Perception of Nurses and Physicians toward Safety Culture at Damanhour National Medical Institute

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Abstract:

Background: International patient's safety strategies advocate measuring safety culture as a strategy to improve patient's safety. Safety culture is the set of values, beliefs, and norms about what is important, how to behave, and what attitudes are appropriate when it comes to patient safety in a workgroup. **Aim:** To identify health nurses and physicians' perception toward patient safety culture. **Setting:** All inpatients and outpatients units at Damanhour National Medical Institute (n=18). **Subjects:** 50 Professional nurses, 200 technical nurses and 100 physicians. **Tool:** Hospital Survey on Patient Safety Culture (HSPSC) was used. The tool contains 42 items that measure 12 dimensions each dimension includes 3 or 4 survey items. **Results:** The dimension "teamwork within units" received the highest mean percent score for nurses (80.3±10.4) and physicians (74.0±12.7), while, "handoffs and transitions" dimension received the lowest mean percent score for nurses (58.9±13.5). As for physicians, the lowest mean percent score was for "team work across units" with a score of (61.6±10.2). Regarding nurses' educational qualification, nursing staff differed significantly in their perception to the overall patient safety culture (p=0.029). Regarding the physicians, there were significant differences in their perception of the overall patient safety culture as for age groups (p=0.004), their working hours (p=0.014), their years of experience in hospital (p=0.000) and years of experience in unit (p=0.000). **Conclusion:** The study concluded that the dimension "teamwork within units" received the highest mean percent score for nurses and physicians, while "handoffs and transitions" dimension received the lowest mean percent score for nurses. As for physicians, the lowest mean percent score was for "team work across units". **Recommendations:** A training program for nurses about appropriate patient handoff and transfer, for physicians about the importance of team work and how to establish an effective team.

Keywords: Patient safety culture; HSPSC; Team work across units; handoffs and transitions; overall perception of safety culture.

Introduction:

Improving patient's safety should be among the highest priorities of health care leaders and managers, as it is not a static state or endpoint, but rather several related multidimensional concepts that work together to form the complex matrix of a safe patient environment. [(1,2)] Nowadays, the issue of patient's safety has become one of the most significant challenges facing the health care system.[(3)]

The Institute of Medicine (IOM) (2000) [(4)] has defined patient's safety as freedom from accidental injury. Ensuring patient's safety involves the establishment of operational systems and processes that minimize the likelihood of errors and maximize the likelihood of intercepting them when they occur. Moreover, patient's safety is conceptualized as the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the processes of health care. [(4)]

International patient's safety strategies advocate measuring safety culture as a strategy to improve

patient's safety. Also, evidence suggests that it is necessary to fully understand the safety culture of an organization to make improvements to patient's safety. [5]

A safety culture can be defined as the set of values, beliefs, and norms about what is important, how to behave, and what attitudes are appropriate when it comes to patient safety in a workgroup. Moreover, Page [6] has described a patient's safety culture as one that carefully monitors for unsafe situations, cultivating attitudes and behaviors that enhance patient safety. It also enforces a non-punitive error-reporting environment, and uses data analysis to understand causes of error. A positive safety culture is characterized by communications founded on mutual trust, shared perceptions of the importance of safety, and confidence in the efficacy of preventive measures. [7]

In 2004, the Agency for Healthcare Research and Quality (AHRQ) developed the Hospital Survey on Patient Safety Culture (HSPSC) to assess the safety culture of a hospital as a whole, or specific units within a hospital, as well as to track changes in patient's safety over time and evaluate the impact of patient's safety interventions. The (HSPSC) is composed of several dimensions for patient's safety which are; Communication openness, feedback and communication about error, frequency of event reporting, hospital handoffs and transitions, hospital management support for patient's safety, non-punitive response to error, organizational learning–continuous improvement, overall perceptions of safety, staffing, supervisor/manager expectations and action promoting safety teamwork across units and teamwork within units. [7]

Communication openness indicates the freedom given to the staff to ask questions and speak up for anything that affects the patient negatively. Feedback and communication about error discusses the staff awareness by errors that happen, given feedback about changes implemented, and discuss ways to prevent them. Frequency of event reporting seen as those events which are caught and corrected before affecting the patient, and those which could harm the patient. Hospital Handoffs and transitions mean that important patient care information is transferred across hospital units and during shift changes. Hospital Management support for patient's safety achieved through immersing a work climate that promotes patient's safety and shows it as the top priority. [3, 8]

Non- punitive response to error through which the staff feel that their mistakes and event reports are not held against them, and that mistakes are not kept in their personnel file. Organizational learning–Continuous improvement means creating culture in which mistakes lead to positive changes which are evaluated for effectiveness. Overall perceptions of safety in which procedures and systems are good at preventing errors and there is a lack of patient's safety problems. Staffing reflects the availability of the staff to handle the workload, and work hours are appropriate to provide the best care for patients. Supervisor/manager expectations and action promoting safety in which supervisors/managers consider staff suggestions for improving patient's safety, to praise staff to maintain patient's safety procedures, and do not overlook patient's safety problems. Teamwork across hospital units needs that

hospital's units cooperate and coordinate with each other to provide the best care for patients. Teamwork within units needs the staff to support one another, treat each other with respect, and work together as a team. [9]

Several international studies were done to assess the patient's safety and safety culture. Witherell [10] studied the perception of registered nurses (RN) towards safety culture and concluded that identifying the areas of strengths and others that need improvements give the organization the opportunity to use this information in continuous improvement initiatives. Another study was carried out by Al-Ateeq [9] to examine the relationship between nurses' perceptions of their work environment and perceived patient's safety culture which concluded that crucial change must take place in health care in relation to hospital patient safety culture and work environment of the nurses.

In Egypt, a study was done to explore nursing staff perception toward factors related to working conditions affecting patient's safety. The study concluded that identifying working condition can affect quality of patient's safety which in turn influences the success of health care organization. [11] Another study was done to explore nurses' attitude and behavior toward incident report. The study revealed that for medical errors to decrease and for patient's safety to improve, it is necessary to consider the need for change of dynamics of health care as a system that is influenced by individuals and the culture itself. [12]

Significance of the study:

Failure to assess perceptions of nurses and physicians can cause managers to make incorrect inferences regarding cultural assessments, and potentially cause additional harm by either rewarding the wrong behaviors or diverting scarce resources away from important efforts. [2,5] Yet, the current study aims to identify nurses and physicians' perception toward safety culture, consequently, managers will explore the areas of strengths and the areas which need further improvements to develop strategies for creating better safety environment for patient care.

Research question:
What is nurses' and physicians' perception toward safety culture at Damanhour National Medical Institute?

Subject and Methods:
Research design:
Descriptive comparative design was used in this study.
Setting:
The study was conducted in all inpatients and outpatients units of Damanhour National Medical Institute, which include18 units.
Subjects:
250 nurses who are working in all units and were available during the study period were included in the study. They are classified as follow: 50 Professional nurses had Bachelor of Science Degree in Nursing, 200 nurses had Secondary Technical Nursing Diploma and 100 physicians working in all hospitals' units.
Tool:
The tool used in the study was Hospital Survey on Patient Safety Culture (HSPSC). [3] It was developed by Agency for Healthcare Research and Quality (AHRQ) in (2004), in order to assess the culture of patient safety in hospitals. The tool contains 42 items that measure 12 dimensions known to be associated with patient safety culture each dimension includes 3 or 4 survey items. The 12 dimensions are; 1) Supervisor/manager

expectations and actions promoting safety, 2) Organizational learning-continuous improvement ; 3) Teamwork within hospital units; 4) Non-punitive response to Error; 5) Staffing; 6) Hospital Management Support for Patient Safety; 7) Teamwork across hospital units; 8) Hospital handoffs and transitions and 9) Overall perceptions of safety. The responses of the previously nine mentioned dimensions are measured using Likert scale using 5 point response categories in terms of agreement (5=strongly agree to 1=strongly disagree). [3, 13]

While responses for the remaining three dimensions namely; 10) Communication openness; 11) Feedback and communication about error and 12) frequency of event reporting are measured using 5 point Likert scale in terms of frequency (5=always, to 1=never). The survey items were worded in both positive and negative directions. The negative worded items were reverse coded before data analysis. In addition several demographic variables (experience, staff position, and workload), and hospital type public or private) were included. This tool was used for both nurses and physicians. [14]

Content validity and reliability:

The (HSPSC) was translated into Arabic language; and tested by five experts in the field of the study for its content validity and translation, then all modification were carried out. Reliability of (HSPSC) was measured using Cronbach alpha coefficient = 0.781 for physicians and = 0.777 for nurses.

Pilot study:

A pilot study was carried out on 25 nurses and 10 physicians (10%) of the total sample who were not included in the study to identify obstacles that may be encountered during data collection and no modifications were done.

Field work:

The questionnaires were hand delivered to the study subjects and then recollected at the same day in the period from 1st to 20th of March 2012.

Administrative and ethical considerations:

An official permission was obtained from the hospital administrators to collect the necessary data. A written informed consent was obtained from the subjects of the study for collecting needed data. Confidentiality and anonymity were maintained.

Statistical design:

After data were collected it was coded and fed to statistical software SPSS version 16. All statistical analysis was done using two tailed tests and alpha error of 0.05. P value equals to or less than 0.05 was considered to be significant.

Regarding scoring system, the items scores for each domain were summed together then the sum of scores for each dimension and total score was calculated by summing the scores given for its responses. The scores then transformed into score percent as the following:

Score % = (the observed score / the maximum score) x 100

The following statistical tests were used:

Analysis of numeric data: One-Sample Kolmogorov - Smirnov Test: Descriptive statistics in the form of mean with standard deviation for the normally distributed data. Spearman correlation co efficient and Mann-Whitney test and Kruskal-Wallis test.

Results:

Table (1) shows the nurses distribution according to their

demographic characteristics. It could be observed from the table that female nurses received the highest percent 98.4 % as compared to male nurses who were represented with 1.6%. Regarding nurses age 44% of nurses were aged from 30 years to less than 40 years.

Considering educational qualifications 78.8% of nurses had diploma degree from technical nursing secondary school. In relation to the working hours above fifty percent (52.2%) of nurses are working more than 50 hours weekly. As for the working units, the highest percent of nurses 17.2% are working in surgical units.

In relation to years of experience at hospital, 40.8% of nurses had 21years of experience and more. While for experience in the unit 19.6% of nurses had11<16 years at the unit as compared to those nurses who had < 1year and those who had 21years and more in the unit who were represented by equal percentage of 15.2%. In relation to nurses' job title, 79.6% are bed side nurses.

Table (2) shows the distribution of physicians according to their demographic characteristics .The table denotes that male physicians received the highest percent 84.0%. In relation to physicians age, 53% of physicians were aged from 20 < 30 years, considering their educational qualification 55% had Bachelor of Medicine. As regard to physicians working hours, 50% are working for less than 50 hours per week. Regarding the working units, 21% are working in neonates unit. In relation to years of experience in hospital, 40%of physicians had less than 1year experience while 3% of physicians had from 16 years < 20 years. Considering years of experience in unit, 44% of physicians had < 1year experience while 4% of physicians had 16< 20

years. Regarding physicians' job title above 62% of physicians are Resident; as compared to 2 % were Head of departments.

Table (3) represents mean percent score of Hospital Survey on Patient Safety Culture (HSPSC) dimensions as perceived by nurses and physicians. It was observed from the table regarding nurses' perception of (HSPSC) dimensions that the dimension "teamwork within units" received the highest mean percent score (80.3±10.4) while, "handoffs and transitions" dimension received the lowest mean percent score (58.9±13.5). Regarding physicians' perception of (HSPSC) dimensions, the dimension "teamwork within units" also received the highest mean percent score (74.0±12.7) while "teamwork across units" received the lowest mean percent score (61.6±10.2).

It is observed also that there were significant differences between nurses and physicians in 8 dimensions which are "teamwork within units" p=0.000, "organizational learning" p=0.000, "overall perceptions of patient safety" p=0.002, "feedback and communication about error" p=0.000, "communication openness" p=0.031, "teamwork across units" p=0.000, "staffing" p=0.000 and "handoffs and transitions" p=0.000.

Table (4) shows nurses mean score of total HSPC in relation to their demographic characteristics. It is observed from the table that the only significant difference (p=0.029) was between different nurses' educational qualification, denoting that nurses who had Bachelor Degree of Nursing Science had higher perception (150.3±12.6) as compared to nurses who had Master Degree (143.3±6.0)

Table (5) illustrates the physicians mean score of total HSPC in relation to their demographic characteristics. It was observed from the table that regarding the physicians' age, the

highest mean score (154.0±8.1) was for physicians aged 50 ≤ 60 years while physicians aged from 20 < 30 years perceived the lowest mean score as they recorded (135.7±12.2) with significant difference (p=0.004.) Considering the physicians' working hours (141.5±13.5) was the highest mean score for physicians who are working above 60 hours per week while, (138.8±14.9) was the lowest mean score for physicians who are working less than 50 hours per week with significant difference (p=0.014). As for physicians' years of experience in hospital (154.0±8.1) was the highest mean score for physicians who had above 21 years in hospital, while, (132.9±13.9) was the lowest mean score for physicians who had 11 <16 years in hospital with significant difference (p=0.000). Considering physicians' years of experience in unit (151.8±8.1) was the highest mean score for physicians who had above 21years in unit while, (131.7±14.9) was the lowest mean score for physicians who had 11 < 16 years in unit with significant difference (p=0.000).

Discussion:

Patients' safety issues 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. [15] Safety culture of health care organization acts as a guide as to how nurses and physicians will behave in the workplace. Their behaviors will be influenced or determined by what behaviors are rewarded and acceptable within the workplace. [16]

The present study findings showed an overall nurses and physicians positive response to patient safety culture. This could be due to ongoing education and training on safety measures provided to nurses and physicians as requirement for in service training such as infection control measures, effective communication, cardio pulmonary resuscitation and weekly seminars given to physicians by their seniors. These results are congruent with Singer et al., [17] and Bscphm et al., [18] who found that, the overall percentage of positive response to patient safety culture was higher than negative one also the culture differed significantly, not only between hospitals, but also by clinical status and job class within individual institutions. On the other hand these study findings contradict with a study conducted in Egypt by Abbas, Badder and Bassiuni [19] who identified poor perception of safety culture by health care providers.

The current study results showed that both nurses and physicians perceived "teamwork within units" dimension as the highest. This could be attributed to the nature of nurses' and physicians' work which mainly depends on working in teams either team formed from nurses or multidisciplinary teams. It was observed during data collection that nurses were performing most of their duties together such as preparing, giving medications as well as the patient's hygienic care to critically ill patients. These findings contradict with those of Aboul- Fotouh et al., [20] who found that low perceptual level of the dimension "teamwork within units" among nurses and physicians.

Regarding the lowest mean percent score, nurses differed than physicians. Nurses perceived "handoffs and transitions" as the lowest dimension while physicians perceived "team work across unit" as the lowest dimension. As for nurses, this result could be due to incomplete shift report or missing information

during handoff or transition of patients, also documentation importance is not well recognized among nurses. These findings are relevant to studies done by Aboshaiqah [3] and Al-Ahmadi [21] but contradict with those findings of Ahmed, Adam and Abd Almoniem [22] and Hatam et al.[23]

As for physicians who rated the "team work across units" as the lowest dimensions. This result may be explained by the great time pressures and heavy loads in the studied hospital and they are less cooperative and coordinative across units. These findings in same line with study done by Çakil [24] who concluded that public hospitals lacked of coordination across units These findings differ from what was found by Tabrizchi and Sedaghat [25] who reported high positive response rate for the dimension of "Teamwork across units" among physicians.

The current study findings showed that the level of education significantly differed with nurses' over all perception of safety culture denoting that those with Bachelor of nursing science had the highest perception. This could be due to that in the studied hospital nurses with Bachelor of Nursing Science mostly are working as first line nurse mangers and they are responsible about the application of patient safety measures in their units as making rounds to insure unit cleanness, proper documentations in patients files, application of infection control measures and check patients for any complains. These findings are congruent with what was reported by Barrow [26] who found significant relation between level of education of nurses and physicians and perception of safety culture. On other hand Aboshaiqah [3] found that no difference in perception of patient safety culture

between nurses with different educational levels.

In relation to physicians there were significant differences with age, working hours, years of experience in

hospital and in unit in relation to physicians overall perception of safety culture. It was found that older physicians who had above twenty years of experience at hospital and unit and worked above sixty hours per week had the higher overall perception .This may be attributed to that the more experienced and older physicians who worked for longer hours had a broader perspective and better understanding of patient care than less experienced and younger physicians. These findings correspond with the study of Aboul-Fotouh et al.[20] These findings are in opposite with what was found by Barrow [26] who showed that most of demographic variables of health care providers such as age ,working hours per week, current hospital work experience had no relationship with patient safety culture.

Conclusion:
Results of this study revealed that the highest mean percent score for nurses and physicians was for "teamwork within units", while the lowest mean percent score of nurses' perception was "handoff and transitions" and of physicians was for "teamwork across units". Also, it was found that nurse with Bachelor Degree of Nursing science had the highest overall perception of patient safety culture and differed significantly from other educational levels. As for physicians, there were significant differences between age groups, working hours, years of experience in hospital, in units and their overall perception of safety culture.

Recommendations:
Based on these results, the following recommendations were developed:

1. A training program should be provided to nurses about appropriate patient handoff and transfer as (how to write shift report, for whom).
2. There should be enough of nursing staff for patient care by initiating nursing school inside the studied organization to overcome nursing shortage as suggested by nursing director.
3. A training program for physicians about the importance of team work and how to establish an effective team.
4. Encouraging nurses and physicians to speak up and discuss situations on a regular basis will lead to raising awareness and awakening consciousness of patient safety issues.
5. Nursing and hospital mangers should spend time visiting front line situations, meeting with staff on different shifts regularly, and creating appropriate channels for staff to voice safety concerns.
6. Establish an environment of trust in which nurses and physicians are encouraged, even rewarded, for providing essential safety-related information.

Table (1): Distribution of nurses according to their demographic characteristics

Nurses' demographic characteristics	No (n=250)	%
Sex:		
▪ Male	4	1.6
▪ Female	246	98.4
Age :		
▪ 20-	50	20
▪ 30-	110	44
▪ 40-	65	26
▪ ≤60	25	10
Educational qualifications:		
▪ Bachelor of nursing science	50	20
▪ Master degree in nursing	3	1.2
▪ Secondary school nursing diploma	197	78.8
Working hours/ wk:		
▪ <50	115	46
▪ 50≤60	131	52.4
▪ 60+	4	1.6
Working unit:		
▪ Medical units	23	9.2
▪ ER	23	9
▪ Surgery	43	17.2
▪ ICU	31	12.4
▪ Obstetric and gynecology	15	6
▪ Operating room	0	0
▪ Renal	8	3.2
▪ Dialysis	18	7.2
▪ Neurology	7	2.8
▪ Pediatric	11	4.4
▪ Neonates	10	4
▪ Orthopedics	11	4.4
▪ Outpatients	32	12.8
▪ Pediatric observation room	**9**	**3.6**
▪ Others	9	3.8
Years of experience		
▪ < 1 year	1	0.4
▪ 1-<6	4	1.6
▪ 6-<11	26	10.4
▪ 11-<16	63	25.2
▪ 16-<21	54	21.6
▪ 21+	102	40.8
Years of experience in unit		
▪ < 1 year	38	15.2
▪ 1-<6	44	17.6
▪ 6-<11	40	16
▪ 11-<16	49	19.6
▪ 16-<21	41	16.4
▪ 21+	38	15.2

Conti. table (1):

Nurses' demographic characteristics	No (n=250)	%
Job title:		
▪ Bed side nurse	199	79.6
▪ Professional nurse	33	13.2
▪ Head nurse	13	5.2
▪ Nurse supervisor	3	1.2
▪ Assistant director of nursing	1	0.4
▪ Director of nursing	1	0.4

Table (2): Distribution of Physicians according to their demographic characteristics

Physicians' demographic characteristics	No (n=100)	%
Sex:		
▪ Male	84	84.0
▪ Female	16	16.0
Age :		
▪ 20-	53	53.0
▪ 30-	30	30.0
▪ 40-	9	9.0
▪ ≤60	8	8.0
Educational qualifications:		
▪ Bachelor of medicine	55	55.0
▪ Master degree	35	35.0
▪ PhD. degree	7	7.0
▪ Fellowship degree	3	3.0
Working hours/ wk:		
▪ <50	50	50.0
▪ 50≤60	21	21.0
▪ 60+	29	29.0
Working unit:		
▪ Medical units	6	6.0
▪ ER	8	8.0
▪ Surgery	19	19.0
▪ ICU	1	1.0
▪ Operating room	13	13.0
▪ Renal	7	7.0
▪ Dialysis	7	7.0
▪ Neurology	9	9.0
▪ Pediatric	9	9.0
▪ Neonates	21	21.0
Years of experience		
▪ < 1 year	40	40.0
▪ 1-<6	33	33.0
▪ 6-<11	9	9.0
▪ 11-<16	7	7.0
▪ 16-<21	3	3.0
▪ 21+	8	8.0
Years of experience in unit		
▪ < 1 year	44	44.0
▪ 1-<6	31	31.0
▪ 6-<11	10	10.0
▪ 11-<16	6	6.0
▪ 16-<21	4	4.0
▪ 21+	5	5.0
Job title:		
▪ Resident	62	62.0
▪ General practitioner	7	7.0
▪ Specialist	19	19.0
▪ Consult	10	10.0
▪ Head of department	2	2.0

Table (3): Mean percent score of Hospital Survey on Patient Safety Culture (HSPSC) dimensions as perceived by nurses and physicians

Dimensions	Nurses		physicians		Z	P
	Mean%	SD	Mean%	SD		
Teamwork Within Units	80.3	10.4	74.0	12.7	4.6	0.000*
Supervisor/Manager Expectations & Actions	73.1	11.2	69.3	15.2	1.7	0.088
Organizational Learning -continuous improvement	80.2	10.7	68.7	15.3	7.1	0.000*
Management Support for Patient Safety	62.3	12.3	62.7	11.7	0.1	0.910
Overall Perceptions of Patient Safety	68.3	10.9	64.1	11.1	3.2	0.002*
Feedback and Communication About Error	79.1	15.3	65.7	16.2	7.0	0.000*
Communication Openness	65.0	12.5	62.6	10.9	2.2	0.031*
Frequency of Events Reported	64.1	19.3	62.9	15.1	0.3	0.802
Teamwork Across Units	68.4	12.3	61.6	10.2	5.2	0.000*
Staffing	64.1	10.3	70.3	10.8	5.3	0.000*
Handoffs and Transitions	58.9	13.5	65.7	15.8	4.3	0.000*
Non-punitive response to error	72.6	13.8	68.8	16.7	1.1	0.277
Total Mean	71.3	5.4	68.2	6.4	3.8	0.000*

Z: Mann-Whitney test for independent samples
* P < 0.05 (significant)

Table (4): The nurses' mean score of total Hospital Survey on Patient Safety Culture (HSPSC) in relation to their demographic characteristics

Nurses' demographic characteristics	No (n=250)	%	X^2	P
Sex:				
▪ Male	146.5	11.6	Z=0.30	0.762
▪ Female	146.2	11.1		
Age :				
▪ 20-	143.7	12.0		
▪ 30-	146.5	12.7	1.1	0.780
▪ 40-	147.6	8.1		
▪ ≤60	146.8	7.3		
Educational qualifications:				
▪ Secondary school nursing diploma	145.2	10.5		
▪ Bachelor of nursing science	150.3	12.6	7.1	0.029*
▪ Master degree in nursing	143.3	6.0		
Working hours/ wk:				
▪ <50	148.2	10.8		
▪ 50≤60	144.7	10.8	2.1	0.364
▪ 60+	141.0	21.8		
Years of experience in hospital				
▪ < 1 year	133.0	0.0		
▪ 1-<6	146.5	14.6		
▪ 6-<11	142.3	11.4	5.3	0.376
▪ 11-<16	147.9	13.5		
▪ 16-<21	146.3	11.3		
▪ 21+	146.3	8.9		
Years of experience in unit				
▪ < 1 year	148.3	14.5		
▪ 1-<6	148.4	10.9		
▪ 6-<11	145.4	10.9	8.7	0.121
▪ 11-<16	144.3	11.0		
▪ 16-<21	146.3	7.7		
▪ 21+	144.0	10.8		
Job title:				
▪ Bed side nurse	145.2	10.5		
▪ Professional nurse	151.2	14.3		
▪ Head nurse	148.7	9.6	5.4	0.311
▪ Nurse supervisor	143.7	6.1		
▪ Assistant director of nursing	149.0	0.0		
▪ Director of nursing	152.0	0.0		

X^2: Kruskal –Wallis test for independent samples
Z: Mann-Whitney test for independent samples
* P < 0.05 (significant)

Table (5): The physicians' mean score of total Hospital Survey on Patient Safety Culture (HSPSC) in relation to their demographic characteristics

Physicians' demographic characteristics	No (n=100)	%	X^2	P
Sex:				
▪ Male	139.7	12.7	Z= 0.32	0.753
▪ Female	140.8	16.0		
Age :				
▪ 20-	135.7	12.2		
▪ 30-	144.6	12.6	13.1	0.004*
▪ 40-	136.0	11.7		
▪ ≤60	154.0	8.1		
Educational qualifications:				
▪ Bachelor of medicine	137.4	13.6		
▪ Master degree	144.2	10.5	**2.7**	0.443
▪ PhD. degree	141.1	18.2		
▪ Fellowship degree	131.0	8.5		
Working hours/ wk:				
▪ <50	138.8	14.9	8.5	0.014
▪ 50≤60	140.0	7.2		
▪ 60+	141.5	13.5		
Years of experience				
▪ < 1 year	135.5	13.9		
▪ 1-<6	142.1	11.6	28.7	0.000*
▪ 6-<11	142.9	8.7		
▪ 11-<16	132.9	13.9		
▪ 16-<21	142.3	5.5		
▪ 21+	154.0	8.1		
Years of experience in unit				
▪ < 1 year	136.9	14.5		
▪ 1-<6	141.7	11.6	23.8	0.000*
▪ 6-<11	142.6	8.3		
▪ 11-<16	131.7	14.9		
▪ 16-<21	148.0	7.9		
▪ 21+	151.8	8.4		
Job title:				
▪ Resident	139.8	12.1		
▪ General practitioner	124.6	14.0	14.4	0.006
▪ Specialist	141.4	11.3		
▪ Consult	145.3	15.5		
▪ Head of department	153.0	18.4		

X^2: Kruskal –Wallis test for independent samples
Z: Mann-Whitney test for independent samples
* P < 0.05 (significant)

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