NURSE'S AWARENESS REGARDING PATIENT SAFETY CULTURE AT MANSOURA UNIVERSITY HOSPITAL

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Abstract

Background: The initiative of developing safety to assure patients' safe from harm have become central concerns in quality improvement in the healthcare system. Developing and maintaining safety is a principal aspiration of the current patient safety movement, and sustaining a strong safety culture is seen as imperative to the delivery of safe, high quality and cost-effective patient care. **Aim of the study**: The aim of this study is to assess the nurse's awareness regarding patient safety culture at Mansoura University Hospital. **Subjects and Methods**: A descriptive comparative design was utilized to attain the aim of the present study. The study sample composed of 102 staff nurse. Data was collected by using the hospital survey of patient safety culture (HSPSC) questionnaire (**Aboshaiqah, 2010**). **Results:** more than half of the nurses under study have unawareness of the patient safety culture. There were no statistically significant differences between the awareness of nurses working in medical units and nurses working in surgical units regarding to patient safety culture in all sub dimensions. The majority of the nurses under study did not report the safety events "errors" in their work areas. Number of events written in the last 6 months was very low. **Recommendation:** It is recommended that Policy makers and leaders should develop acceptable standards for patient safety system. This can be achieved through initiated and supported an effective safety culture assessment among all working nurses, Staff development programs are needed for all nurses to understand the values, beliefs, and norms about what is important in an organization and what attitudes and behaviors related to patient safety are expected and appropriate for achieving a culture of safety.

Key words: patient safety culture- quality improvement- error

Introduction:

The issue of patient safety has become one of the most significant challenges facing the health care system [1]. Almost every week, newspaper articles, radio and television reports, and articles in the medical literature keep issues of patient safety in the spotlight. Medical errors are the eighth leading cause of death in the United States. Insufficient patient safety has been documented by researchers, healthcare professionals, news and media outlets [2]. Because of nurses is an important member of the healthcare provider, so she must be aware for everything that has a relation with the patient and his safety, Safety from any harm, from falling, from an incident, from error in medication, from infection and also communication errors that may affect patient safety [3].

Safety can be defined as a set of practices affected by administrators, managers, and caregivers focusing on the reduction and improvement of medical errors continued on a daily basis [4]. Patient safety is the avoidance, prevention and amelioration of adverse outcomes or injuries stemming from the process of health care [5 & 6], However medical errors defiened as "mistakes made in the process of care that result in or have the potential to do harm to patients" [7 & 8].

AboulFotouh et al., did a study of patient safety was performed and

disseminated for policy change as a part of regional study within countries in the EMR. It determined the nature and rate of adverse events in 3 hospitals in Cairo through a review of the medical records. Although the recorded adverse event rate was low (ranging from 1% to 11%, average 6%), 34% of such adverse events were associated with the patient's death and 18% with permanent disability [9].

Aim of study

The aim of this study is to assess the awareness of nurses regarding patient safety culture at Mansoura University Hospital.

Subjects and Methods

1-Study Design:-

A descriptive comparative design was used to carry out this study.

2-Setting:-

The study will be carried out in Main Mansoura University Hospital, which has a bed capacity (1800) beds. All general medical units (three units with bed capacity 60 beds) and all general surgical units (five units with bed capacity 149 beds) was included in this study.

3- Subjects

One hundred & two female staff nurses were included in the study subjects. They represent all staff nurses responsible for providing nursing care to patients at time of data collection in the previously mentioned settings, with a minimum of one year experience. Study nurses included **32** staff nurses working in medical units and **70** staff nurses working in the surgical units**.**

4-Tools of data collection

The data of the study was collected by using the hospital survey of patient safety culture (HSPSC) questionnaire [10], some modifications were done by the researcher. **It is a self administered questionnaire consists of two parts:**

The first part: Includes demographic data of staff nurses as gender, unit, age, educational qualifications, years of experience, marital status, and type of shift.

The second *part:* Includes 6 main headings which are:- **(1) The Work Unit Area** contains 17 items for example People support one another in this unit, **(2) The Supervisor\ Manager** contains 4 items for example My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures, **(3) The Communications** contains 6 items for example We are given feedback about changes put into place based on event reports, **(4) Number of Events Reported** contains 3 items for example When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?, **(5) The Hospital** contains 11 items for example Hospital management provides a work climate that promotes patient safety, and **(6) Reporting Events** contains 2 items for example In the past six months, how many event reports have you filled out and submitted?. It was developed by **Agency for Healthcare Research and Quality.** It was translated into Arabic and the necessary modification was done.

Subjects responses for hospital survey of patient safety culture (HSPSC) questionnaire included in two parts, the first part socio demographic data (7 items), and the second part (43 items) were measured on a 3 likert rating scale ranged from (Disagree or never), (Neutral or sometimes) and (Agree or always). Negative items were reversely coded before the actual calculation. The unawareness response percentage is the percent of respondents who answered (Disagree or never), the awareness response score for each cultural dimension was obtained by averaging the response percentage on the items within the dimension.

Preparatory phase:

The tool was translated by the researcher into Arabic, and tested for face and content validity by seven experts in Nursing Administration, Then the reliability was done by distribute the questionnaire form to ten staff nurses and after two weeks the researcher redistribute the questionnaire form to the same staff nurses and apply the Cronbach's alpha test.

A pilot study was conducted before performing the main study. The questionnaire was tested on a sample of 10 staff nurses from obstetrics and gynecology units "9, 10" in Mansoura University Hospital they represent 10% of the total subjects. They randomly selected and excluded from the total population, after the development of the tool and before starting data collection.

Statistical analysis

- The collected data were analyzed and results were tabulated by using statistical package for social science (SPSS) version 17. Data were presented using descriptive statistics in the form of frequency, percentage (%), mean and standard deviation.
- The confidence interval level chosen for the study was 95%.
- Test of significance were used to compare study groups using chi-square test (X^2), t-test. Statistically significant was considered at p-value less than 0.05.
- Pearson correlation analysis was used for assessment of interrelationship among quantitative variables, to assess the relationship between nurses' awareness as dependant variable and nurses' age, years of experience, type of shift and educational level as independent variables, and comparing the two departments "Medical and Surgical units".

Results

Table (1) Characteristics of the study subjects: Table (1) describes personal characteristics of staff nurses at Mansoura University Hospital. According to the table, the majority of staff nurses (68.6%) working in surgical units, (52%) of nurses age from 20 to 30 years and (27.5%) had experience in nursing from 5 to 10 years. Concerning educational qualification, the majority of staff nurses had nursing school diploma (55.9%), Finally the Most of them were married (90.2%).

Table (2): Comparison between positive responses of nurses working in medical and surgical units regarding patient safety culture: This Table shows Comparison between agreement responses of nurses working in medical and surgical units regarding patient safety culture. According to the table, Teamwork within hospital units dimension was the highest response in medical units (71.8%) and surgical units was (85.7%), also Feedback and communication about error was the lowest response in medical units (21.8%) and Communication openness was the lowest response in surgical units (17.1%). In the other side there is no statistical difference between the positive responses for nurses in both medical and surgical units (p>0.05)

Table (3) Average Percentages of Awareness Responses on the Patient Safety Culture Dimensions. This table illustrate the Average Percentages of Responses on the Patient Safety Culture Dimensions. According to the table, Teamwork within hospital units dimension was the highest score (81.4%) While, Communication openness dimension was the lowest agreed response (19.6%).

Table (4) Frequency and percentage of nurses who write errors at the last 6 months. shows that the percent of no reporting and writing errors is very high as(95.1%).

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Table (5) Correlation between nurse's awareness of patient safety culture "total score" and certain related variables. The table describes the relationship between nurse's awareness of patient safety culture and certain related variables. According to the table, there was a statistical significant relationship between nurses working in medical units awareness regarding patient safety culture with age (p= 0.013) and years of experience (p= 0.009). But there is no statistical significant relationship with other variables and no statistical significant relationship in nurses working in surgical units.

Table (6) Total response of awareness for nurses regarding patient safety culture in medical and surgical units. Shows that the awareness state was (45.1%), while the unawareness state was (54.9%), but nurses worked in surgical units have awareness response higher than nurses worked in medical units

Table (1): Characteristics of the study subjects (n=102)

Items		Frequency	Percent %
1- Age	20<30	53	52
	30<40	27	26.4
	40<50	15	14.7
	50<60	7	6.9
2- Marital status	Single	7	6.9
	Married	92	90.2
	Widowed	3	2.9
3- Education level	Diploma	57	55.9
	Technical institute	45	44.1
4- Years of Experience	1<5	22	21.6
	5<10	28	27.5
	10<15	19	18.6
	15<20	13	12.7
	20 +	20	19.6

N.B:- All study subjects are females & Mean Age (SD) of the study sample are 32.9 ± 9.9

Table (2) agreements of nurses in medical and surgical units regarding patient safety culture

Dimensions	Nurses working in medical units (n=32)		Nurses working in surgical units (n=70)		X^2	P
	No	%	No	%		
1- Teamwork within hospital units	23	71.8	60	85.7	1.9	0.16
2- Supervisor expectations and actions promoting patient safety	14	43.7	38	54.3	0.6	0.4
3- Organizational learning	19	59.37	51	72.8	1.28	0.2
4- Management support for patient safety	9	28.1	25	35.7	0.28	0.5
5- Perception of patient safety	14	43.7	38	54.3	0.6	0.4
6- Feedback and communication about error	7	21.8	18	25.7	0.03	0.8
7- Communication openness	8	25	12	17.1	0.4	0.5
8- Frequency of events reported	8	25	24	34.3	0.5	0.4
9- Teamwork across hospital units	8	25	22	31.4	0.18	0.6
10- Staffing	16	50	42	60	0.5	0.4
11- Handoffs & transitions	13	40.6	29	41.4	0.01	0.9
12- Non punitive response	16	50	41	58.6	0.3	0.5

Table (3) Average Percentages of Positive Responses on the Patient Safety Culture Dimensions

Patient safety culture dimensions	Total Awareness
1- Teamwork within hospital units	81.4
2- Perception of patient safety	50.9
3- Organizational learning	68.6
4- Staffing	56.8
5- Non punitive response	55.9
6- Supervisor expectations and actions promoting patient safety	50.9
7- Feedback and communication about error	24.5
8- Communication openness	19.6
9- Frequency of events reported	31.5
10- Management support for patient safety	33.3
11- Teamwork across hospital units	29.4
12- Handoffs & transitions	41.2

Table (4) Frequency and percentage of nurses who write errors at the last 6 months

Writing errors	Medical units (32)		Surgical units (70)		Total (102)	
	No	%	No	%	No	%
Yes	1	3.1	4	5.7	5	4.9
No	31	96.9	66	94.3	97	95.1

Table (5) Correlation between nurse's awareness of patient safety culture "total score" and certain related variables

Items	Nurses in medical units	Nurses in surgical units
Age	$r = 0.433$ * $p = 0.013$ S	$r = 0.052$ $p = 0.672$ N S
Years of experience	$r = 0.456$ * $p = 0.009$ S	$r = 0.073$ $p = 0.55$ N S
Educational level	$r = -0.266$ $p = 0.141$ N S	$r = 0.117$ $p = 0.334$ N S

* = S = significant   N S = not significant

Table (6) Total response of awareness for nurses regarding patient safety culture

Category	Medical units (32)		Surgical units (70)		Total (102)	
	No	%	No	%	No	%
Aware	12	37.5	34	48.6	46	45.1
Not Aware	20	62.5	36	51.4	56	54.9
Total	32	100	70	100	102	100

Discussion

Patient safety is a critical component of health care quality. Issues on patient safety have become a priority in health policy and healthcare management**.** The rapidity by which healthcare technologies evolve have required greater attention to safety issues necessary for effective, and efficient delivery of high quality services [11]**.** Therefore, the present study aims to assess the awareness of nurses regarding patient safety culture at Mansoura University Hospital.

The findings of the present study showed an overall staff nurses unawareness response to patient safety culture slightly more than the half (54.9%) **as in table (6),** this may be due to ineffective communication which lead to errors in handling patients, some problems occurred during shift changes, mangers not give the first priority to patient safety problems, finally the shortage of staff number also affect the patient safety. This result is congruent with the study conducted in Egypt by **Abbas et al.** [12] which identified poorer perception of safety culture in nurses. On the other hand this study finding were contradicting with a study also conducted in Egypt by Ahmed et al. (2011) which concluded a positive response of nurses toward safety culture [13]. Furthermore, **Tabrizchi and Sedaghat** [14] stated that the overall average positive response rate for the 11 patient safety culture dimensions of the modified version of HSOPSC survey was 57%. On the other hand, According to The present study findings there was no statistical significant difference between the awareness of the nurses working in medical units and surgical units, this may be due to that the nurses have approximately the same response also the medical and surgical units is called cold department with high stability conditions in contrast to intensive care units or emergency department. Finding was contradicting with a study also conducted in Egypt by **Ahmed et al.** [13] which concluded a statistical significant difference between the responses of nurses in some dimensions of patient safety culture.

Based on the agreement responses for each of the 12 dimensions of the patient safety culture dimensions, results suggest that one area were identified as areas of strength: teamwork within hospital units (81.4%); and the following dimensions met AHRQ's definition of areas needing improvement: communication openness (19.6%), feedback and communication about error (24.5%), teamwork across hospital units (29.4%), frequency of events reported (31.5%), management support for patient safety (33.3%), and hospital handoffs and transitions (41.2%) **table (3).**

Results related to areas of strength regarding the patient safety culture revealed that the Teamwork within hospital units was the highest percentage dimension with (81.4%). this may be due to, that the staff nurses treat each other with respect and support, also it might be as a result of the positive team spirit within the same team. This finding was consistent in the same line with the study which was obtained by **Bahrami et al.** [15] at Afshar hospital in Iran about two thirds percent (68.87%) and **Ballangrud et al.** [10] with more than two thirds percent (80.6%).

Results related to Areas for Improvement regarding the patient safety culture revealed that the Communication openness dimension was the lowest percentage dimension in this study with percent (19.6%), Study findings indicate that the nursing staff is not able to speak freely to discuss safety issues, or raise concerns related to mistakes or errors that may affect patient safety. Nursing workload definitely affects the time that a nurse can allot to various tasks. Under a heavy workload, nurses may not have sufficient time to communicate with their managers or even with other nurses in the same unit.

Accordingly **AboulFotouh et al.** [9] mentioned that communication openness dimension was (34.6%) and stated that, Disclosure is very important as a method for risk reduction in organizations, starting with risk reporting, and this is being addressed at Ain Shams University hospitals with the implementation of a quality improvement policy within different departments. **Al-Ahmadi** finds some increase in the response at Saudi Arabia "Riyadh" on this dimension that Public hospitals have near than half (42.6%) and Private hospitals have (51.5%) [17].

The second dimension in areas that needs improvement regarding the patient safety culture was Feedback and communication about error with poor percent close to one fourth (24.5%), this poor percent may be due to that The relationship between nurses and their direct managers doesn't seem to be conducive to open communication. This may be due to poor communication and lack of support expected from direct managers. Many errors in organizations were unreported simply because of fear of blame or punishment by the manager as well as by peers. This would clearly lead to potential injury to patients and influence learning from experience by the team. This finding agreed with **AboulFotouh, et al.** [9] which stated that it has a low percent (39.7%) and area that potential for improvement. Furthermore, **Tabrizchi and Sedaghat** concluded that this dimensions received low positive response rate (44%) [14].

Researchers in other high risk industries report that lack of communication leads to unsafe worker behaviors including errors, policy and procedure violations, and not reporting events or any problems that may affect patient health conditions. Better communication between workers is needed to increase the quality of work and the effectiveness of patient safety cultures.

This findings contradicting with **Al-Ahmadi** not agreed with our results as Public hospitals (61.1%) and Private hospitals (73.3%) [17].

Concerning the dimension of teamwork across hospital units, the overall positive response rate was (29.4%), in contrast with the first dimension "Teamwork within hospital units" this poor percent may be due to that there is no co-operation across the hospital units and no integrity in the work across the various departments. This finding was agreed with the finding of **Ballangrud et al.** [16] as (37.5%), and with **AboulFotouh, et al.** [9] as (38%). And the findings contradicting with **Tabrizchi and Sedaghat** [14] who concluded that this dimensions received higher positive response rate about two thirds (77%).

The findings related to Frequency of events reported dimension was (31.5%), this poor percent might be due to that the nurses fear from blame or punishment by the manager and lack of support expected from direct managers. Another explanation as mentioned above, the nursing staffs may have inadequate training in this regard; consequently it may lead to develop unexpected threats. The hospitals' staff needs better training in safety related issues and encouraged for reporting errors. This finding was agreed with the finding of **Ballangrud et al.** as (18%) [16]. **Tabrizchi and Sedaghat** [14] cocluded that (72 %) of staff said that nothing reported over the 12 previous months, moreover, they had (50%) positive score on "frequency of event reported dimension". **Bahrami et al.** [15] found low scores in frequency of events reported means that mistakes are not reported in the Afshar hospital as (34.9%) and Burning hospital as (16.66 %). Also this finding contradicting with the results of **Zein ElDin and Abd El Aal** [18] whose revealed the reporting system as a high percent (73%).

The highest awareness percentage of staff nurses working in medical units is teamwork within hospital units (71.8%), and this dimension is also the same highest percentage of staff nurses working in surgical units (85.7%). These results may be attributed to that, these units' needs more collaborative efforts to provide the total care for the patients, which increase the teamwork abilities.

The lowest percentage of reporting errors (4.9%) in the studied sample may explain the negative response to staff nurses regarding patient safety. This also may suggest that the environment of the hospital may support the culture of blame more than the safety improvement culture. Of great concern, the findings of the present study revealed that there was a statistically positive significant correlation between the response of the nurses working in medical units regarding patient safety culture with their age as (p = 0.013) and years of experience as (p = 0.009) and this results was matched with the results of **Abdou and Saber,** whose stated that, there was a statistically significant difference among nurses regarding their of nurses' perception for all safety culture dimensions specifically with shift (p =0.001), age group (p = 0.022) and educational qualification (p = 0.043). This might be due to older nurses are more satisfied with managers support because they accept that older nurses could be more knowledgeable, displaying more positive attitudes to safety and possibly more committed to work than younger workers [19].

Ahmed et al., [13] concluded that the correlation of staff nurses' age and their perception of patient safety culture showed significant weak negative correlation. These results was contradicting with **Tabrizchi and Sedaghat,** [14] as they stated that There was no relationship between age and working years in their present center or total work records and

patients safely culture score (*P*=0.45, *P*=0.59 respectively).

Conclusion

The findings of the present study concluded that, more than half of the nurses under study have unawareness response regarding patient safety culture. The majority of the nurses under study did not report the safety events "errors" in their work areas. There are areas of strengths and weaknesses in nurse's awareness that can be improved to provide best safe culture for patient care. Teamwork within hospital units dimension scored the highest response "area of strength". Communication openness dimension scored the lowest response "area of weakness needs improvement". There was a statistically positive significant correlation between the response of the nurses only working in medical units regarding patient safety culture with their age and years of experience.

Recommendation

1- Nurses should encourage participating in enhancing safety activities and communication channels in order to obey safety regulation.

2- Policy makers and leaders should develop acceptable standards for patient safety system. This can be achieved through initiated and supported an effective safety culture assessment among all working nurses.

3- Hire proper and qualified staffing who have a culture that values patient safety. This will be useful to cover the shortage of numbers in staff nurses and provide a good nursing care.

4- There should be a blame-free system for identifying threats to patient safety, sharing information and learning from events.

5- Encouraging nurses to speak up and discuss situations on a regular basis will lead to raising awareness and

awakening consciousness of patient safety issues.

6- Staff development programs are needed for all nurses to understand the values, beliefs, and norms about what is important in an organization and what attitudes and behaviors related to patient safety are expected and appropriate for achieving a culture of safety.

Further research

Further studies are needed for testing the reliability of the improvement plan and accordingly implementing it at the study settings.

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