Healthcare Risk Management and Patient Safety in Turkish Hospital[*]

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Patient safety is an important component of risk management in hospitals. The aim of the study is to measure physician and nurse awareness about four selected patient safety indicators by authors and events reported about these relevant indicators in the hospital. The study uses standardized four patientsafety indicators like "needle sticks, cut wounds, dressing allergy, infections indicators''. Cross section study was conducted through three month period in 2011-2012 based on voluntary response to the questionnaire that intend to measure knowledge about four health indicators. Studypopulations consisted of accessible sample of 146 different specialty physicians and 108 nurses present on duty during survey period. The association between the patient safety indicators and events reported about indicators in questionswere analyzed. Meanpatient safety knowledge questionnaire scores of health staff (nurse and physician) for needle sticks, cut wounds, dressing allergy, infections indicators were 47.13(11.8), 39.04(14.5), 38.02(10.5), 39.72(9.7), respectively. Significant statistical differences were also found between the frequency of events reported according to department and patient safety indicators ($F = 8.34$; $p < 0.05$). Measuring patient safety culture via safety indicators is essential in improving patient safety. This matter is perfectly influence the financial management of the hospital.

Keywords: patient safety, risk management, hospital management, safety indicators

Introduction

Patient safety is one of the fundamental topics that have been highlighted with the philosophy "To Err is Human Building a Safer Health System", but, errors also are costly either in terms of loss of trust in the health

care system by patients or diminished satisfaction by both patients and health care professionals (Reason, 2000). For a safe environment, errors can be prevented by designing the health system at all levels to make it easier for health care professionals to do the things right if they can be careless and take responsibility for their actions. When error occurs, blaming someone else would not prevent to somebody from committing the same error again next time (Larson, 2000; Elder & Dovey, 2002).

The World Health Organization pointed out that the effective reduction of health risks could add almost 10 more years of healthy life expectancy worldwide (WHO, 2004). United State, Canada, England, France, Germany and some European countries implemented methods to assess and manage risks both in hospital administration, clinical, and community healthcare systems in recent years (NHS, 2004).

The Turkish health care delivery system is in transition period nowadays (Yildirim Kaptanoglu, 2011; Glenngård, Hjalte, Svensson, Anell, & Bankauskaite, 2005). Both patients and health staff are concerned that the health care delivered is not, essentially, the care that should be received and given without managing health risks (Ugurluoglu & Celik, 2006).

Now, Turkish hospitals have specialized risk management departments whose duties is to investigate risks, incidents, and medical claims procedures. Evaluation of risk such as surgery, obstetrics was established in 2010 in the country.With thenew transition program after 2003, Turkish public hospitals became to have higher health quality systems in order to achievebetter quality and safety outputs (such as providingpatient ID bracelets, dispensers to facilitate handhygiene) (Chakraborty, 2009; Kaya, Barsbay, & Karabulut, 2010; Kringos, Boerma, Spaan, & Pellny, 2011).

The patient safety challenges within the Turkish healthcare system transition have dramatically elevated the importance of patient safety in public hospitals (Kohn, Corrigan, & Donaldson, 1999; Mohr, Abelson, & Barach, 2002). Nowadays, hospitals have established risk management departments whose duties are to investigate risks and incidents in clinics and operating theatres. This unit are also dealing with medical claims procedures. Hospital safety matter is not only for patients and staff but also for visitors including different briefly describes categories that are the following: human safety, hospital safety, clinical safety, and patient safety. These categories are interrelated, but each has inherent risks that need to be assessed and managed.

The organizational aspects of the hospital has a important role in order to improve patient safety because each hospital have different reality. Therefore to answer a question what are the patient safety culture of health staff of Bagcilar Research and Education Hospital (BREH), an study was planned.

The aim was to evaluate the perception of BREH nursing and physicians staff on the risk management and patients safety. The accreditation process was still continuing in BREH beginning from 2011.

A survey was conducted using the five-point Likert Scale as the name of the tool was "Patient Safety Knowledge of Health Staff". This scale intends to measure the knowledge of staff about four patient safety indicators such as needle sticks, cut wounds, dressing allergy, and infections indicators. Patient safety and quality of care in these conditions is partner of the other in the health care management concept (Becher & Chassin, 2001). Without measuring hospital patient safety culture in the hospital, hospital managers, financial managers and medical directors cannot administrate hospital and make their jobs in a proper way (Firth-Cozens, 2001).

Methods

The size of the study group was determined by a formula that enabled a comparison of the predicted mean score of 63 ± 10 (Sorra et al., 2007) for positive perception of the overall patient safety knowledge in the hospital within an SD of 5 points, at a 95% confidence level and with a 0.80 power. So, according to the formula, the goal was to reach at least 63 people in each physician and nurse group.

A total of 306 questionnaires were used but only 254 completed and returned as follows: 146 physicians and 108 nurses. Study population met the survey criteria.

The response rate was 83.45% and this high percentage of response identified patient safety as an important issue in health care of the country today.

BREH is one of the larger sized hospitals in Istanbul/Turkey with a total of 498 beds capacity.

The association between the patient four safety indicators (needle sticks, cut wounds, wound dressing allergy, and infections due to contamination) and events reported about indicators in questions were analyzed.

Events report data were obtained. Statistical analysis was performed to assess whether each of the four safety indicators measures. Agreement between the measures of events was assessed based on contingency table analysis using Chi-square tests and/or Fisher's exact tests, depending on the number and the rate of cases with adverse events.

Survey Instruments

The survey instrument consisted of 4 major scales with 12 subscales that were rated on a five-point Likert Scale (ranging from 1 for strongly disagree to 5 for strongly agree). Major scales were needle sticks, cut wounds, wound dressing allergy, infections. Socio-demographics questions were included the age and years of experience.

Structural validity of each major safety dimension relationship of "Patient Safety Knowledge of Health Staff Scale" was shown with a correlation between 0.41 and 0.68. Internal consistency reliability for all items was high ($\alpha = 0.80$). The Spearman-Brown coefficient was 0.81.

The factor loading of each item was above 0.40 and the structure of the survey scale was considered appropriate. Factor loadings were between 0.42 and 0.83.

Ethical approval was obtained from BREH ethics committee together with written consents from participating physicians and nurses before proceeding with the study.

Results

The mean age of healthcare personnel was 36 ± 8.3. While 104 (40.94%) of them were working in the Department of Internal Medicine, 110 (43.30%) were working in the Department of Surgery, and 40 (15.74%) were working in the intensive care/emergency/operation room.

Of the participants, the length of time worked varied, with 59 staff (23.22%) having worked for five years or less, and 195 staff (76.77%) having professional experience of 10 years or longer.

Major Scales: Mean patient safety knowledge questionnaire scores for needle sticks, cut wounds, dressing allergy, infections indicators were 47.13(11.8); 39.04(14.5); 38.02(10.5); 39.72(9.7), respectively. There are statistically significant differences between physician and nurse knowledge questionnaire scores for patient

safety (see Table 1).

Table 1

The Results of the "Patient Safety Knowledge" Scale Mean Are Shown

	Physician	Nurse	Total scale scores	P
Needle sticks	46.11 ± 11.2	47.12 ± 10.1	47.13 ± 11.8	$t = 9.23$; * $p = 0.003$
Cut wound	38.46 ± 10.1	39.11 ± 11.3	39.04 ± 14.5	$t = 7.46$; * $p = 0.007$
Dressing allergy,	37.65 ± 9.4	37.44 ± 10.7	37.02 ± 10.5	$t = 1.53$; $p = 0.456$
Infections indicators	39.91 ± 7.6	41.12 ± 8.7	39.72 ± 9.7	$t = 8.78$; * $p = 0.003$
Total scale scores	45.81 ± 9.3	47.45 ± 10.4	46.12 ± 12.5	$t = 6.27$; * $p = 0.001$

Notes. * : Mean of 4 Scale; Source: Done by authors using SPSS.

As part of routine hospital and clinical activities at BREH, nurses, physicians report patient safety events including medical errors and "near-misses" (errors caught before they reach the patient) to a nurse that is responsible to keep the patient safety report.

Table 2

Patient Safety Indicators of Events Reported Mean and SD (During Three Months)

	Events reported	Percent
Needle sticks	12 ± 1.5	26.06
Cut wound	7 ± 0.6	15.21
Dressing allergy	8 ± 1.1	17.39
Infections indicators	19 ± 1.3	41.34
Total	46 ± 2.1	100

Note. Souce: Done by authors using SPSS.

Infections and needle sticks are the most reported disease during three months process as indicated in the Table 2. Significant statistical differences were also found between the frequency of events reported by nurses compare with physician and patient safety indicators scale points ($t = 5.96$; $p < 0.05$).
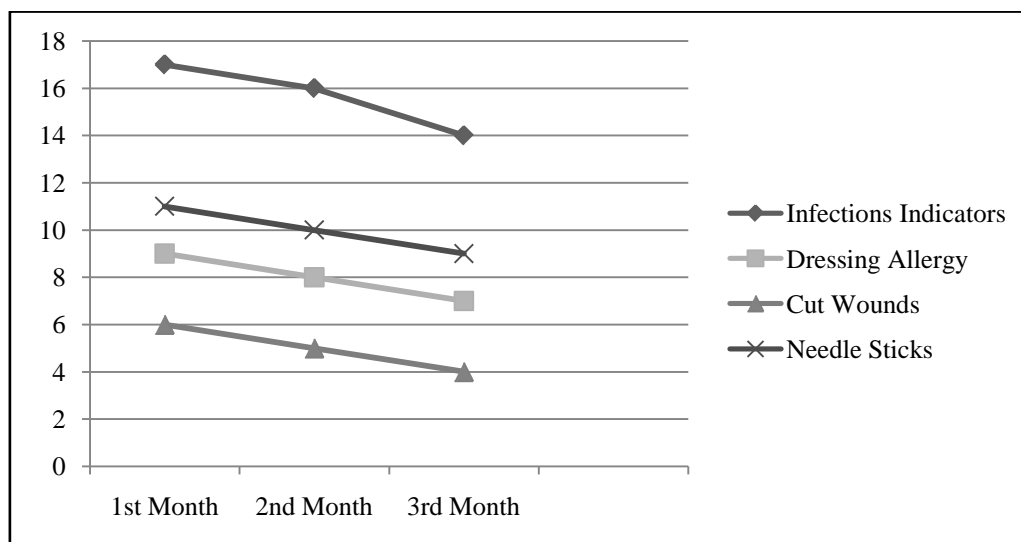
Figures 1. Frequency of clinical events during three months of the year 2011.

The Figure 1 shows that the reporting frequency for events decreased over time ($p = 0.002$) during three months at 2011 in the short term and in this hospital. Four indicators used in patient care were improved during these periods.

Table 3

Patient Safety Knowledgeof Four Major Scales Mean in Internal, Surgical, Intensive Care, Emergency and Operating Room Are Shown in the Table

	Internal medicine	Surgery	Intensive care	Emergency	Operation room	P
Needle sticks	12 ± 1.5	13 ± 1.1	14 ± 0.9	15 ± 0.7	13 ± 0.9	$t = 11.02;\ ^*p = 0.001$
Cut wound	7 ± 0.6	8 ± 0.9	8 ± 0.7	9 ± 0.6	8 ± 0.8	$t = 15.10;\ ^*p = 0.002$
Dressing allergy	8 ± 1.1	9 ± 0.7	10 ± 1	6 ± 0.2	6 ± 0.6	$t = 8.02;\ ^*p = 0.05$
Infections indicators	16 ± 1.3	20 ± 0.80	18 ± 1	22 ± 0.1	18 ± 0.7	$t = 1.08;\ ^*p = 0.001$
Total scale scores	16 ± 2.2	17 ± 1.0	16 ± 1	18 ± 0.3	17 ± 0.9	$t = 8.34;\ ^*p = 0.015$

Notes. [*] : 4 major scale mean; Source: Done by authors using SPSS.

Table 3 Shows that the significant statistical differences were also found between the frequency of events reported according to department (internal medicine, surgery, intensive care, emergency, operation room) and patient safety indicators ($F = 8.34;\ p < 0.05$). According to Table 3, mean score of relevant patient safety indicator are statistically found to be high in the emergency room ($18 \pm 0.3;\ t = 8.34;\ ^*p = 0.015$).

Discussion

Comparison of physicians and nurses for patient safety indicator using data from frequency of events indicated that nurses patient safety knowledge mean score are statistically significant than physicians in needle sticks, cut wounds, and infections indicators. While nurses are more used to participate in patient safety culture, physician are not yet. This finding suggests that changes need to be made in the organizational culture of hospitals like to involve nurses in the development and implementation of changes in healthcare safety work for establishing care protocols, improving communication and effective measurement of progress and feedback.

Physicians and nurses must cooperate in improving patient safety by the use of evidence-based medicine (Santacruz-Varela, Torres, & Dolci, 2010; Becher & Chassin, 2002).

But, there is no statistically significant difference in dressing allergy indicator. It could be because of other three indicators which make harm to both patient and health staff, but dressing allery is only a complaint of patient. The main reason of nurse and physician awareness of patient safety indicator is that the evaluation and management of risks for patient safety in the hospital of the country are still trying to develop (Firth-Cozens, 2001). There is the limited methodological survey. Absence of trained teams to evaluate and manage health risks with a scientific and systemic approach is an other important problem.

Findings from statistical analyses suggest that, nurses reported 67% of all events while physicians reported 35%. This result is probably due to a number of reasons based on lack of awareness of patient safety indicators.

Physicians do not view medical error as an important health problem even though they reported personal experiences with medical errors that had serious consequences (Reason, 2000).

Physicians and nurses are qualified and well prepared in the science and art of medicine, but they have not got necessary skills and knowledges to improve patient safety during their education or training.

There are different levels of systematic safety approach proposed by Donabedian in the hospitals and health care system like human, hospital, and clinical (Donabedian, 1978). In this study, hospital safety indicators are not used. Human and clinical safety indicators were interpreted. Chronic patients who often use health care services are vulnerable of the patient safety indicators more often than others. Firstly, because of their own pathology; and secondly, because of health personnel who may unintentionally cause harm to them.

Step by step patient safety indicators reestablishing in every hospital and primary health care setting called family practice center in Turkey. Still, there are lots of jobs to be done. But, to the extent that progress is made in the risk reduction using patient safety approaches in the Turkish hospital, it is possible to achieve further progress in patient safety.

The study also suggests that changes need to be made in the organizational culture of hospital environments. For effective patient safety culture physicians and nursesmust collaborate in promoting a change in the system from the current "culture of blame" to a "culture of safety" (Larson, 2000). The collaboration and problem-solving ability is needed among nurse and physician. Evidence-based medicineand quality of care also are important components of patient safety (Scherer & Fitzpatrick, 2008; Saint et al., 2012).

Patient safety and risk management are careful examinations of health care systems either in hospital or community care. They are useful for identifying factors and facilitating decisions of which precautions should be taken for safer provision of health care (Donabedian, 1980, 1982, 1985, 1988).

Hospitals like other organisation are mostly harmed by the actions of personnel or unsafe conditions (Al Awa et al., 2011). For example, emergency room patient safety indicators are found to be high according to the other part of the hospitals. This is because this part of the hospital is open to all kind of infection than any other part of it. Because all hospital staff is in a hurry in this part of the hospital, needle sticks and cut wound are higher than any other part.

These harms were shown as a result of complications like infections which result as a extended hospital stays for patients and their relatives. Finally, Turkish health care system need people who seek risk management in the health care as a professional job for very near challenges of the future. Implementing risk management and patient safety culture will facilitate the policy evaluation and cost-benefit analysis in the hospital.

A new study to find indicators levels of risk management in patient safety around specific problems such as patient identification and falls in hospitalize will help the study of risk management in the Turkish hospitals.

Limitation

The research sample was comprised of staff from only one hospital. It is possible that the apparent level of patient safety knowledge varies by the adverse event identification method used in the hospital.

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