The role of organizational learning in fostering a culture of quality and safety within a healthcare setting in the Kingdom of Saudi Arabia and in Colombia

Ricardo Santa (rasanta@icesi,edu.co)
Universidad Icesi, Colombia

Silvio Borrero
Universidad Icesi, Colombia

Fabián Salazar
Escuela Militar de Aviación – EMAVI, Colombia

Daniela Gherissi
Alfaisal University, Kingdom of Saudi Arabia

Edna Pelaez
Escuela Militar de Aviación – EMAVI, Colombia

Abstract

The purpose of this study is to determine the interactions among factors such as organizational learning, feedback about error, punitive response to errors and quality of communication when fostering a culture of quality and safety in hospitals in Saudi Arabia and Colombia. A self-administered questionnaire was designed, to collect responses from 417 respondents affiliated to hospitals in Saudi Arabia and 483 respondents from Colombia. The findings from the Structural Equation Modelling process shows a strong and significant predictive relationship between Feedback about Errors and SCC for both countries. A very low and insignificant predictive relationship between Non-Punitive Response to Errors and SCC was found for the two countries.

Keywords: Organizational learning, quality safety culture, quality assurance

Introduction

Healthcare providers have a social and ethical priority to gain an understanding of the factors that drive a culture of quality and safety (Huotari et al., 2016; Richter et al., 2016; Withrow, 2006). Hospitals around the world are increasingly committed to developing Safety Culture Clarity (SCC), as it is crucial for patient and healthcare staff welfare. As a consequence, policymakers are promoting patient safety culture as a critical component of health care quality practice, and a necessary requisite for effective safety management systems (Huotari et al., 2016).

The literature indicates that there is an increase in attention to patient safety issues in Saudi Arabia (Almutairi et al., 2012) and Colombia (FITEC, 2007). Furthermore, SCC is essential for accreditation purposes as it is an important component of health care quality practice. Wagner et al. (2012) in their study emphasized that a strong patient

safety culture is fundamental for accreditation and sustainability in healthcare organizations.

The leadership at medical and managerial levels is committed to incorporate and communicate a culture of quality and safety amongst all hospital staff, to reach the communities and nation. This effort will prevent adverse events, errors, and accidents, by providing quality and safety to patients (Ulrich & Kear, 2014; Zuhal & Sonjul, 2015). This research seeks ways to evaluate the factors that contribute most to the culture of quality in patient safety in Saudi Arabian and Colombian hospitals. This study contributes to the theory of quality and safety culture by finding answers to the research question: What are the main SCC drivers in hospitals in the Kingdom of Saudi Arabia and Colombia? To this purpose, this research uses a quantitative approach.

Background

In recent years, there has been an increasing interest in accreditation programs in developing countries. In November 2000, Saudi Arabia became one of the first Gulf Cooperation Council members to implement voluntary accreditation in collaboration with the Joint Commission International, receiving the Gold Seal of Approval. In 2005, the Central Board of Accreditation for Healthcare Institutions (CBAHI) was formed based on the recommendation and approval of the Council of Health Services in Saudi Arabia. Its purpose is to ensure that all healthcare services provided across the country, are safe and free from medical error.

Since 2004, the Ministry of Social Protection in Colombia, with the collaboration of quality-ensuring agencies such as ICONTEC, has been enforcing the practices of quality and safety in the country's healthcare system. The process includes the development of policies and regulations to encourage better practices (Pinzon et. al, 2016).

Safety culture clarity (SCC)

Murphy et al. (2006) argued that in order to visualize a culture of safety, it is imperative to understand the concept of "organizational culture". Organisational culture is regarded as the set of values, guiding beliefs, or ways of thinking that are shared among staff members of an organization. Staff members often resist changing the way they do things but they also try to change the culture in which they live or work. In schools of medicine, nursing, and allied health, providers have traditionally been taught, through incident reporting procedures and behavior of other staff members, that when things go wrong they should find out, "Who did it?" The focus has been on individual failures. On the other hand, a safety culture asks, "What happened?" Safety culture looks at the system, the environment, the knowledge, the workflow, the tools, and other stressors that may have affected healthcare staff behavior. In other words, it is a subset of organizational culture that in healthcare is defined as the integration of safety thinking and practices into clinical activities (Bahrami et al., 2013).

The independent variables related to safety culture were operationalized in a Hospital Survey on Patient Safety Culture developed by the American Agency for Healthcare Research and Quality (AHRQ). Variables have been subsequently measured in several studies (Al-Ahmadi, 2009; Alahmadi, 2010; Bodur and Filiz, 2009; El-Jardali et al., 2010). Aboul-Fotouh et al. (2012) used this survey at Ain Shams University Hospital in Egypt to determine which factors improved patient safety culture. Respondents awarded organizational learning and teamwork (OLT) the highest scores, whereas non-punitive response to error was given the lowest score.

Organizational learning (OL)

The term organizational learning became popular in the 1990s and has been widely defined and discussed in the extant literature since then (Senge, 2006). The base of the concept has expanded in all three dimensions: conceptual, theoretical, and empirical (Rahman et al., 2016). Organizational learning is defined by Dodgsdon (1993) as the way firms enhance their knowledge and ability by aligning knowledge around the organizational culture as well as adapting it within the organization to increase the efficiency of the workforce. Organizational learning includes R&D, training, and formal education of employees. It also involves the means that the organization uses to disseminate information among its employees and how this information is processed and stored.

Organizations need to avoid routine behavior; although learning is difficult, its application can lead to preventing waste of time and money, and avoiding repeated confusion and mistakes during the firm's production. Learning can affect the initial arrangements established, and show requirements for a new set of skills that are needed, along with much-needed effort. Therefore, it is not surprising that many companies decide to use the strategy of borrowing ideas from textbooks or other firms' experiences so as to cut the process (Santa et al., 2013).

Feedback about error (FAE)

Encouraging health professionals to report events in a non-punitive environment is crucial for improving patient safety. Operating room errors are commonplace and have the potential to be catastrophic (Makary et al., 2006). Creating a patient safety culture in surgical units by improving communication and reporting events is therefore a priority for hospital staff but it is often difficult to achieve. Employees who do not deal directly with patients are usually more willing to report errors. Jones et al. (2008) felt that work in laboratory units is considered more organized than in other units since it is controlled by professional standards and because errors investigated in these units are done as a group and everyone in the group shares responsibility. In contrast, when a health professional makes a mistake, responsibility is an individual issue.

El-Jardali et al. (2011) conducted a patient safety study that revealed two interesting facts: (i) experience and tenure has an impact on total errors reported and as people's years within the organization increase they report more events; and (ii) that staff-patient safety perception decreases as their experience in the hospital increases. According to El-Jardali et al. (2011), patient safety perception is usually defined as the extent to which people feel that procedures and systems are good at preventing errors and problems. As people become more experienced, they become more aware and more critical of the safety practices in their institutions.

Consequently, more experienced staff are more likely to demand patient safety practices, systems and procedures that effectively limit errors and problems. Bodur and Filiz (2009) found that patient safety culture decreases as seniority increases because staff elect not to report the error to avoid additional reporting required when errors are detected. Another plausible explanation is that senior staff, influenced by a culture that does not enforce patient safety, become, in time, less strict in ensuring appropriate safety practices.

Non-punitive response to errors (NPRE)

An open, non-blame, non-punitive reporting environment would support healthcare staff in openly discussing and reporting errors (Alahmadi, 2010). A non-punitive culture suggests that staff in the hospital or healthcare setting should take it upon themselves,

without fear of punishment, as first priority and responsibility, to have voluntary reporting systems for medical incidence and clinical errors, with a non-punitive response to errors, with the objective to not only implement safety culture but also to improve patient safety. According to Schyve (2004), having a safety culture does not mean there is no role for punishment. Punishment is indicated for wilful misconduct, reckless behavior, and unjustified, deliberate violation of rules but not for human error. A blame-free environment is an important driver of high quality and safe care, in which perceptions of punitive behavior can be mitigated with programs such as safety briefings about potential safety problems, and informal conversations conducted with frontline staff about safety issues to positively affect the care environment.

Quality of communication

An adequate safety culture in a healthcare organization is characterized by communications based on mutual trust, shared perceptions and confidence in preventive measures. Consequently, most accidents could be avoided by implementing communication channels based on quality principles (AHRQ, 2007). An excellent communication between personnel at different organizational levels is likely to yield successful outcomes in healthcare (Nembhard et al., 2015; Richter et al., 2016).

Physician-patient communication also has a positive influence on healthcare service quality. Physician-patient relationship influences patient satisfaction, a crucial indicator for measuring healthcare quality (Lin et al., 2010; Mercer et al., 2008; Moret et al., 2008). Majeed Alhashem et al. (2011) identified patient satisfaction determinants in Kuwaiti primary clinics. Based on the responses from patients, reported relationships, and formal interfaces between nursing and medical staff, they found that the time allotted for communication between physician and patient was short and that the command chain was lengthy and cumbersome.

There is, therefore, an imperative to implement immediate and effective solutions for patient safety and welfare problems. There is no need for a traditional command chain that requires a nurse to contact two or more people before an appropriate action can be taken. Unfortunately, questions about care or urgent expert interventions are not addressed properly and at the right time owing to ineffective communication processes (Murphy et al., 2006).

Hypothesis and model

Given the existing literature on safety culture clarity, we propose that there is a need to construct a comprehensive theoretical framework that incorporates the relationship-facilitating aspects of a culture of learning, quality and safety context. Independent variables used in this study include Organizational Learning (OL), Feedback about Errors (FAE), Non-Punitive Response to Errors (NPRE), and Quality of Communication (QC), and the predictive relationship between them and the dependent variable SCC. Additionally, the study identified the mediating role of organizational learning in achieving SCC. Consequently, the hypotheses tested in this study are:

H1: There is a predictive relationship between QC and SCC.
H2: There is a predictive relationship between FAE and SCC.
H3: There is a predictive relationship between NPRE and SCC.
H4: There is a predictive relationship between QC and OL.
H5: There is a predictive relationship between FAE and OL.
H6: There is a predictive relationship between NPRE and OL.
H7: There is a predictive relationship between OL and SCC.

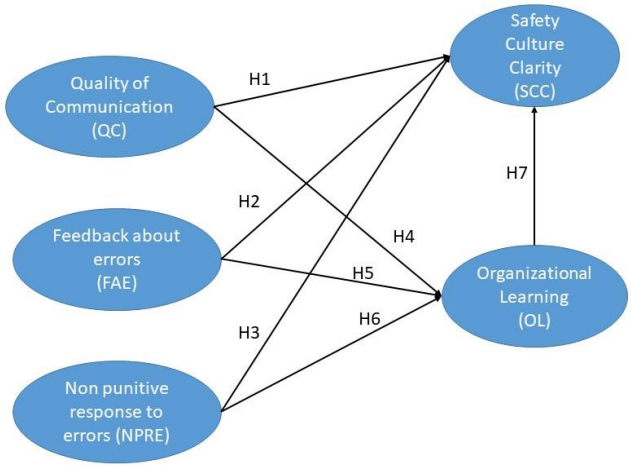

Figure 1 – Research Model with Hypotheses

Research Methods

To test the hypothesis, the survey instrument, measurement constructs, and best fit model were developed according to guidelines established by Hair et al (2010). A self-administered questionnaire was designed to collect responses from 417 respondents affiliated with Saudi Arabian hospitals and 485 with Colombian hospitals. The survey format consisted of a demographic section, followed by a conceptualized set of variables to build a model that was tested using both descriptive and inferential statistical analysis once the data was collected. A five-point Likert scale (from strongly agree to strongly disagree) was used to rate statements related to the model's operationalization. The questionnaire was based on Wagner et al. (2012) and Withrow (2006), partially adapting Churchill Jr. (1979).

The statements' mean ratings were used to build the variables that made up the structural equation model (SEM). Each questionnaire was reviewed for completeness and several were considered unusable owing to inconsistencies and significant missing data, for both countries. The average mean values of the statements' ratings were used to build the variables that made up the structural equation model. This methodology was chosen as it fits the requirements of this research and allows the analysis of latent variables and their relationship and the required sample is met by the collected data (Nachtigall et al., 2003)

Data analysis

Confirmatory factor analysis (CFA) was used to study the relationships between observed and continuous latent variables, and to determine the measurement model's overall fit (Cooksey, 2007; Hair, J. et al., 2010). Factor loadings were estimated, items loaded on only one construct (i.e., no cross loading) and latent constructs were correlated (equivalent to oblique rotation in exploratory factor analysis). Internal consistency was assessed using Cronbach's alpha coefficient and the items-to-total correlation. Table I summarizes the constructs' coefficient values. All constructs have values greater than 0.7 of the cut-off level set for basic research (Nunally and Bernstein, 1978). Confirmatory factor analysis (CFA) was conducted to test construct validity (Table 1).

Table 1 - Baseline Comparisons

Colombia					
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.893	.867	.926	.907	.926
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
KSA					
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.852	.825	.899	.878	.898
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Results

The SEM findings are shown in the regression weights in table 2 and the structural models in figure 2, for Colombia and KSA. A low and insignificant relationship between QC and SCC (*b=0.25, p >0.05, Col and b=0.23, p >0.05, KSA*) was found. A low and insignificant relationship (*b=0.27, p >0.05)* in Colombia and a marginally supported relationship (*b=0.41, p =0.003*) in KSA was found between FAE and SCC. Additionally, a very low and insignificant relationship was found between NPRE and SCC (*b=-0.02, p >0.05, Col and b=0.05, p >0.05, KSA*). Therefore, H1, H2 and H3 were rejected for both countries, with the exception of H2 that was marginally confirmed for KSA. These results are disquieting for both countries as they indicate that when errors are found, organizations in the healthcare sector are not using communication effectively to give high quality, appropriate feedback and respond to mistakes or errors with non-punitive actions, which would promote safer procedures in the healthcare environment.

A strong and significant relationship between QC and OL for both countries (b=0.44, p <0.001, Col and b=0.31, p <0.001, KSA) was found, which supports hypothesis H4. Nembhard et al. (2015) and by Richter et al. (2016) mentioned that staff who ensure excellent communication between personnel are more likely to ensure successful handoffs in health care.

A strong and significant relationship between FAE and OL for both countries (b=0.55, p <0.001, Col and b=0.44, p <0.001, KSA) was found, which supports hypothesis H5. These results are important for both countries, indicating, as pointed out by Bodur and Filiz (2009), that staff elect not to report the error to avoid the additional reporting required when errors are detected. In the case of both countries they believe errors found should add to the learning practices of the organizations. However, the findings for H6—that there is a predictive relationship between NPRE and OL—were rejected for Colombia (b=-0.02, p >0.05) and KSA (b=0.05, p >0.05). These results indicate that although healthcare practitioners are aware of the importance of reporting errors so as to receive appropriate feedback after errors are found, they fear the punishment for inappropriate practices by more senior staff.

Finally, hypothesis H7—that there is a predictive relationship between OL and SCC—was confirmed (b=0.51, p <0.001) for Colombia, and marginally confirmed for the Kingdom of Saudi Arabia (b=0.31, p <0.05). This finding demonstrated that healthcare practitioners are aware of the importance of the learning process in their organizations.

Table 2 - Regression Weights: (Group number 1 - Default model)

Colombia						
			Estimate	S.E.	C.R.	P	Label
OL	<---	QC	.401	.066	6.107	***	
OL	<---	FAE	.585	.067	8.686	***	
OL	<---	NPRE	-.024	.044	-.550	.582	
SCC	<---	QC	.250	.122	2.049	.040	
SCC	<---	FAE	.272	.141	1.934	.053	
SCC	<---	NPRE	-.024	.070	-.338	.736	
SCC	<---	OL	.567	.171	3.306	***	
KSA							
			Estimate	S.E.	C.R.	P	Label
OL	<---	QC	.312	.050	6.253	***	
OL	<---	FAE	.443	.064	6.919	***	
OL	<---	NPRE	.047	.050	.925	.355	
SCC	<---	QC	.230	.104	2.212	.027	
SCC	<---	FAE	.412	.139	2.964	.003	
SCC	<---	NPRE	.069	.095	.722	.470	
SCC	<---	OL	.603	.220	2.739	.006	

This research demonstrated an indirect impact of Quality of Communication (QC) and Feedback About Error with Safety Culture Clarity (SCC) through the Organizational Learning construct (OL). Therefore, the hospitals surveyed in these two countries must put into practice appropriate learning so healthcare practitioners and the system can learn from errors committed during the performance of their duties.

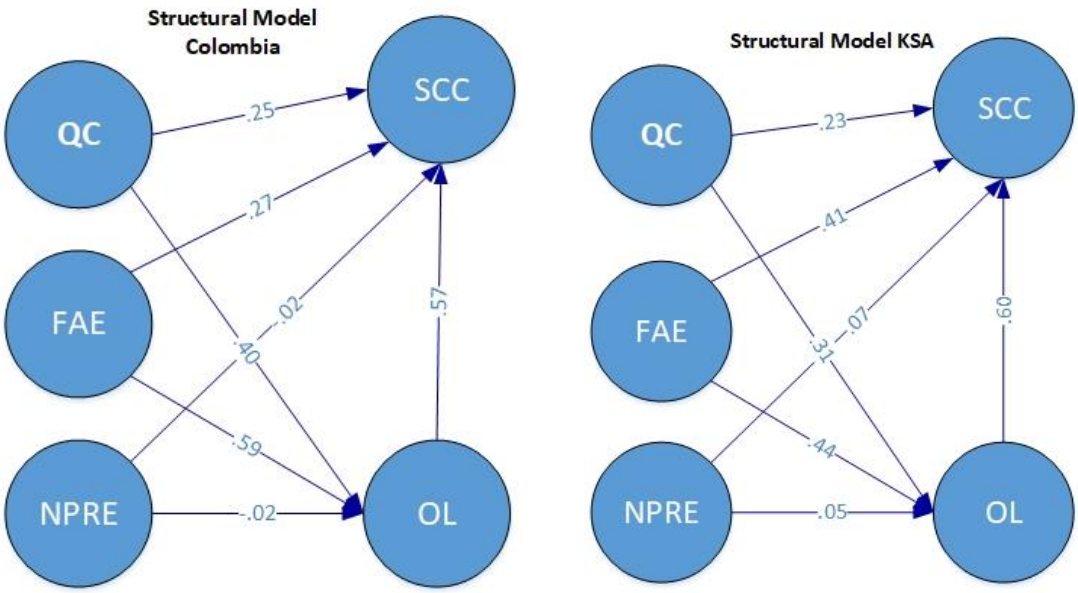

Figure 2 – Structural Model for Colombia and KSA

Discussion

It is important that both countries develop appropriate policies and procedures to address the issues identified in this research. Additionally, the two countries need to establish continuous improvement in their processes to advance their operations and consequently improve their performance, as the health of patients is affected by the issues identified in this research. Hypothesis H1, H2, H3 and H6 were rejected, which might indicate that medical staff are afraid of being blamed when a patient is harmed or when procedures are not followed correctly, with potential consequences to their work history or job stability, which is consistent with Aboul-Fotouh et al. (2012) who found that NPRE scored lower than other factors. This fact could be explained by nation-wide cultural specificities or power distance (Hofstede, 1985; Hofstede et al., 1991; Lammers and Hickson, 2013) that permeates the studied organizations. The errors could be much higher than the quantity reported as many errors might be not reported due to punitive consequences, or the belief that reporting will not result in any effective changes to the working environment (VanGeest and Cummins, 2003).

Conclusion

In answering the research question 'What are the main Safety Culture Clarity drivers in hospitals in the Kingdom of Saudi Arabia and Colombia?', the results of this study indicate that providing feedback about errors and ensuring effective communication are drivers of a culture of safety and clarity. Furthermore, establishing procedures to guarantee the learning of the organization are also essential drivers of the creation of a culture of safety and clarity in Colombia and in the Kingdom of Saudi Arabia.

The independent variables analyzed in this study are important determinants of a clear safety culture that promotes high-quality standards in healthcare organizations. For organizations in the healthcare sector to create a culture of clarity, safety, and continuous improvement, they must fashion clear communication channels and correct feedback after errors are found. The importance of quality communication coincides with other findings from studies completed in KSA and Colombia.

Medical staff have a fear of being blamed when a patient is harmed. Furthermore, staff feel concern about mistakes affecting their personal profiles, among several other consequences that may befall them. Concurrently, the findings also indicate the importance of addressing the fact that Non-punitive Response to Errors is not practiced, which is contrary to the quality practices in the healthcare sector in other countries. It is possible that this issue is more difficult to resolve in developing countries such as Saudi Arabia and Colombia than in other more developed countries owing to cultural specificities (Hofstede et al., 1991).

Further research

Future research should investigate the issues addressed in this article, exploring non-punitive approaches in different cultures and countries in healthcare environments. Additionally, it is important to identify how such behaviors contrast with cultural drivers such as organizational justice, or national leanings related to hierarchy and the power distance cultural dimension identified by Hofstede (1985), Hofstede et al. (1991) and Lammers and Hickson (2013)

References

Aboul-Fotouh, A.M., Ismail, N.A., EzElarab, H.S. and Wassif, G.O. (2012) 'Assessment of patient safety culture among health-care providers at a teaching hospital in Cairo, Egypt', *Eastern Mediterranean Health Journal*, Vol 18, No. 4, pp 372.

AHRQ (2007) *Guide to prevention quality indicators: hospital admission for ambulatory care sensitive conditions.*, AHRQ Quality Indicators, The Agency for Healthcare Research and Quality.

Al-Ahmadi, T.A. (2009) 'Measuring patient safety culture in Riyadh's hospitals: a comparison between public and private hospitals', *Journal of the Egyptian Public Health Association*, Vol 84, No. 5-6, pp 479-500.

Alahmadi, H. (2010) 'Assessment of patient safety culture in Saudi Arabian hospitals', *Quality and safety in health care*, Vol 19, No. 5, pp 1-5.

Bodur, S. and Filiz, E. (2009) 'A survey on patient safety culture in primary healthcare services in Turkey', *International Journal for Quality in Health Care*, Vol 21, No. 5, pp 348-355.

Churchill Jr., G.A. (1979) 'A paradigm for developing better measures of marketing constructs', *Journal of Marketing Research*, No., pp 64-73.

Cooksey, R. (2007) *Illustrating statistical procedures for business, behavioural & social science research*, Tilde University Press, Australia.

Dodgsdon, M. (1993) 'Organizational learning: a review of some literature', *Organization Studies*, Vol 14, , No. 3, pp 375-394.

El-Jardali, F., Jaafar, M., Dimassi, 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*, Vol 22, No. 5, pp 386-395.

El-Jardali, F., Dimassi, H., Jamal, D., Jaafar, M. and Hemadeh, N. (2011) 'Predictors and outcomes of patient safety culture in hospitals', *BMC Health Services Research*, Vol 11, No. 1, pp 1.

Hair, J., Black, W.C., Babin, B. and Anderson, R.E. (2010) *Multivariate data analysis: A global perspective* Seventh edn, Pearson, Upper Saddle River, New Jersey.

Hair, J.F., Black, W.C. and Babin, B.J. (2010) *Multivariate Data Analysis: A Global Perspective*, Pearson Education.

Hofstede, G. (1985) 'The interaction between national and organizational value systems', *Journal of management studies*, Vol 22, No. 4, pp 347-357.

Hofstede, G., Hofstede, G.J. and Minkov, M. (1991) *Cultures and organizations: Software of the mind*, vol. 2, McGraw-Hill, London.

Huotari, P., Huotari, P., Havrdová, Z. and Havrdová, Z. (2016) 'Stakeholders' roles and responsibilities regarding quality of care', *International Journal of Health Care Quality Assurance*, Vol 29, No. 8, pp 864-876.

Jones, K.J., Skinner, A., Xu, L., Sun, J. and Mueller, K. (2008) 'The A.H.R.Q. hospital survey on patient safety culture: a tool to plan and evaluate patient safety programs', *Safety Culture and Organizational Issues*, No.

Lammers, C.J. and Hickson, D. (2013) *Organizations Alike and Unlike (RLE: Organizations): International and Inter-Institutional Studies in the Sociology of Organizations*, vol. 17, Routledge.

Lin, B.Y.-J., Lin, C.-C. and Lin, Y.K. (2010) 'Patient satisfaction evaluations in different clinic care models: care stratification under a national demonstration project', *Health & Place*, Vol 16, No. 1, pp 85-92.

Majeed Alhashem, A., Alquraini, H. and Chowdhury, R.I. (2011) 'Factors influencing patient satisfaction in primary healthcare clinics in Kuwait', *International Journal of Health Care Quality Assurance*, Vol 24, No. 3, pp 249-262.

Makary, M.A., Sexton, J.B., Freischlag, J.A., Millman, E.A., Pryor, D., Holzmueller, C. and Pronovost, P.J. (2006) 'Patient safety in surgery', *Annals of Surgery*, Vol 243, No. 5, pp 628-635.

Mercer, L.M., Tanabe, P., Pang, P.S., Gisondi, M.A., Courtney, D.M., Engel, K.G., Donlan, S.M., Adams, J.G. and Makoul, G. (2008) 'Patient perspectives on communication with the medical team: Pilot study using the communication assessment tool-team (CAT-T)', *Patient Education and Counseling*, Vol 73, No. 2, pp 220-223.

Moret, L., Rochedreux, A., Chevalier, S., Lombrail, P. and Gasquet, I. (2008) 'Medical information delivered to patients: discrepancies concerning roles as perceived by physicians and nurses set against patient satisfaction', *Patient Education and Counseling*, Vol 70, No. 1, pp 94-101.

Murphy, D.M., Shannon, K. and Pugliese, G. (2006) 'Patient safety and the risk management professional: New challenges and opportunities', *Risk Management Handbook for Health Care Organizations*, Vol 2, No., pp 1-21.

Nachtigall, C., Kroehne, U., Funke, F. and Steyer, R. (2003) *(Why) Should we use SEM?—Pros and cons of Structural Equation Modelling*, vol. 8.

Nembhard, I.M., Labao, I. and Savage, S. (2015) 'Breaking the silence: Determinants of voice for quality improvement in hospitals', *Health Care Management Review*, Vol 40, No. 3, pp 225-236.

Nunally, J.C. and Bernstein, I.H. (1978) *Psychometric theory*, McGraw-Hill, New York.

Rahman, H., Rahman, W., Ali, N. and Khan, F. (2016) 'Organizational Learning Culture and Employees' Career Development: Empirical Evidence from Colleges of Malakand Division of Pakistan. ', *Journal of Managerial Sciences.*, Vol 10, No. 1, pp 15-29.

Richter, J.P., McAlearney, A.S. and Pennell, M.L. (2016) 'The influence of organizational factors on patient safety: Examining successful handoffs in health care', *Health Care Management Review*, Vol 41, No. 1, pp 32-41.

Santa, R., Hyland, P. and Ferrer, M. (2013) 'Technological innovation and operational effectiveness: their role in achieving performance improvements, , ' *Production Planning & Control: The Management of Operations Management*, Vol 25, No. 12, pp 969-979.

Senge, P.M. (2006) *The Fifth Discipline, The Art and Practice of The Learning Organisation*, Random House, Business Books, New York.

VanGeest, J.B. and Cummins, D.S. (2003) 'An Educational Needs Assessment for Improving Patient Safety: Results of a National Study of Physicians and Nurses', in NPS Foundation (ed.), *White paper report*, vol. 3.

Wagner, L.M., McDonald, S.M. and Castle, N.G. (2012) 'Relationship between nursing home safety culture and Joint Commission accreditation', *The Joint Commission Journal on Quality and Patient Safety*, Vol 38, No. 5, pp 207-215.

Withrow, S.C. (2006) 'The 8 dimensions of quality: Careful scrutiny of quality-of-care metrics and laws can assist hospitals in developing strategies for high-quality care', *Healthcare Financial Management*, Vol 60, No. 12, pp 86-92.