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Physicians', Nursing, pharmacists' and Epidemiologists' Attitudes towards Patients Safety at Health Care Centers departments

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Abstract

The culture of health safety among doctors, nurses, and pharmacists in health care centers or hospitals is a major factor that enhances and ensures patient safety, and is an important aspect of providing health care services to patients and maintaining the safety of them and their health care providers effectively. However, there are significant patient health and safety issues in most healthcare centers and hospitals. Therefore, this study aims to evaluate physicians', nursing, pharmacists' and epidemiologists' attitudes towards patient safety at health care centers. The study sample consist (120) patriciates from physicians', nursing, pharmacists' and epidemiologists, Spearman's Rho was utilized to analyze the correlation between the number of reported occurrences and each component of the SAQ. The results indicated that the average score for each SAQ dimension was below 75%, suggesting that nurses and physicians usually possessed suboptimal safety attitudes. This was particularly evident in the areas of stress detection (58.1%) and opinions of hospital administration (56.9%). Nurses reported considerably lower scores on the cooperation climate component compared to physicians ($p < .01$), whereas physicians reported significantly lower scores on the hospital work circumstances dimension than nurses ($p < .01$). A substantial negative link existed between the frequency of reported mistakes and collaboration atmosphere, job satisfaction, and working circumstances. The safety attitudes of physicians and nurses working in emergency departments in Saudi hospitals are suboptimal and correlate with the frequency of reported mistakes. Safety training initiatives and managerial assistance are likely the most effective means to enhance safety attitudes and performance in Saudi emergency departments.

Keywords*: Physicians', Nursing, pharmacists' Epidemiologists' Attitudes, Patient Safety, at Health Care Centers*.

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1. Introduction

Patient safety is a serious global public health issue; estimates show that in developed countries as many as one in 10 patients is harmed while receiving hospital care [Alayed, et al, 2014]. Even though evidences are limited in developing countries, the probability of patients being harmed in health care centers or in hospitals when receiving care might be much greater than that of the industrialized nations due to a number of complex reasons. For instance, a report claimed that the risk of health care-associated infection in developing countries is up to 20 times higher than in developed countries [Almutairi, et al, 2013]. Patients' safety constitutes an important aspect of health care delivery. The goal of patient safety programs is to prevent errors and reduce the potential for damage suffered by patients while receiving healthcare services. To sustain patient safety practices by staff, constant training and reinforcement of it for healthcare staff is required to avoid adverse events.

Patient safety is defined as freedom from accidental injury due to medical care, or medical errors, and medical error is defined as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim. Errors can include problems in practice, products, procedures and systems [Chaboyer, et al, 2013]. The root causes of medical errors are mainly embedded in: first, human factors; problems associated with health care providers include variations in training and experience, fatigue, depression and burnout, diverse patients, unfamiliar settings, time pressures, communication errors, and failure to acknowledge the prevalence and seriousness of medical error. Second, system failures in health care delivery include poor communication, unclear lines of authority of physicians, nurses, and other care providers, complications increase as increased patient to nurse ratio, disconnected reporting systems within a hospital, inadequate systems to share information about errors and so on [Chaboyer, et al, 2013].

Even though the sources of medical errors are broadly categorized into human and system factors, the existing evidence shows "the majority of medical errors do not result from individual recklessness or the actions of a particular group. More commonly, errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them." Individual vigilance and responsibility are of course necessary [Duthie, 2006].

Medical errors affect health care systems around the world. The cost related to medical errors worldwide is estimated at USD 42 billion yearly [Al Jarallah, 2013]. Research has shown that the number of fatalities caused by medical errors in the USA every year exceeds 250,000, which makes them the third largest cause of death [Aljadhey, 2013]. In low- and middle-income countries, however, every year in hospitals 134 million adverse events take place and 2.6 million results in death, analyses of European data—mainly from Denmark, France, Spain found that medical errors and adverse events related to health care occur in 8–12% of hospitalizations. An OECD report concluded that 15% of hospital operating costs may be attributed to the treatment of adverse events [Halligan, 2011]. Actions aimed at limiting causes of adverse events occurring during hospitalization may improve patients' health outcomes and lead to financial savings for healthcare organizations and national health systems.

A report of the World Health Organization (WHO) regional director stated, "In the African Region, most countries lack national policies on safe health-care practices. Inappropriate funding and unavailability of critical support systems including strategies, guidelines, tools and patient safety standards remain major concerns in the region." Furthermore, the report implied that understanding of the problems associated with patient safety is hampered by inadequate data [Ministry of Health, 2018].

A hospital or healthcare center culture that fosters and guarantees patient safety is essential for the efficient provision of healthcare services to patients. However, there are considerable patient health and safety concerns in hospitals globally [Allen, 2009], leading to patient fatalities, extended hospital stays, irreparable disability, and substantial financial burdens. Similar to other regions globally, hospitals in the Kingdom of Saudi Arabia (KSA) have been linked to worse patient health and healthcare outcomes [Almutairi, 2013].

The magnitude and specifics of hospital mistake rates linked to adverse patient events in Saudi Arabia are not readily available. It is reported that around 40,000 medical error complaints are submitted each year in Saudi Arabia, with 3,455 medical malpractice cases directed to medical legal committees. In a study examining 642 adverse events in Saudi hospitals [Profit, 2012], 20.4% of errors were linked to operating rooms, while 18.1% were connected to emergency rooms. Studies have indicated elevated incidences of prescription mistakes in hospitals across Saudi Arabia. An examination of the mistake rates at 78 hospitals in Saudi Arabia reveals that prescription errors in inpatient units range from 13 to 56 per 100 pharmaceutical orders. Furthermore, hardly 30% of hospitals have a drug safety committee, and only 9% had a designated medication safety officer [Almutairi, 2013].

Significant elements that are likely to influence mistake rates and the quality of patient care outcomes include the safety attitudes of healthcare workers and a hospital's safety atmosphere. Recent study has examined the safety attitudes of health professionals in Saudi Arabian hospitals. A research conducted by Almutairi et al. (2013) examined the perspectives of 319 nurses regarding the safety atmosphere in a

prominent Saudi hospital. The data indicated that almost 50% of nurses evaluated the safety atmosphere as risky, particularly among those with a Western background. Comparable adverse results were documented in two recent studies on nurses' attitudes. Ranked highest among 649 nurses employed in Saudi Ministry of Health (MOH) hospitals [Ministry of Health, 2018], and second among nurses in the intensive care units (ICUs) of six Saudi hospitals. In a separate research [Alzahrani, 2015], medical doctors and nurses employed across several therapeutic domains in three Saudi Armed Forces hospitals conveyed their perceptions of safety. The findings indicated that fewer than half of the nurses and physicians had good attitudes towards patient safety, particularly on stress recognition and perceptions of management. Furthermore, favorable views towards patient safety were often diminished among nurses and physicians employed in emergency rooms.

Notwithstanding these findings, significant gaps persist in the understanding of safety attitudes among healthcare personnel in Saudi institutions. As of yet, no investigations have been published about safety attitudes in the emergency departments of MOH hospitals in Saudi Arabia; this topic warrants clarification due to the inherent risks associated with emergency departments [Burström, et al, 2014]. There have been few examinations of safety attitudes in hospital environments characterized by a diverse array of cultural origins among medical workers, and how these attitudes correlate with mistake rates [Hofstede, et al, 2011].

Therefore, healthcare centers and hospitals in Saudi Arabia are no exception to this case of the problem. There is little evidence about patient safety culture among physicians', nurses, pharmacists or epidemiologists in healthcare settings. But there is some evidence showing that some medical errors related to patient safety are traditionally treated through blame, shaming, and punishment. Furthermore, the majority of these mistakes remain undetected or concealed. Consequently, the healthcare personnel are unable to derive lessons from the errors committed in medical facilities. Furthermore, there is a paucity of research studies comparing the safety attitudes of nurses and physicians at the Ministry of Health healthcare institutions or hospitals in Saudi Arabia. This problem warrants investigation due to prior studies indicating divergent safety attitudes between nurses and physicians [Thomas, et al, 2013]. This research seeks to assess the opinions of doctors, nurses, pharmacists, and epidemiologists toward patient safety in healthcare facilities.

2. Study Object

This study aims to evaluate physicians', nursing, pharmacists' and epidemiologists' attitudes towards patient safety at health care centers.

3. Study Design

The study sample, which consisted of a number of physicians, nurses, and pharmacists working in health care center departments, wrote down their demographic information, which related to the nature of their work, their gender, and their experience. Participants were requested to specify “the number of errors they reported in the past 12 months” as either “no error,” “1-5 errors,” “6-10 errors,” or “more than 10 errors.” Participants were informed that errors could encompass any event impacting patient safety, including treatment neglect, medication administration errors, deviations from physician directives, documentation inaccuracies, falls, failure to change dressings, or omissions in required interventions.

4. Safety Attitudes Survey

Emergency department physicians and nurses were requested to complete an English version of the SAQ, which included demographic information. The English language is widely utilized in Saudi hospitals and has been employed in analogous research within Saudi Arabia [Alayed, 2014]. Participants supplied demographic data encompassing their gender, years of experience in their field, and their nationality as either Saudi or non-Saudi. Participants were requested to specify the number of mistakes recorded in the past 12 months as either “No Errors,” “1–5 Errors,” “6–10 Errors,” or “More than 10 Errors.” Participants were informed that errors may encompass any patient accident or injury, omitted treatment, medication errors, inaccuracies in the transmission of physician orders, documentation errors, falls, failure to change

dressings, missed treatments, or omissions of necessary interventions. Safety attitudes were quantified using the Safety Attitudes Questionnaire (SAQ) created by Sexton and associates; the SAQ has 36 items that assess six safety aspects, aligning with Vincent's conceptual framework [The Health Foundation, 2011].

The dimensions and sample items encompass teamwork climate (e.g., "The physicians and nurses here collaborate effectively"), safety climate (e.g., "I would feel entirely secure receiving treatment here"), job satisfaction (e.g., "This is an excellent workplace"), working conditions (e.g., "Our staffing levels adequately meet patient demands"), stress recognition (e.g., "Excessive workload negatively impacts my performance"), and perceptions of management (e.g., "Management endorses my daily endeavors"). Items concerning management perceptions were analyzed in relation to unit management and hospital management. Each question was evaluated using a 5-point Likert scale, with 1 denoting "Strongly Disagree" and 5 indicating "Strongly Agree". The SAQ has robust psychometric features, showcasing exceptional reliability and validity for concept and discriminant validity [Creswell, 2012]. Furthermore, the SAQ has been demonstrated to be a reliable assessment of safety attitudes across several cultural settings, including the USA, Saudi Arabia, Egypt, and Palestine. [Ausserhofer, et al, 2012].

5. Data analysis

To facilitate interpretation and in accordance with prior research [Azimi, et al, 2012], answer scores were converted to a 100-point scale utilizing the following equation: (Mean di-mention score – 1) × 25 = the mean score represented as a percentage, with scores of 75 and above indicating a favorable attitude toward that sub-scale category. The dependability of each dimension was assessed using Cronbach's alpha statistic. Independent t-tests were utilized to compare the mean dimension scores of safety attitudes among the professional groups of physicians, nurses, and pharmacists.

. **Results** 6

Table 1 displays the demographic features of the survey participants. A total of 120 people completed the survey, with a greater proportion employed at the first hospital (89.9%). Additionally, there were more female respondents than male (79.1% vs 19.5%). A greater proportion of responders were of non-Saudi origin, with an increased number employed as nurses in an adult emergency room.

The backgrounds of participants also differed between doctors and nurses. A far greater percentage of nurses were of non-Saudi origin, whereas the quantity of Saudi and non-Saudi physicians was comparable. Responses indicated a significant variation in the number of years individuals had been working in their specialty, with the majority having between 3 and 10 years of experience. Ultimately, the majority of individuals indicated no errors in the past 12 months; nevertheless, 33.0% reported experiencing between 1 and 5 errors.

Reliability and Interco relations of SAQ dimension

Alpha reliabilities and intercorrelations among the seven dimensions were computed and are displayed in Table 2. The statistics indicated that the average score across all dimensions was below 75 points. A score of 75 or higher signifies a favorable disposition.

Table 1 Means, inter correlations and alpha reliabilities of the SAQ dimension s

	Mean	SD	JS	SR	PM-u	PM-h	SC	TC	WC
JS	72.52	21.54	.85						
SR	58.08	24.96	.05	.79					
PM-u	60.03	19.89	.42[b]	.13[a]	.81				

PM-h	56.93	20.51	.43[b]	.15[b]	.67[b]	.82			
SC	64.49	16.97	.62[b]	−.03	.43[b]	.47[b]	.73		
TC	66.13	18.18	.62[b]	.02	.42[b]	.41[b]	.63[b]	.74	
WC	63.18	22.31	.50[b]	−.01	.44[b]	.53[b]	.42[b]	.43[b]	.79

Alpha reliabilities are shown on the diagonal in bold type; [a] = $p < .05$, [b] =p < .01; JS denotes job satisfaction; SR, stress recognition; PM-u, perceptions of unit management; PM-h, perceptions of hospital management; SC, safety climate; TC, teamwork climate and WC, working conditions

Consequently, these findings suggested that nurses and physicians had suboptimal attitudes toward patient safety. This was particularly evident in the mean scores for stress awareness and evaluations of hospital administration, which were 58.08% and 56.93%, respectively. Only job satisfaction neared the positive spectrum. Participants assessed the hospital work conditions as suboptimal, however not considerably more unfavorable than other aspects. The examination indicated that each scale exhibited a high level of dependability, with no dimension deemed poorly designed. Inter-correlational data revealed the anticipated moderate connections among the dimensions, with the exception of the Stress Recognition subscale, which exhibited minimal correlation with the other dimensions.

Table 2 Mean SAQ subscale score as a function of profession of nationality

Physicians			Nurses		t	p
	M	SD	M	SD		
Teamwork Climate	69.84	20.76	64.69	16.91	2.85	.01
Safety Climate	62.28	20.97	65.35	15.12	1.80	.07
Job satisfaction	71.67	23.42	72.88	20.83	0.56	.57
Stress recognition	60.61	26.54	57.12	24.33	1.40	.16
Unit Management	62.62	19.21	59.00	20.11	1.82	.07
Hospital Management	57.61	20.73	56.64	20.46	0.46	.64
Work conditions	59.09	25.88	64.72	20.62	2.53	.01

Table 3 Mean SAQ subscale score as a function

Saudi			Non-Saudi		t	p
	M	SD	M	SD		
Teamwork Climate	67.64	19.15	65.34	17.70	1.31	.19
Safety Climate	64.24	17.62	64.68	16.58	0.27	.79
Job satisfaction	74.14	21.03	71.76	21.73	1.15	.25
Stress recognition	57.42	26.56	58.35	24.36	0.39	.70
Unit Management	63.79	19.90	58.28	19.80	2.89	.01
Hospital Management	57.56	21.51	56.92	20.07	0.32	.75
Work conditions	64.98	22.66	62.31	22.12	1.25	.21

Between group comparisons

An analysis was performed to compare the mean SAQ dimension scores between doctors and nurses, with the pertinent means displayed in Table 2. Independent t-tests were used to assess any significant differences in the mean SAQ dimensions based on participants' occupations. The study indicated that nurses provided considerably lower assessments of the collaboration atmosphere, $t(497) = 2.85$, $p < .01$, while physicians reported significantly lower evaluations of the hospital work circumstances, $t(497) = 2.53$, $p < .01$. The data, while nearing statistical significance, indicated a tendency for physicians to assess the safety atmosphere component less favorably than nurses, and to evaluate unit administration more highly than nurses.

Mean comparisons were performed to evaluate safety attitudes between Saudi and non-Saudi nurses and physicians collectively. The findings from independent t-tests presented in Table 3 indicated that non-Saudi nurses and physicians provided comparable evaluations of their hospital on the SAQ dimensions; nevertheless, non-Saudis often assigned lower ratings to most SAQ aspects than Saudis.

Comparisons of mean SAQ dimensions among groups were conducted based on the hospital employment locations of nurses and physicians. Medical professionals from the second hospital assessed their job satisfaction and working circumstances as markedly inferior compared to those from the first hospital site, $t(497) = 2.64$, $p < .01$ and $t(497) = 5.04$, $p < .01$, respectively. The disparity in evaluations of work conditions was significant, with physicians and nurses from the second hospital providing notably low scores for their facility's working environment.

In the final analysis presented, a correlational analysis was conducted between the number of reported occurrences and each dimension of the SAQ alongside the results. The data indicated a substantial negative association between the frequency of reported mistakes and teamwork atmosphere, job satisfaction, and working circumstances.

7. Discussion

This study aimed to examine the safety attitudes of physicians and nurses working in the emergency departments of two Ministry of Health hospitals in Saudi Arabia. A substantial cohort of participants ($n = 503$) undertook the SAQ to assess their safety attitudes and the frequency of medical mistakes they had witnessed in the preceding year. The data indicated both nurses and physicians possess a less than favorable perception of nurses. Collectively, these data indicate that physicians in this study prioritize safety concerns related to the physical work environment, whereas nurses concentrate on safety issues pertaining to the human resource aspects of the hospital.

In this study, participants disclosed the frequency of medical errors they reported in the last year, with 39.6% reporting they had reported at least one error. Furthermore, correlational analysis revealed a substantial negative correlation between the frequency of reported mistakes and collaborative atmosphere, job satisfaction, and working circumstances. The presumed correlation between safety attitudes and hospital mistake rates has not been definitively established in the research literature [Steyrer, et al, 2013], Hospital mistake rates are perceived by staff to be influenced by extended work hours, elevated patient volumes, inadequate communication, and insufficient management support [Steyrer, et al, 2013]. The study's findings suggest that more favorable safety attitudes correlate with a reduced number of reported mistakes.

The findings significantly enhance the literature by being among the initial research to document safety attitudes in emergency departments of MOH hospitals in Saudi Arabia, revealing that the safety attitudes of physicians and nurses are predominantly negative. The results indicated that physicians and nurses in emergency departments possess distinct safety attitudes, potentially attributable to their varying levels of concern for safety concerns related to the work environment

and human resources, respectively. Disparities in the safety attitudes of Saudi and non-Saudi medical personnel have been documented in the literature [Algahtani, 2015], This may indicate variations in cross-cultural values. The data corroborate the hypothesis that more favorable safety attitudes correlate with a reduced incidence of reported mistakes in hospital emergency departments.

The observation that physicians and nurses in Saudi emergency departments exhibit suboptimal safety attitudes indicates that initiatives aimed at enhancing patient safety should prioritize the improvement of hospital safety culture. Research indicates that safety attitudes may be enhanced by safety training interventions and other strategies that emphasize the significance of patient safety culture in hospitals [Latif, 2015]. Direct staff training and executive walkarounds aimed at enhancing safety and detecting hazards and risks have been demonstrated to positively impact safety attitudes. [Thomas, et al, 2015]. This latter finding appears to link to the findings of this study and other research [Timmel, et al, 2012] wherein lack of management support has been associated with lower safety attitudes. Whereas providing resources for safety training and management support would be a challenge for smaller hospitals, such interventions are likely to improve patient outcomes and reduce hospital error rates.

Apart from the general restrictions of cross-sectional survey designs, the findings of this study are subject to several methodological limitations. Due to the sensitive nature of reporting errors, participants were only asked to provide an indication of the number of medical errors they had reported in the last year limiting generalizations about the impact of safety attitudes on error rates. The low number of reported errors in this study compared to other studies [Aljadhey, 2013], should be approached with caution, since they may indicate participants' reluctance to report errors rather than genuinely low error rates. While obtaining accurate data on error rates may be difficult, forthcoming study examining the correlation between safety attitudes and error rates might be enhanced by employing established metrics about the quantity, classification, and severity of hospital errors. A further restriction pertains to generalizability, as the findings are derived from self-reported questionnaires (in English) and the study was done in just a limited number of institutions in Saudi Arabia. Nonetheless, as previously noted, the English language is widely utilized in Saudi hospitals and has been employed in analogous research within Saudi Arabia. Notwithstanding these constraints, the study engaged a substantial cohort of physicians and nurses and utilized a rigorously established and dependable instrument to assess safety attitudes.

8. Conclusion

This study enhances understanding of safety attitudes within the emergency departments of Saudi hospitals in several ways. The results indicate that the safety attitudes of physicians and nurses in Saudi hospital emergency departments are suboptimal and associated with the frequency of reported mistakes. The findings indicate that nurses and physicians in Saudi hospitals exhibit significantly worse safety attitudes compared to their counterparts in other hospital jurisdictions [22] and highlight the significance of cross-cultural value variations on the efficacy of hospital safety management. Furthermore, the professional and national backgrounds of physicians and nurses seem to vary influence their safety attitudes and may similarly indicate cross-cultural variations in values. The findings indicate that future research in the Saudi context should concentrate on elucidating the correlation between safety attitudes and hospital error rates, further examining the influence of hospital staff's professional and cultural backgrounds on safety attitudes, and evaluating the effects of training interventions and management support on enhancing safety attitudes and performance in Saudi hospitals, thereby contributing to patient welfare

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