Attitude of Academic Ambulatory Nurses toward Patient Safety Culture in Saudi Arabia

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Abstract: Patient safety issues in Saudi Arabia have received increasing attention. Pressures to improve patient safety within academic healthcare settings are gaining momentum daily. Health care organization providers and policy makers continually strive to promote patient safety culture. The purpose of this study was to examine the nurses' attitude toward patient safety culture in academic ambulatory healthcare settings in Saudi Arabia. Methods: A cross-sectional correlational descriptive design, using the Safety Attitude Questionnaire Ambulatory version (SAQ-A), was carried out in year 2010. The survey was distributed to four ambulatory academic departments, which included medical, surgical, obstetrics/gynecological, and pediatric in Riyadh. All 250 available (not on vacation or deployed out of the area) ambulatory care staff nurses and nurse managers were recruited yielding 221 responses with a response rate of 88%. Results: The highest positive attitudes were toward job satisfaction and the work experience. Working conditions and the quality of the work environment and its logistical support received the second highest positive attitudes. However, the quality of collaboration between personnel and the proactive organizational commitment to safety had the lowest positive attitudes among nurses. Strong significant relationship was indicated between job satisfaction among nurses and work conditions. Statistically significant differences in mean scores were observed for registered nurse toward stress recognition and acknowledgement of the effects of stress on patient safety than nurse mangers. Recommendations: Enhancing the quality of collaboration between personnel and the proactive organizational commitment to safety may promote safety culture in academic care settings. Assessment of workplace safety culture is the first step in identifying barriers that nurses face to provide safe patient care. Improving safety culture attitudes in academic settings can take a considerable amount of effort and resources.
[Nazik M.A. Zakari. Attitude of Academic Ambulatory Nurses toward Patient Safety Culture in Saudi Arabia. Life Science Journal. 2011;8(3):230-237] (ISSN:1097-8135). http://www.lifesciencesite.com.

Keywords: patient safety culture, nursing, academic ambulatory, Saudi Arabia, attitude, healthcare organization

1. Introduction

Patient safety issues in Saudi Arabia have received increasing attention. Pressures to improve patient safety culture within academic healthcare settings are gaining momentum daily. Many safety-oriented organizations develop and foster a patient safety culture that is defined as the set of shared values, attitudes, perceptions, beliefs and behaviors that support safe practices among individuals in healthcare organizations **(World Alliance for Patient Safety, 2008)**. Safety climate, teamwork climate, working conditions and acknowledged mutual dependency are some components of a patient safety culture **(Pronovost & Sexton, 2005)**.

Academic healthcare organizations have grown increasingly complex with many component parts that are expected to optimize patient safety. In addition, they provide the most advanced clinical education, significant amounts of research, and substantial innovations in both technology and delivery systems. Moreover, a quality multidisciplinary endeavor emerges essentially through the process of quality improvement **(Hall *et al*., 2006)**. The care is often delivered in a fast-moving environment, involving a multitude of technologies and many individual decisions by healthcare providers. Such circumstances provide fertile ground for erroneous events that may lead to serious patient injuries and sometimes death. Health experts believe organization safety culture is a fundamental factor that influences patient safety **(Nieva & Sorra, 2003)**.

Thorough research and improvement efforts have primarily focused on inpatient care, while substantial patient safety risks exist in ambulatory care. Improving patient safety in the outpatient setting poses unique challenges for healthcare leaders. Even though ambulatory care may be less technologically complex than inpatient care it is often more complex logistically **(Schauberger & Larson, 2006).** Like all healthcare institutions, academic healthcare have been challenged by considerable data indicating large numbers of medical errors and quality defects in patient care **(Aspden *et al*., 2007)**. In addition, The World Health Organization estimated an average of 10% of all inpatient visits result in some form of unintended harm done, and suggested that developing countries account for

around 77% of all reported cases of counterfeit and substandard drugs **(World Alliance for Patient Safety, 2008).** Most care is provided in ambulatory care settings rather than acute care inpatient hospital settings. Recent research finds that over 77% of medical procedures are now performed in ambulatory care settings **(Day & Smith, 2007).**

In addition the ambulatory care setting present some challenges to patient safety. Factors as waiting and delays, poor communication, environmental issues, parking, security, service quality deficiencies, and inadequate staffing was associated with unsafe care **(Weingart *et al*., 2007)**. Furthermore, several studies examined diagnostic errors in the ambulatory care setting which were due to multiple process breakdowns, including failure to order an appropriate diagnostic test and inadequate follow-up planning **(Wachter, 2006; Woods *et al*., 2007)**.

Few studies regarding patient safety culture were conducted in Saudi Arabia. Nevertheless, socioeconomic and organizational/system factors affecting patient safety and quality perceptions were examined from nurses in five Riyadh hospitals in Saudi Arabia. The results revealed that system factors significantly affect patient safety improvements, including functional feedback, suggestions, and error reporting **(Mwachofi *et al*., 2011)**. **Al-Ahmadi (2009)** compared between Riyadh's public and private hospitals in Saudi Arabia to explore the perceptions of health care providers on patient safety and error reporting using Hospital Survey on Patient Safety Culture (HSPSC). The findings presented that safety culture dimension of organizational learning received the highest positive response whereas the non-punitive response to error received the lowest positive response. All types of mistakes were reported more frequently in private hospitals than in public hospitals. Teamwork across units, supervisor/managers expectations and actions promoting patients safety are factors that influence event reporting. The study concluded that staffing and non-punitive response to error need improvement in both hospital types. The Hospital Survey on Patient Safety Culture questionnaire was used to assess patient safety culture in Saudi Arabian hospitals. Overall Patient Safety perception was rated as excellent or very good by 60% of the respondents, acceptable by 33% and failing or poor by 7%. Under reporting of events, non-punitive response to error, staffing, teamwork across hospital units needed improvement for most hospitals **(Al Ahmadi, 2010).**

In most healthcare systems, academic healthcare institutes with their multiple mandates of care provision, teaching, training and research add to the complexity of this environment that becomes potentially more vulnerable to errors and adverse events **(Day & Smith, 2007; Schnall *et al*., 2008)**. Moreover, a study was conducted to evaluate the perception of nursing staff on the quality of patient care pre and post accreditation process in the multicultural and multi-language academic health care organization. The results indicated that despite all the barriers created by the multicultural and multi-language, the accreditation process has generated a positive impact on the quality of patient care and patient safety as perceived by nursing staff **(Al Awa *et al*., 2011)**. However, promoting safety culture among nurses present some challenges. A study compared attitudes toward patient safety among health providers of outpatient care with a modified version of the safety attitudes questionnaire (SAQ) and adapted it for use in this group of providers. The results revealed that physicians had the least favorable attitudes about perceptions of management, while managers had the most favorable attitudes. Nurses had the most positive stress recognition scores. All providers had similar attitudes toward teamwork climate, safety climate, job satisfaction, and working condition. They concluded that attitudes are associated with medical error and may differ among health providers **(Modak *et al*., 2007)**. According to **Holden *et al*. (2009)**, the technicians scored less on the stress recognition subscale than other health providers did. The youngest health care providers scored less on teamwork climate, safety climate, and perception of management, job satisfaction than elders in primary care did.

Nursing work environment has been characterized by serious threats to patient safety. These threats are related to organizational management practices, workforce deployment practices, and organizational culture **(Page, 2004)**. A study revealed that nurse managers reported significantly more positive safety culture perceptions compared to staff nurses. Additionally, staff nurses employed in government facilities had significantly less positive safety culture perceptions **(Wagner *et al*., 2009)**. The results of a comparison study between teaching and community hospitals showed that the mean scores for work quality, job satisfaction, nursing leadership, quality of care, and job stress were higher for nurses in teaching hospitals than for nurses in community hospitals. Nurses in teaching hospitals reported higher perceptions of the quality of the work and work environment than in community hospitals **(Hall *et al*., 2006)**. The greatest possible gains in patient safety result from management of information, communication, and coordination of patient care **(Hammons *et al*., 2003).**

While there has been a clear rise in the level of awareness of the issue of patient safety. Wide-

scale patient safety activities in Saudi Arabia have been initiated at many hospitals, but little is known about the safety culture at these hospitals. The academic setting in Saudi Arabia has been developing a range of policies and procedures to promote and improve patient safety culture. In addition, the patient safety movement was launched to establish the patient safety concept and to raise awareness among all health staff working in the academic setting. Such movements require ensuring and promoting patient safety culture **(College of Medicine, 2010)**.

Purpose of the study

Nurses' attitude toward ambulatory patient safety culture in academic settings in Saudi Arabia has not been extensively examined. This study was designed to examine nursing attitudes toward patient safety culture in an academic ambulatory healthcare organization. The study addressed the following research questions:

1. What are the nurses' attitudes toward patient safety culture in an academic ambulatory healthcare organization?

2. What is the relationship among the subscales of patient safety culture in an academic ambulatory healthcare organization?

3. Is there any difference between patient safety culture subscales and some demographic data?

2. Material and Methods
Design and Sampling

This was a descriptive cross-sectional correlational study. The current study was conducted in 800-bed academic facility with a unique multicultural, multi-language environment. It provides general and subspecialty medical services. In 2008, the total patients who sought ambulatory health care services in this academic facility were 664932 patients **(Ministry of Health, 2009)**. This academic facility provides primary and secondary care services for its patients. It also provides tertiary care services on referral bases. It contains a special outpatient building with eight departments. Four ambulatory departments were selected randomly. These four ambulatory departments are medical, surgical, Obstetrics and Gynecology, and pediatric. All 250 available (not on vacation or deployed out of the area) ambulatory care staff nurses and nurse managers were recruited yielding 221 responses with response rate of 88%.

Instrument

The full version of the Safety Attitude Questionnaire Ambulatory version (SAQ-A) is 62 items, of which only 30 were scaled **(Nieva & Sorra,**

2003). The SAQ-A has been successfully used in inpatient and ambulatory clinics **(Sexton *et al*., 2006; Modak *et al*., 2007)**. It was developed to assess the attitude of health providers in an ambulatory setting. Furthermore, SAQ-A has been demonstrated to have good psychometric properties **(Modak *et al*. , 2007)**. The questionnaire was comprised of seven subscales. Stress Recognition (SR) is four items that acknowledges how the performance is influenced by stressors. Job Satisfaction (JS) is five items, which is related to positivity about the work experience. Perception of Management (PM) is four items related to approval of managerial action. Working Conditions (WC) is four items that perceives quality of the work environment and logistical support such as staffing, training, etc. Safety Climate (SC) is seven items related to perceptions of a strong and proactive organizational commitment to safety. Teamwork Climate (TC) is six items that perceives quality of collaboration between personnel. In the current study, scale reliabilities of the six safety attitudes were assessed using Cronbach's alpha. For each subscale, the reliability was SR (0.85), JS (0.80), PM (0.76), WC (0.74), SC (0.69), and TC (0.67). The questionnaire used a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = agree strongly). Negative statements were reversed so that the higher the score, the more positive the attitudes. Extra items were added to identify respondents' demographic information such as age, gender, management role, and working experience in the outpatient areas.

Procedures

The questionnaire was distributed through the nurse manager as the point of contact at each of the four outpatient departments over two-month period. All questionnaires included a letter that explained the purpose of the study and explicitly stated that the survey was entirely voluntary. The investigator passed through each department to explain the research, answer questions, and collect the completed surveys in order to reduce the inconvenience to the clinic point of contact.

Statistical Analysis

The Statistical Package for Social Sciences software (SPSS 17.01 for Windows; SPSS, Chicago, IL, USA) was used for data analysis. Cronbach's alpha was calculated and determined the reliability of the subscales of the Safety Attitude Questionnaire Ambulatory version (SAQ-A). Descriptive statistics were computed to describe the participants' characteristics. The correlation coefficients were calculated to indicate the strength and direction of the relationships between the variables. To calculate

safety attitudes for each of the six safety dimensions (stress recognition, job satisfaction, perception of management, working conditions, safety climate, and teamwork climate), converting results from categorical to continuous variables as follows: strongly disagree = 0; disagree = 25; neutral = 50; agree = 75; and strongly agree = 100 was performed. Some items were reverse scored so that a higher score always represented a more positive attitude. For each respondent, a mean score of ≥75 for the items in a particular dimension indicated a positive safety attitude for that dimension.

Ethical consideration

The study's protocol was approved by the deanship of research at King Saud University and ethical approval was obtained from the academic health organization administrator. Permission was obtained to conduct the study in selected departments. Throughout the study, protection of human rights was assured and adherence to ethical principles was secured. Thus, the researcher ensured that each individual's autonomy was supported. Participation was voluntary, and there was no penalty for withdrawal from or termination of the study. In addition, the research methodologies were non-invasive, and there were minimal or no anticipated risks to participants. A written consent form was obtained from all participants. Total confidentiality of information was also assured by de-identified all answers and data were coded. No written or computerized records were linked to the collected data with consent forms or the participants' identifying information.

3. Results

For the present study, the mean age of the total sample (n=221) was 38.5 ± 8.9 years and 84% of the nurses were married. As expected, the majority of nurses are international expatriates (98.3%). The most numerically predominant cultures were the Filipino (48%), the Indian (39%), and the Middle East (11.3%). The dominant gender in nursing field as usual was female (96.7%). In the ambulatory setting, around 92% are staff nurses and the rest work as nurse mangers.

Table 1, show percentage of nurses with positive safety attitudes and mean scale scores. Nurses in academic health organization had the highest percent (88%) of positive attitudes toward their job and their work experience compared to their teamwork climate that reflected the quality of collaboration between personnel had the lowest positive attitudes (6%). Although the second highest positive attitudes present (77%) is working conditions and the quality of the work environment and logistical support, only (9%) they see how strong and proactive organizational commitment to safety is. However, 29 percent of nurses in the academic health organization acknowledged how stressors influence their performance and only (20%) had positive attitudes toward perception of management and items related to approval of managerial action.

Table 1. **Percentage of nurses with positive safety attitudes and mean scale scores**

% and mean scores	Stress recognition	Job satisfaction	Perception of management	Working conditions	Safety climate	Teamwork climate
% with positive attitude*	29	88	20	77	9	6
Mean score (SD)	60 (11.9±3.7)	84 (21.6±2.5)	63 (12.7±2.1)	77 (15.4 ±1.9)	59 (20.5±4.5)	65 (19.5±2.3)

*Positive attitudes were defined as having scale scores >75, the equivalent of agree or strongly agree on the Likert scale used for the response options

Table 2. Correlation matrix between six of safety culture attitudes dimensions

	1	2	3	4	5	6
(1) Stress Recognition	__					
(2) Job satisfaction	-.032	__				
(3) Perception of Management	-.260**	.531**	__			
(4) Working Condition	.091	.660**	.321**	__		
(5) Safety Climate	.102	-.412**	-.251**	-.423**	__	
(6)Teamwork Climate	.325**	-.128	-.287**	.034	.199**	__

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2, presents correlation matrix between six of safety culture attitudes dimensions. The highest positive significant correlations existed between job satisfaction and work condition and perception of management (0.66, 0.53, *P*<0.01, respectively). Furthermore, the highest negative significant correlations (-0.423, *P*<0.01) existed between safety climate and working condition and job satisfaction (-0.41, *P*<0.01).

The current study results revealed that there were statistically significant differences in mean scores between registered nurse and nurse managers in all patient safety culture dimensions presented in Table 3. The statistically significant differences in mean scores ($P < 0.05$) for registered nurse were observed. The registered nurses were more positive attitudes toward stress recognition and acknowledgement of the effects of stress on patient safety than nurse mangers. In addition, perception of management dimension attitudes was higher among nurse mangers than registered nurses. The significant mean difference was observed for the job satisfaction dimension. The nurse mangers had more higher positive attitude than registered nurses.

Table 3. Mean difference between registered nurse and nurse manager related to patient safety culture dimension

Position	safety culture dimensions	t	df	Sig. (2-tailed)	Mean Difference
Registered nurse	Safety Climate	55.106	168	.000	20.625
	Job satisfaction	108.437	168	.000	20.873
	Perception of Management	82.866	168	.000	12.672
	Working Condition	103.724	168	.000	15.210
	Teamwork Climate	120.078	168	.000	19.441
	Stress Recognition	43.965	168	.000	11.855
Nurse manager	Safety Climate	43.125	51	.000	20.123
	Job satisfaction	57.074	51	.000	21.796
	Perception of Management	43.788	51	.000	12.854
	Working Condition	63.164	51	.000	15.988
	Teamwork Climate	79.374	51	.000	19.604
	Stress Recognition	23.131	51	.000	12.200

4. Discussion

Improvement of patient safety culture has become an important aspect by aiming for high quality and safe healthcare. Healthcare leaders should maintain an organizational culture that supports and promotes patient safety. The systems within an organization are highly influenced by its culture or are an expression of its culture **(Frankel *et al*., 2003)**. The nursing profession has prided itself on being the patient's advocate and the keeper of quality and safety. Evidence shows that nurses are key factors in providing quality of care, which leads to improve patients' outcomes **(Page, 2004)**.

The nurses who participated in the present study recognized six different cultural backgrounds. In congruence with **Al Awa *et al*. (2011)** result, this current study reflects the unique multicultural, multi-language environment. The predominant cultures were Filipino, then Indian, and then Middle Eastern. This might represent considerable effects on the findings of the study as being rooted in the society and consequently might have dominant cultural effects. The remaining cultural minorities (1.7%) represent Saudi nationals.

Examination of the attitudes of nurses toward patient safety culture at academic health organizations in Saudi Arabia found that the highest positive attitudes were toward their jobs and their work experience. This finding was supported by **Carayon *et al*. (2005)** and **Abdou and Saber (2011)** they indicated that staff nurses were more satisfied with their job. The teamwork climate which reflects the quality of collaboration between personnel had the lowest positive attitudes among nurses. This might support the evidence that the unique multicultural and multi-language environment might represent considerable effects on the concept of collaboration between personnel and attitudes toward safety climate. According to the **Al Awa *et al*. (2011)** attitude varied considerably among unique multicultural, multi-language environments and sites that help identify strengths and weaknesses and highlights the potential identified weaknesses.

Interestingly, the second highest positive attitude among nurses was working conditions while their attitude toward the academic health organization and proactive commitment to safety climate was low. However, hospital safety culture in Taiwan was assessed and the results revealed that safety climate received lower scores related to safety culture (**Lee et al., 2010**). This contrasts the findings that presented that nurses have relatively low perceptions of working conditions and high perception of safety climate. Underlying reasons for the observed dissimilarity in safety attitudes are not well understood. Safety culture attitudes are reflection of complex culture that resulting from the complex interactions among unique individuals and unique circumstances over time (**Modak et al., 2007).**

A novel finding of the present study showed that the stress recognition attitude and perception of management among nurses received lower mean scores. In addition, statistically significant differences in mean scores between registered nurses and nurse managers related to these safety culture dimensions. Recent research has identified the same results. Perceptions among pharmacists toward stress recognition showed the least (**Nordén-Hägg et al., 2010**). Unexpectedly **Modak et al. (2007)** presented that nurses had the highest stress recognition score. Higher stress recognition scores may indicate more recognition of the effects of stress on the ability of a nurse to perform optimally in delivering safe care. The prominent grounds for the noticeable dissimilarity may relate to factors such as size, location, and residency program affiliation in academic health organization.

In the current study, the highest positive significant correlations existed between job satisfaction and work condition and perception of management. Furthermore, the highest negative significant correlations existed between safety climate and working condition and job satisfaction. The perception of teamwork climate based on professional role was studied among labor and delivery staff nurses. The nurse perceived difficulties with the conflict resolution, ease in asking questions, and heeding nurse input (**Sexton et al., 2006**). These factors are associated with breakdown in communication and teamwork, which has a deleterious impact on the patient safety. Job satisfaction and work conditions among nurses displayed relatively high values across nurses.

However, results obtained from the current study indicate that the importance of the managers' role is creating an organizational climate that promotes the emotional stability of nurses. Patient safety can be improved by promoting safety culture

in academic care settings where nurses are free of negative emotions (**Judge & Bono, 2001**).

There were some notable differences in scores between the two types of nursing positions. Registered nurses show statistically significant mean differences in perception of management dimension, in contrast to the mean difference, nurse managers have higher positive attitudes toward themselves. The other statistically significant finding was that nurse mangers had the highest stress recognition scores than registered nurse. Higher stress recognition scores indicate more recognition of the effects of stress on the ability of a provider to perform optimally in delivering safe care. This is consistent with other research that reports different attitudes from leaders. While it can be helpful for leaders to have positive attitudes, it may be a problem if their attitudes reflect an unrealistic view of the practice or if their attitudes are markedly different from staff nurses (**Modak et al., 2007; Teng et al., 2009**). Moreover, the management in academic culture may be relatively non-hierarchical and democratic, by international comparison. It is also considered to be practiced with a collective orientation and reduced hierarchies. Consequently, the results of this current study may reflect a reality of better collaboration whereby good relationships are a fundamental and well-established part of the academic working life (**El-Jardali et al., 2010**).

There is a clear consensus that transforming patient safety will require a substantial change in the culture of future clinicians. The institutions that educate and train future healthcare providers have a unique opportunity to establish a culture of patient safety. Setting such a culture will require a commitment from senior leadership, along with faculty and staff with the requisite knowledge and skills in patient safety and quality improvement (**Griner, 2007; Sachdeva et al., 2007**).

Conclusion and Recommendations

Enhancing safety culture in academic care settings will facilitate improvements in patient safety. Assessment of the workplace safety culture is the first step in identifying barriers that nurses face to provide safe patient care. Improving safety culture perceptions in academic settings can take considerable effort and resources. Leaders in academic facilities can use safety culture assessments to uphold and evaluate their patients and identify where critical needs exist. Moreover, to improve safety culture, nurse leaders must include interventions aimed at breaking down barriers between managers and nursing staff. They have the ability to cause change and are therefore in a unique position to help create a safety culture in an academic

setting where safety is valued. The present study offers academic setting managers an alternative means of improving safety culture through stabilizing nurse emotions. The results provide managers with insights into the potential benefits of improving support to nurses in terms of job content and context redesign.

Saudi Arabia will continue to experience diversity in its nursing workforce for the near future. Therefore, further qualitative research is recommended to focus on to what extent attitudes and values are sources of promoting safety culture. Replication of this study should be carried out with a health team in different regions and settings. Additionally, further exploration of this area could generate useful information about multiple disciplines, including health care, service management and social psychology.

Nurse Managers play a critical role in supporting safety culture, and effective leadership has shown to be important in creating a positive safety environment. Additionally, the concept of teamwork is a key in patient safety culture and is enhanced by clear leadership expectations between nurse managers and nursing staff (**Hall** *et al.,* **2006; Wagner** *et al.,* **2009**). Facilitating teamwork between staff members and managers is imperative. Interventions designed to improve safety culture in academic settings should be focused on the concerns of multinational staff nurses and the improvement of teamwork. Nurse leaders have the ability to foster an environment in which nursing staff feel comfortable with identifying safety issues.

Limitations

The present study has limitations that must be acknowledged. Firstly, self-report questionnaires were used for data collection with research assumption of trustworthiness of the respondents. Lastly, the data are from one academic practice and may not be generalizable to other settings.

Funding

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References

Abdou, A. & Saber, K. , 2011. A Baseline Assessment of Patient Safety Culture among Nurses. World Journal of Medical Sciences*,* 6: 17-26.

AlAhmadi, H., 2010. Assessment of patient safety culture in Saudi Arabian hospitals. Qual Saf Health Care, 19: 1-5 .

AlAhmadi, H., 2009. Measuring Patient Safety Culture in Riyadh's Hospitals: A Comparison between Public and Private Hospitals. Egypt Public Health Assoc., 84:479-500

Al Awa, B., Jacquery, A., El Deek, B., El Hati, T. and Devreux, I., 2011. Comparison of Patient Safety and Quality of Care Indicators Between Pre and Post Accreditation Periods in King Abdulaziz University Hospital. Research Journal of Medical Sciences, 5:61-66.

Aspden, P., Wolcott, J., Bootman, L. and Cronenwett, R., 2007. Preventing Medication Errors: Quality Chasm Series. *National Academies Press.* Washington, DC. Retrieved January 21, 2011, from www.nap.edu

Budrevics, G. and O'Neill, C. ,2005. Changing a culture with patient safety walkarounds. Healthcare Quarterly, 8: 20–25.

Carayon, P., Alvarado, C., Hundi, A., Springman, S., Borgsdorf, A. and Hoonakker, P., 2005. An employee questionnaire for assessing patient safety in outpatients' surgery. J. Advances in Patient Safety, 4: 461-474.

College of Medicine, Patient Safety Plan, 2010. Retrieved March 10, 2011, from http://medicine.ksu.edu.sa/index.php

Day, I. & Smith, L., 2007. Integration quality and safety content into clinical teaching in acute care setting. Nursing Outlook, 55: 138-143.

El-Jardali, F., Jaafar, M., Dimass, H., Jamal, D. and Hamdan, R., 2010. The current state of patient safety culture in Lebanese hospitals: a study at baseline. International Journal for Quality in Health Care, 22: 386–395

Frankel, A., Gandhi, TK. and Bates, DW., 2003. Improving patient safety across a large integrated healthcare delivery system. International Journal of Quality Healthcare, 1: 31-40.

Griner, F., 2007. Leadership strategies of medical school deans to promote quality and safety. *Jt Comm J Qual Patient Saf.*, 33: 63-67

Hall, M., Doran, D. and Sidani, S., 2006. Teaching and Community Hospital Work Environments. Western Journal of Nursing Research, 28: 710-725

Hammons, T., Piland, F., Small, D., Hatlie, J. and Burstin, R., 2003. Ambulatory patient safety—

What we know and need to know. J Ambulatory Care Manage, 26:63–82

Holden, M., Watts, D. and Walker, P., 2009. Patient Safety Climate in Primary Care. J Patient Saf., 5:23-28.

Judge, T. and Bono, E., 2001. Relationship of core self-evaluations traits – self-esteem, generalized self-efficacy, locus of control, and emotional stability – with job satisfaction and job performance: a meta-analysis. Journal of Applied Psychology, 86: 80–92.

Lee W, Wung, H., Liao, H., et al., 2010. Hospital Safety Culture in Taiwan: A Nationwide Survey Using Chinese Version Safety Attitude Questionnaire. Health Services Research, 10**:**234.

Ministry of Health. Statistical Year Book, 2009. Retrieved April 10, 2011, from http://www.moh.gov.sa/statistics/index.html

Modak, I., Sexton, B., Lux, T., et al ., 2007. Measuring safety culture in the ambulatory setting: the safety attitudes questionnaire - ambulatory version. J Gen Intern Med., 22:1-5.

Mwachofi, A., Walston, S. and Al- Omar, B., 2011. "Factors affecting nurses' perceptions of patient safety", International Journal of Health Care Quality Assurance, 24: 274 – 283.

Nieva, F. & Sorra J., 2003. Safety Culture Assessment: A Tool for Improving Patient Safety in Healthcare Organizations. Quality and Safety in Health Care,12: 7-23.

Nordén-Hägg A., Sexton, B., Kälvemark-Sporrong, L., et al., l2010. Assessing Safety Culture in Pharmacies: The psychometric validation of the Safety Attitudes Questionnaire (SAQ) in a national sample of community pharmacies in Sweden. BMC Clinical Pharmacology, 10:8.

Page, A., 2004. Keeping patients safe: Transforming the work environment of nurses. Washington, DC: National Academies Press.

Pronovost, J. & Sexton, J., 2005. Assessing safety culture: guidelines and recommendations. Qual Saf Health Care, 14:231–3.

Sachdeva, K., Philibert, I., Leach, C., et al., 2007. Patient safety curriculum for surgical residency programs: results of a national consensus conference. Surgery, 141:427- 41.

Schauberger, W. & Larson, P., 2006. Performance improvement. Implementing patient safety practices in small ambulatory care settings. Joint Comm J Qual Patient Saf., 32: 419-25.

Schnall, R., Stone, P., Currie, L., et al., 2008. Development of a Self-Report Instrument to Measure Patient Safety Attitudes, Skills, and Knowledge. J Nurs Scholarsh., 40:391- 394.

Sexton, B., Holzmueller, G., Pronovost, P., et al., 2006. Variation in caregiver perceptions of teamwork climate in labor and delivery units. J Perinatol., 26:463-70.

Teng, C-I., Chang, S-S., Hsu, K-H. ,2009. Emotional stability of nurses: impact on patient safety. Journal of Advanced Nursing, 65: 2088–96

Vogelsmeier, A. & Scott-Cawiezell, J., 2007. A just culture: The role of nursing leadership. Journal of Nursing Care Quality, 22: 210–12.

Wachter, M., 2006. Is ambulatory patient safety just like hospital safety, only without the "stat"? Ann Intern Med., 145:547-49.

Wagner, M., Capezuti, E. and Rice, C., 2009. Nurses' Perceptions of Safety Culture in Long-Term Care Settings. J Nurs Scholarsh., 41:184–92

Walston, L., Al-Omar, B. and Al-Mutari, F., 2010. Factors affecting the climate of hospital patient safety A study of hospitals in Saudi Arabia. International Journal of Health Care Quality Assurance, 23: 35-50

Weingart, N., Price, J., Duncombe, D., et al., 2007. Patient-reported safety and quality of care in outpatient oncology. Joint Comm J Qual Patient Saf., 33: 83-94.

Woods, M., Thomas, J., Holl, L., et al., 2007. Ambulatory care adverse events and preventable adverse events leading to a hospital admission. Qual Saf Health Care, 16:127-131.

World Alliance for Patient Safety, 2008. Summary of the Evidence on Patient Safety: Implications for Research. Geneva: World Health Organization.

World Health Organization EMRO, International Patient Safety Summit. 2006. Retrieved March 10, 2011, from http://www.who.int/patientsafety/events/06/IPPS/en/index

7/28/2011