risks Which Occur in the Health Care Services.				
Agree	37	38.6	27	42
Disagree	35	35.3	19	29.5
Equivocal	25	26.1	18	28.5
B)Implementing Care Delivery Process Improvements.				
Agree	50	30.5	23	35.3
Disagree	26	36	19	29.7
Equivocal	21	21.5	22	35
4-Organizational Learning about Patient Safety and Continuous Improvement:				
Agree	34	35.1	34	53.1
Disagree	40	41.2	14	21.8
Equivocal	23	23.7	16	25.1
Feedback and Communication about Error				
Agree	46	47.4	30	46.9
Disagree	26	26.8	11	17.1
Equivocal	25	25.8	23	37
5-Environmental Work Conditions of the Hospital Which Affect Patient Safety				
Agree	69	71.2	51	79.6
Disagree	7	7.2	9	14.2
Equivocal	21	21.6	4	6.2
Total	97	100.0	64	100.0

Table (3): Shows nursing staff perception regarding health care working conditions that affect patient safety in Menoufia University Hospital. As noticed from the table, the majority of the nursing staff in both critical and inpatient units respectively agree that environmental work conditions of the hospital which affect patient safety is the most factor that affect patient safety. And also (43.7%) disagree that promoting non-punitive response to treat mistakes and improve performance affect patient safety in critical care units. In the same line (43.4%) disagree that execution of the nursing plan in inpatient units affect patient safety

Table (4): Nursing Staff Perception Regarding Health Care Working Conditions that Affect Patient Safety in Liver Institute.(N=131)..

Parameters	Study Setting			
	Critical care units (n=61)		Inpatient units(n=70)	
	No.	%	No.	%
1-Workforce Staffing				
Agree	33	54.1	44	62.8
Disagree	23	37.7	21	30
Equivocal	5	8.2	5	7.2
2- Personal/ social factors / A-Supportive Measures for Maintaining Patient Safety:				
Agree	1	1.6	1	1.4
Disagree	59	96.8	68	97.2
Equivocal	1	1.6	1	1.4
B- Promoting Non-punitive Response to Treat Mistakes and Improve Performance				
Agree	24	39.3	42	60
Disagree	35	57.3	27	38.5
Equivocal	2	3.4	1	1.5
C- Teamwork within the Unit:				
Agree	52	85.2	56	78.9
Disagree	1	1.6	6	8.5
Equivocal	8	13.2	9	12.6
3- Work flow design A) Assessment of Risks Which Occur in the Health Care Services				
Agree	32	52.4	57	81.6
Disagree	21	34.4	3	4.2
Equivocal	8	13.2	10	14.2
B)Implementing Care Delivery Process Improvement:				
Agree	28	45.9	48	68.5
Disagree	24	39.3	3	4.2
Equivocal	9	14.8	19	27.3
4- Organizational Learning about Patient Safety and Continuous Improvement:				
Agree	40	65.6	53	75.7
Disagree	11	18	3	4.3

Equivocal	10	16.4	14	20
Feedback and Communication about Error:				
Agree	42	68.8	60	85.7
Disagree	13	21.4	3	4.3
Equivocal	6	9.8	7	10
5- Environmental Work Conditions of the Hospital Which Affect Patient Safety:				
Agree	50	82	56	80
Disagree	9	14.8	10	14.3
Equivocal	2	3.2	4	5.7
Total	61	100.0	70	100.0

Table (4): Shows nursing staff perception regarding health care working conditions that affect patient safety in Liver Institute. As noticed from the table, the majority of the nursing staff in the critical care units respectively perceived that supportive measures for maintaining patient safety was the most factor affect patient safety. However inpatient units, the majority of the nursing staff respectively agreed that feedback and communication about error affect patient safety.

Table(5): Mean Score of Studied Nurses' Perception Regarding Health Care Working Conditions in the Study Settings. (N=292).

Parameters	Maximum Score	Studied nurses (N= 292)		Student t-test	p-value
		Menoufia University hospital(n=161)	Liver Institute (n=131)		
		($\bar{X} \pm SD$)	($\bar{X} \pm SD$)		
Workforce staffing	27	17.8± 3.16	19.2± 1.30	4.64	< 0.0001*
Personal/ social factors	39	28.0± 5.71	32.9± 2.25	9.28	< 0.0001*
Work flow design	27	18.8± 5.06	21.8± 5.92	4.73	< 0.0001*
Organizational factors	27	19.6± 4.38	23.7± 3.40	8.74	< 0.0001*
Environmental factors	69	61.0± 7.38	61.7± 5.62	0.85	> 0.05
Grand total	189	145.1± 20.4	159.2± 15.3	6.50	< 0.0001*

* Statistically significant at (P< 0.01).Table (6) Mean Score of Studied Nurses'

Figure (1)

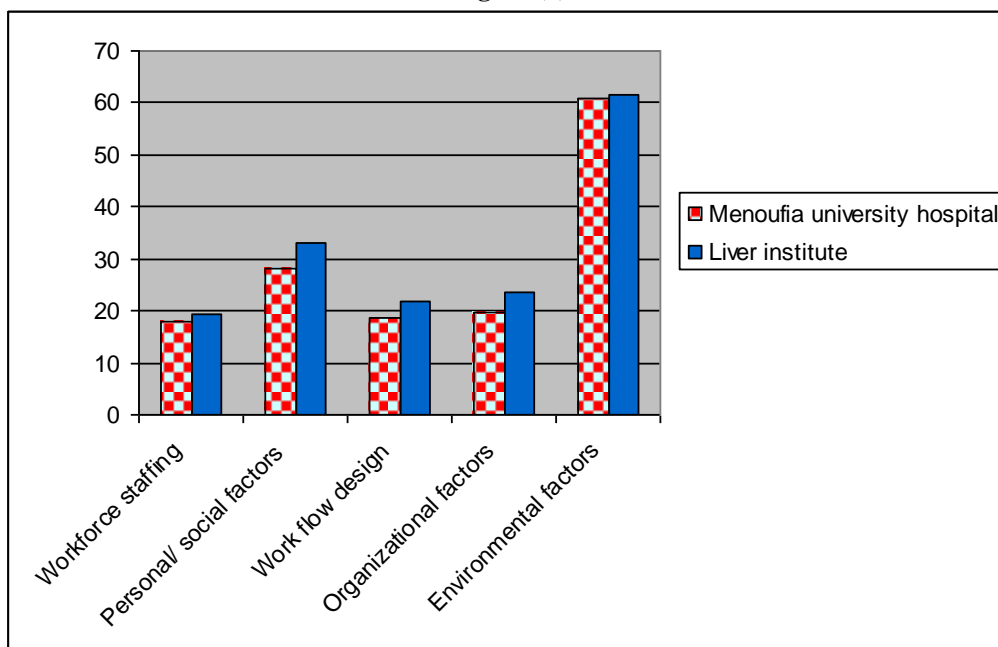


Table (5)& Figure (1) :Represents mean score of studied nurses' perception regarding health care working conditions in the study settings. As revealed from the table, there was increase in mean score of nursing staff perception regarding all domains of working conditions in Liver Institute than mean score of nursing staff perception in Menoufia University Hospital. There were statistically significant differences between the study settings regarding all domains except the environmental factors.

Table(6)Perception Regarding Health Care Working Conditions that Affect Patient Safety According to Their Years of Experience.(N=292)

Parameters	Maximum Score	Years of experience				(F) test and (p-value)
		< 5 years (no=57)	5- years (no=120)	10- years (no=107)	15 or more years (no=8)	
		($\bar{X} \pm SD$)	($\bar{X} \pm SD$)	($\bar{X} \pm SD$)	($\bar{X} \pm SD$)	
Workforce staffing	27	18.7±1.63	18.0±2.75	18.6±2.57	20.3±4.43	3.10 (< 0.05*)
Personal/ social factor	39	31.6±4.32	29.9±5.63	29.9±4.90	31.1±4.52	1.90 (> 0.05)
Work flow design	27	20.7±6.61	19.6±5.46	20.4±5.36	19.6±5.55	0.59 (> 0.05)
Organizational factors	27	22.2±4.25	20.9±4.47	21.7±4.54	19.8±3.92	1.59 (> 0.05)
Environmental factors	69	61.2±6.33	61.4±6.96	61.4±6.51	60.3±6.82	3.38 (> 0.05)
Grand total	189	154.5±19	149.7±20	151.9±18.3	151.0±19.9	0.79 (> 0.05)

* Statistically significant at (P< 0.05).

Table (6): Displays mean score of studied nurses' perception regarding health care working conditions that affect patient safety in the study settings according to and their years of experience. As indicated from the table, there was no statistically significant difference regarding the mean score of all domains except for the workforce staffing as compared to their years of experience.

Table (7): Mean Score of Studied Nurses' Perception Regarding Health Care Working Conditions that Affect Patient Safety According to According to Their Attending of Previous Workshops. (N=292).

Parameters	Maximum Score	Attending Previous Workshops		Student t-test	p-value
		Yes(no=65)	No (no=227)		
		($\bar{X} \pm SD$)	($\bar{X} \pm SD$)		
Workforce staffing	27	18.8±2.39	18.3±2.64	1.24	> 0.05
Personal/ social factors	39	31.2±4.51	30.0±5.27	1.77	> 0.05
Work flow design	27	20.6±6.34	20.0±5.46	0.73	> 0.05
Organizational factors	27	22.9±4.17	21.0±4.45	3.14	< 0.005*
Environmental factors	69	61.4±6.03	61.3±6.82	0.08	> 0.05
Grand total	189	154.9±18.96	150.5±19.71	1.57	> 0.05

* Statistically significant at (P< 0.05).

Table (7): Mean score of studied nurses' perception regarding health care working conditions that affect patient safety in the study settings according to according to their attendance previous workshops about patient safety. As noticed from the table, there was slightly increase in mean score of studied nurses who attended previous workshops than studied nurses who did not attend previous workshops. Also there was no statistically significant difference regarding the mean score of all domains of health care working conditions that affect patient safety except for the organizational factors with their attending of previous workshops.

VI. Discussion

Patient safety is fundamental to nursing care and is of concern wherever nurses work- in the community, acute care hospitals, and long term facilities. It is of prime importance to nurses in all areas; clinical practice, education, research, and leadership/ management positions. For nurses, patient safety is not just part of what they do, nurses are committed through their code of ethics to provide safe, competent and ethical care. From the nursing perspective; instead international studies on patient safety reveal that most harm caused to patients can be attributed to problems in health care system Smits (10).

According to the present study findings the available evidence on workforce staffing factors falls into three major categories: workload, nurse staffing, and work schedules. As revealed from the present study; the majority of nursing staff perceived that workload due to insufficiency of staff nurses, and that their units need more nurses to handle excessive work load, which can be attributed to nursing shortage and contributed to unsuitable nurse /patient ratio. This result is confirmed to Müller et., (11) who stated that significant associations between nursing workload and patient safety. We observed that nursing staff with fewer patients presented best results of care-related and management-related patient safety indicators. such as bed-related falls and central line-associated infections demonstrated that within the study setting, the assignment of greater numbers of patients to the care of each nurse, nurse's aide or nurse technician increases the incidence of these indicators and has a negative impact on patient safety.

Accordingly the present study showed that the majority of nursing staff in both critical and inpatient units reported that number of nurses is not sufficient to handle workload and that their units need more staff. This finding is agreement with Joint Commission (12) stated that Appropriate staffing levels, mix and workload assignments lead to decreased turnover; absenteeism, work-related illnesses, patient satisfaction; improved safety culture

According to the present study, the majority of nurses did not consider the effect of work load on patient safety when formulating work schedule. This finding is in contrast with Geiger and Trinkoff (13) who have clarified that nurses' work schedules are associated independently with patient outcome as the work schedule component can be most frequently related to adverse patient events due to lack of time away from the job, and added the considering nurses' work schedules is important for nurse injury and fatigue because nurses need time off to rest and recuperate to protect their health. Similarly, the lack of recovery time may affect performance.

The findings of the present study revealed that the highest percentage of the nursing staff agree that they are working as a team to face excessive work stress and that the work team members support each others. In agreement with this findings Salem (14) has reported that nursing staff perceive they are working as a team and gaining support from each other when there is workload, and they treat each other with respect.. Therefore, it can minimize errors which results from stress and overload, because of that patient safety depends on good teamwork. On the same line Institute of Medicine (8)Improving safety culture/climate and teamwork Improved patient and worker outcomes; decreased litigation; improved reputation ;decreased turnover that lead to Improve patient and worker safety

The findings of the present study revealed that the majority of nurses agree that feedback and communication about error affect patient safety especially that the hospital provides the nursing staff with incident reports to recognize risks. -In the same line with this Abdou and Saber (15) have found that safety culture differed teamwork within units; honest and open communication among physicians, significantly, not only between hospitals, but also by administrators and healthcare workers; as well as with patients are considered the principal characteristics of a culture of safety World Health Organization (2). and also effective communication is key to patient safety. A review of root cause analyses suggests that in over 60% of errors, poor communication was an important causal factor. Effective communication is also crucial to managing an incident once it has occurred. Communication in the health-care setting may be divided into two types: those between one health-care worker and another, and those between the patient (and/or family member) and a health-care worker. Each has different elements that can contribute to medical errors.

The findings of the present study revealed that the nursing staff freely speaks up about things that may negatively affect patient care, in contrast with this finding Abdou and Saber (15) who have revealed that the nursing staff can't speak up freely if they saw something that may negatively affect resident safety and they can't feel free to question those with more authority.

Additionally, the present study found that nursing staff perceived that the hospital-wide patient safety assessment occurs at regular intervals and the hospital uses the safety assessment results to develop a written patient safety plan. In accordance with this result the recommendation of World Health Organization (2) about the implementation of an integrated patient safety program throughout the organization that involve the identification, assessment, and prioritization of risks followed by coordination and economical application of resources to minimize, monitor and control the probability and impact of unfortunate events. Also require at least annually a report to patient safety committee within the health care organization on the occurrences patient safety problems and actions taken to improve patient safety, both in response to actual occurrences and proactively.

In considering the effect of environmental work conditions on patient safety, the results of the present study indicated that nearly all of the nursing staff strongly perceived most of the environmental working conditions as an important factor affecting patient safety. In contrast with this finding Abdou and Saber (15) study has found that nursing staff perceived that the working environment as weak, unsafe work environment and not supporting patient safety, also there is a lack of healthy working conditions in the physical environment, poor lighting, poor ventilation, poor arrangement of the furniture in the work place, and unpleasant odor, all these factors must negatively affect patient safety.

Also, there was a significant difference between nursing staff of the two hospitals regarding all domains of working conditions except for the environmental factors. This finding is in accordance with results of a survey of patient safety culture conducted among inpatient care units and critical care units by Shih (16) who has revealed that safety culture differed significantly, not only between hospitals, but also by different departments within the health care organization due to discrepancy in the level of education of the working nurses.

Concerning relationship between Sociodemographic characteristics and nurses perception about health care working conditions that affect patient safety. Regarding years of experience, it was noticed that the

majority of nursing staff had 11-15 years of experience, also there was no statistically significance difference concerning all domain of working conditions except for slightly significance differences regarding workforce staffing with years of experience. This finding is consistent with findings of Abdou and Saber (15) who have revealed that the majority of respondents also had 11-15 years of experience. However, the nurses with greater than 15 years of experience having more positive perception toward safety climate compared with younger nurses with 6 years of experience or less. This may be due to the fact that senior nurses have more job satisfaction, could be more knowledgeable, displaying more positive attitude and perception to safety and possibly more committed to work than younger nurses.

Regarding the relation between nursing staff perception about health care working conditions that affect patient safety and their previous attendance of workshops about patient safety, the present study showed that there was no statistical significance difference regarding the mean score of all domains of working conditions except for organizational factors with their attendance of previous work shops, as the majority nurses reported that they did not attend any previous workshop about patient safety. this finding is in accordance with the study conducted by Liane et al (17) who have demonstrated that sensitively delivered training programs for nurse leaders can help to foster a safety culture. Organizational leadership support for improvement is also critical for fostering a culture of safety. Together, training interventions and leadership support may have the most significant impact on patient safety culture.

VII. Conclusion

In the light of the present study it can be concluded that providing insight into nurses' perception about working conditions can be used as a baseline for raising safety awareness throughout the organization and identifying the areas that need for improvement. For all categories of working conditions examined in this study, the mean score of nurses' perception in both Menoufia University Hospital and Liver Institute showed a high level of nursing staff perception toward health care working conditions that affect patient safety in the two settings. There were statistically significant differences between the studied settings regarding all domains except the environmental factors; also there was increase in mean score of nursing staff perception regarding all domains of working conditions in Liver Institute than mean score of nursing staff perception in Menoufia University hospital.

VIII. Recommendation

I. At the Research Level

Further research is recommended in the field of patient safety to further investigate the relationship between the nursing staff perception about working conditions that affect patient safety and their actual performance.

II. At the Educational Level.

- Implement continuous training programmes on patient safety issues for the different categories of health care providers to ensure their own safety as well as patients' safety.
- Developing, updating and disseminating universal protocols and guidelines on evidence-based practices about patient safety aspects.
- Promote a learning environment in which the main objective of analyzing adverse events is not to punish human error but to understand systems weaknesses, serves to enhance patient safety.

III. At the Nursing Staff Level.

- Promote a culture that recognizes nurse fatigue as an unacceptable risk therefore, schedule sensibly.
- Improve capacity of health care staff and managers for developing and implementing a patient safety plan.
- The contribution of nursing interventions to positive patient outcomes should be recognized in organizational budgetary allocations and risk management plans, and reflected in nursing staff salaries. Also, provide feedback to staff following their notification of adverse events.

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