

# Relationship between Safety and Staff Performance in Hospital

Sheida Mardani<sup>1</sup>, Seyed Jamaledin Tabibi<sup>1\*</sup>, Leila Riahi<sup>1</sup>

<sup>1</sup> Department of Health Care Services Management, College of Management and Economics, Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran

## Abstract

**Background and Objectives:** Mental and physical safety is one of the most important needs of human beings, and the administrators of each community should specifically care about it. Meanwhile, hospitals, which themselves are health care providers, are in no way an exception to this rule. Thus, hospital administrators are expected to take the issues related to physical and mental safety of staff and patients into consideration. The aim of this study is to determine the relationship between hospital safety and staff performance of Imam Khomeini Hospital, Tehran/Iran.

**Methods:** This is a correlational study. The statistical population included all employees of the hospitalization wards of Tehran Imam Khomeini Hospital (n = 200), who were selected by simple random sampling method (n = 65). Data collection was done using a questionnaire consisted of three sections; the first section for collecting demographic data, the second to measure the safety of the hospital (the independent variable), and the last one to measure the performance of employees (the dependent variable). Pearson's correlation test was used to test the correlations.

**Findings:** The results indicated that there is a significant relationship between the safety of the hospital and each of the factors affecting the staff performance. "Quality" indicator shows the strongest correlation with safety followed by "cost", "accountability", "discipline" and "quantity". "Time" showed the weakest correlation with the safety performance indicators. In general, there was a significant correlation between the hospital safety and the employees' performance.

**Conclusions:** Given the significant relationship between hospital safety and staff performance, the more the principles of safety are observed in a hospital, the better will become the staff performance.

**Keywords:** Hospital, Safety, Performance, Hospital Management, Hospital Staff

## Background and Objectives

Human resource is the most important asset for organizational development, as it uses other resources and gets best return out of them [1]. Creating a safe working environment is rationally acceptable and neglecting safety in the workplace can cause a lot of damage and injury to the workforce. Increased injuries caused by the absence of or inadequate safety in the workplace will not only lead to the financial losses, but also to the loss of valuable human resources of the organization. It is, therefore, nec-

essary that much more attention be paid to safety and occupational health than before [2].

Some studies suggest that accidents, injuries and illnesses in workplace are still significant problems in organizations [3]. Others indicate that if an organization can reduce the rate of occupational accidents, diseases and unwanted stress, naturally medical leaves, job abandonment and absenteeism will be reduced, and the efficiency and effectiveness of the organization, job satisfaction, flexibility, and employees' participation in workplace will be improve [2]. On the other hand, "amid international concerns about health care safety and quality, there has been an escalation of investigations by health care regulators into adverse events" [4].

\*Corresponding author: Seyed Jamaledin Tabibi, Department of Health Care Services Management, College of Management and Economics, Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran, P.O.Box: 1477893855, Tel: +98 44869701-3, Fax: +98 44869705, Email: sjtabibi@srbiau.ac.ir

Hospital is among the highly important and sensitive work environments since the performance of employees in its workplace is associated with the lives of thousands of people. Some studies have reported lack of safety in hospitals [5]. The hazards and incidents in this environment include: fire outbreak, electrical shock and burning due to it, burn injuries because of spill of acid on hands, skin or respiratory allergy to various chemicals used in hospitals, oxygen cylinder explosion as a result of overfilling, falling down and fractures of limbs or death of employees after falling from height, falling of patients out of their beds, burning in the operation room because of cautery device, busting of unprotected fluorescent light bulbs, and other frequent minor and major events [5].

The safety climate in hospitals is effective on some issues such as medication errors, nurse back injuries, urinary tract infections, patient satisfaction, patients' perception of the responsiveness of nurses, and nurse satisfaction [6]. Rosen *et al.* noted that establishing a strong safety culture is critical to improve the safety and to reduce adverse events [7].

"Safety culture" refers to the quality of teamwork, coordination, communication and responses to error in the health care settings [8]. Safety culture is associated with providing better quality health care to patients [8], and the results show that the general climate of the organization has a significant impact on the safety climate [9].

Some studies have offered strategies to promote safety in the hospital environment, including staff training, equipping the hospital, and systematic planning for evaluation of and upgrading health care quality and safety [10].

The study of Golafruz *et al.* confirmed the effectiveness of the implementation of safety management program on increasing the knowledge, attitude and performance of the medical staff and improvement of safety at the hospital [11].

Abdullah *et al.* partially studied the employees' perceptions on occupational health and safety (OHS) management in public hospitals in Malaysia, and indicated that employees will persist to continuously improve the safety, when they know that the management is openly more supportive of safety activities [12]. Some studies suggest that employees' intrinsic motivation is important to promote some of their safety behaviors [13].

Butt *et al.* reported the relationship between safety in the work spaces and commitment of the staff [14]. McCaughey *et al.* also reported the role of perception of safety climate with job satisfaction and job stress among the employees in the workplace [15].

Nezam Shahidi *et al.* reported that the quality of

working life of the employees affect their performance [16]. In this study, safe work environment was effective on the employees' performance. Saleh Koshki *et al.* showed that safe working environment influences the improvement of efficiency of the personnel [17]. Ziaei Bigdeli found a relationship between social atmosphere of an organization and quality of life of the personnel [18].

Soltan Hosseini *et al.* confirmed the relationship between safe working environment and affective commitment of the staff. In this study, a positive correlation was found between these two variables [19]. Ghasri *et al.* proposed the relationship between the organizational commitment and the workplace safety [20].

What is apparent from the above-mentioned studies is the fact that most of them have examined the safety, safety standards, safety management and safety culture or have investigated workplace safety as a component of quality of work life and its relation with the performance and efficiency of organization and the organizational commitment of employees. Seemingly, no research has so far investigated the relationship between the workplace safety and the performance indicators such as quality, quantity, time, costs, discipline and accountability. Therefore, the strength of the present study is that these relationships are examined in more details and more efficiently.

Most of studies conducted on safety have mainly focused on safety status and safety level [21, 22 and 23], safety culture in health care centers [24, 25 and 26], safety management, and compliance with safety standards [27 and 28]. However, the safety outcome in hospitals and health care centers has not been taken into account. Also the issue that safety in the health care sector can have an impact on employees' performance has not been addressed yet. This study aims to determine whether the performance of staff in hospitals is associated with the safety in these organizations, and whether this is related to the quality and quantity of the employees' performance? The study further attempts to answer in details such questions as: Is safety in hospital is associated with performing the duties by the related staff in a timely manner?, Is increased safety correlated with reduced time waste by the personnel for performing their duties?, and Is safety in hospitals related to costs, disciplines in providing services, and accountability of the health care workers?

## Methods

### Study Design

This cross-sectional study was conducted in the hospital-

ization wards of Imam Khomeini Hospital affiliated to Tehran University of Medical Sciences and Health Services, from February 2012 to July 2012.

### Data Collection

A questionnaire consisting of three sections was used for data collection. The first section was dedicated to the demographic data, including seven questions about gender, age, education, work experience, marital status, position and department. The second section dealt with assessing the safety of hospitalization wards; for this purpose, a questionnaire prepared by Mehrabadi [29] was used with some modifications including 34 questions, each scored based on 5-point Likert's scale (5 = Very high, 4 = High, 3 = Medium, 2 = Low and 1 = Very low). The third section of the questionnaire was to assess the employees' performance. This was taken from a section of the questionnaire by Mohammadi (based on Richard Lynch and Kelvin Cross model) [30] with some minor changes, and consisting of 22 questions. The performance measurement questionnaire included six performance indicators: quality (questions 1 to 3), quantity (question 4), time (questions 5 and 6), cost (questions 7 and 8), discipline (questions 9 to 17), and accountability (questions 18 to 22). Again, each question was scored based on 5-point Likert's scale (5 = Very high, 4 = High, 3 = Medium, 2 = Low and 1 = Very low). At the end of the questionnaire, two open questions were provided to get feedbacks of the participants.

The validity of the content of the questionnaire was measured using experts' opinions. To measure the reliability of the questionnaire, it was distributed among a sample of 30 subjects at the hospital, who were excluded from the main study. Then the reliability coefficient was calculated based on Cronbach's alpha, which was 74% and 91% for the employees' performance section and the safety section, respectively, indicating the acceptable reliability of the questionnaire.

### Data Analysis

Data were summarized using descriptive statistical methods. Correlations were calculated using Pearson's coefficients. All analyses were carried out using SPSS Version 17 Software.

## Results

### Demographic Data

Table (1) shows the demographic data of the samples; 92% were female, 78.46% were married, 65% were un-

**Table 1 Demographic data of the hospital staff**

Variable	N	%
Gender (n = 100)		
Female	60	92
Male	5	8
Age (n = 100)		
< 35 years	42	65
36-45 years	23	35
> 45 years	0	0
Degree (n = 100)		
Diploma or lower	5	7.7
Associate diploma	5	7.7
Bachelor	50	77
Master or above	5	7.7
Experience (n = 100)		
< 5 years	19	29.2
5-10 years	9	13.8
10-15 years	18	27.7
> 15 years		
Marital status (n = 100)		
Married	51	78.5
Single	14	21.5

der 35 years, 77% had bachelor degree, 29.23% had less than 5 years of experience, and the same rate had 5-10 years of experience.

### Descriptive Results

The mean safety score of the hospital was 2.6231, while the highest score and lowest score were 3.47 and 1.79, respectively. The mean score of the employees' performance was 3.4006, with the minimum and maximum of 2.68 and 5.95, respectively. The mean score of the employees' performance quality was 4.0238, with the highest and lowest scores of 4.67 and 2.33, respectively. Regarding the employees' performance quantity, the mean, highest and lowest scores were 6.9286, 5.00 and 2.00, respectively. The mean score of 3.7829, the highest score of 4.50 and the lowest score of 2.50 were obtained for time. Regarding the costs, the mean score was 3.5764; with the highest and lowest scores of 5.00 and 2.50, respectively. The mean, highest and lowest scores for discipline were 3.7925, 4.50 and 2.50, respectively. Finally, the mean score of 3.8307, the highest score of 5.00, and

**Table 2 Score Mean and Standard Deviation of Safety Measures in the Surveyed Hospital**

Safety Measures	Mean	SD
1. To what extent are the floors and walls washable?	3.71	0.80
2. To what extent have the windows of the patients' room protective fences?	3.00	1.00
3. To what extent are the hospitalization wards, particularly in the sensitive units, equipped with emergency power?	3.85	0.77
4. To what extent are the electrical sockets connected to the earth system?	2.85	1.03
5. To what extent have the facilities for calling the nurses to provide timely care with safety been predicted?	2.57	1.19
6. To what extent have the patients' beds bedside?	4.43	0.73
7. To what extent the nursing stations have enough view of all patient rooms?	2.14	1.13
8. To what extent is there enough space in the rooms of the wards between the beds to avoid possible infection?	2.79	1.21
9. To what extent are the medical equipment of the wards periodically controlled in terms of safety?	3.00	0.85
10. To what extent are suitable isolated rooms predicted in the wards in terms of safety requirements?	2.29	0.89
11. To what extent are the different sections of the wards disinfected daily considering the relevant principles?	2.57	0.91
12. To what extent are the necessary facilities to disinfect the bedpans and urine tubes forecasted?	2.07	1.11
13. To what extent is it possible to disinfect the bedpans and other containers using hot water (85 °C) or steam?	2.00	0.97
14. To what extent have sufficient number of showers, toilets and tubs been forecasted in the wards?	2.14	0.84
15. To what extent are the principles of the separation of clean/polluted spaces respected?	2.71	0.80
16. To what extent do the staff of intensive care units, newborns and maternity units and isolation rooms use special uniforms?	3.46	1.02
17. To what extent are the personnel of the wards, particularly in the sensitive wards such as infectious diseases unit, periodically examined?	2.29	0.96
18. To what extent is periodic culture carried out in the intensive care, newborns and maternity units?	2.38	0.93
19. To what extent are the guidelines of the principles of safety available?	2.85	0.96
20. To what extent have fire distinguishing systems been predicted in different wards?	3.00	0.66
21. To what extent are the alarm systems for dropped pressure or disconnected flow of natural gas (Oxygen) predicted, especially in the intensive care unit?	2.38	1.08
22. To what extent is the smoke detection and fire alarm system available in the wards?	1.93	0.71
23. To what extent are the infectious wastes segregated from other wastes in the wards?	2.93	1.17
24. To what extent are the guidelines of waste disposal methods available in the units?	2.86	1.13
25. To what extent are some rooms predicted for storage of the cleaning equipment in the units?	2.54	0.64

**Table 2** Score Mean and Standard Deviation of Safety Measures in the Surveyed Hospital

Safety Measures	Mean	SD
26. To what extent are facilities available to collect waste in special containers with ventilation in units?	2.21	0.78
27. To what extent are the trash bins with resistant bags provided for the collection of wastes?	2.50	1.00
28. To what extent has a room with facilities including separate carrier baskets for collecting clothes been predicted?	2.36	1.12
29. To what extent is there a place for storage of hospital trolleys?	2.21	0.87
30. To what extent is there an electrical and mechanical equipment maintenance room in the units?	2.21	0.94
31. To what extent is there a disinfected ventilation system available in the units, such as intensive care, newborn and maternity unit, and rooms for patients with infectious diseases?	2.23	0.80
32. To what extent is there the emergency exit with required signs available?	1.93	1.04
33. To what extent are cautions for the special conditions of the patients such as drug reactions clearly documented on the covers of the records?	2.79	1.00
34. To what extent have accidents or incidents been occurred in the hospitalization wards during the past year? (Explain, if applicable).	2.00	1.36

the lowest score 2.00 were achieved for accountability of the employees.

### Correlations

In this study, a direct and significant correlation was observed between the hospital safety and the staff performance ( $P < 0.01$ ). Moreover, there was a direct and significant correlation between the safety of hospital and six performance indicators of the staff (i.e. quality, quantity, time, cost, discipline and accountability). This means that by increasing the safety of the hospital, the performance quality of the personnel increases, and the clients' satisfaction ( $P < 0.01$ ), and also the quantity of works become more important for the personnel ( $P < 0.01$ ).

When the safety of hospital increases, the staff perform their duties in a more timely manner and waste their time less frequently ( $P < 0.01$ ). Increase in the safety of hospital makes staff try to do more works with less costs and not to use the hospital facilities for their personal use ( $P < 0.01$ ). Increased safety in the hospital means that the staff will show more respect for the rules and regulations, will be more disciplined and on-time for work, and thus less disobeying of the superiors will happen ( $P < 0.01$ ). Safety increase in the hospital increases the staff's accountability to the clients and feeling of responsibility for their duties ( $P < 0.01$ ).

### Discussion

This study aimed to investigate the relationship between hospital safety and staff efficiency in Imam Khomeini Hospital. The results showed a significant correlation between the employees' performance and hospital safety. There were also significant correlations were between hospital safety and the performance indicators including quality, quantity, time, costs, discipline, and accountability.

Our findings are consistent with the findings of some studies, indicating the impact of healthy and safe workplaces on the employees' performance [31, and 32].

Butt *et al.* reported that safety and quality of the work spaces have a strong positive correlation with the work commitment of the nursing staff [14].

Golafrooz *et al.* also reported the effectiveness of the implementation of safety management program on increasing the knowledge, attitude and performance of the medical staff [11]. Also we should be aware that according to some researches, employees will persist to continuously improve the safety, when they know that the management is openly more supportive of safety activities [12].

In this context, some researchers have indicated that higher proportion of professional nurses in the staff mix can be a predictor for reduced medical errors and wound infections in the medical and surgical wards [33]. In this study, we found a significant correlation between per-

**Table 3 Score Mean and Standard Deviation of the Measures of Hospital Staff Performance**

Hospital Staff Performance Measures	Mean	SD
<b>Quality</b>	4.02	0.66
1. To what degree do you agree with this statement? "Never do the employees sacrifice quality for quantity."	3.54	1.23
2. How important is the customer satisfaction for the employees?	4.29	0.59
3. How much care the employees take to perform their duties?	4.21	0.78
<b>Quantity</b>	6.92	0.47
4. How important is the quantity of works for the employees?	6.93	0.47
<b>Time</b>	3.78	0.57
5. To what extent do the staff try to make good use of time in performing their duties?	4.36	0.72
6. How much do the employees waste their time at work?	1.36	0.48
<b>Cost</b>	3.57	0.88
7. To what extent do the employees try to perform their work with minimal cost?	3.64	0.90
8. To what extent do the employees use the hospital facilities for personal purposes?	1.64	1.05
<b>Discipline</b>	3.79	0.69
9. To what extent are the regulations in the hospital respected?	3.64	0.98
10. How many times are the employees late to work?	1.64	0.82
11. To what extent are the links more helpful than the rules in the hospital?	4.00	0.85
12. To what extent does the staff disobey the superiors' instructions?	2.00	0.66
13. To what extent do the staff horseplay in the workplace?	1.43	0.63
14. To what extent are there conflicts in the hospital?	3.50	0.91
15. To what extent are the principles of safety respected by the employees?	3.71	0.70
16. How much care is given to works in the hospital?	3.57	0.63
17. To what extent are honesty and truthfulness common among the staff regarding the administrative matters?	3.29	1.10
<b>Accountability</b>	3.83	0.72
18. To what extent do the employees take the responsibility for the results of their works in the hospital setting?	3.36	1.12
19. To what extent are the employees ready to provide the clients with necessary information?	3.71	0.70
20. Generally, to what extent are the employees of the hospital held accountable to their manager or supervisor?	3.79	0.87
21. To what extent does the staff of the hospital acknowledge their faults and errors?	3.79	0.56
22. How much transparency is there the in practice of the personnel?	3.43	0.99



formance and safety; however, this relationship was not significant in some other studies [34].

The results of this study showed that increased safety in hospital leads to increased quality of staff performance. Birkmeyer *et al.* also noted the safety culture in hospitals is associated with providing better quality health care for patients [8].

Observing the safety principles and standards in hospitals decreases the number of accidents and risks to both patients and staff while receiving or providing services, accelerates the treatment and discharge process and, consequently, increases the number of services offered in a hospital and its productivity. These results are consistent with those of the study by Farivari conducted to evaluate the impact of improvement of quality of life programs in increasing the productivity of the employees in Pars Electric Company (Tehran/Iran). This indicates that improving the quality of life programs, together with a safe and healthy work environment as one of its aspects, affects the productivity and efficiency of the company [35].

Our finding further revealed that by increasing the hospital safety, the staff will perform their duties in a timely manner, and the time required to carry out such works will decrease. To our knowledge, no research has been conducted for examining the relationship between hospital safety and duration of work; however, Thungjaroenkul *et al.* investigated the relationship between nurse staffing and patients' length of stay. They reported that with greater registered nurses (RN) due to their more knowledge and skill levels, the more significant reduction will be observed in the patients' length of stay. Thus, sufficient numbers of RNs may reduce the incidence of adverse events that may cause patients' longer stay [36]. This can be interpreted as the use of qualified personnel with high skills increases the patients' safety, and decreases the incidents occurring for the patients; thus patients' reduced length of stay in hospital can be expected. The present research also showed that by increasing the safety in hospitals and accurate implementation of safety principles, the risk of adverse events' occurrence in hospitals and thus the time required to perform works will be reduced significantly.

Our findings showed that by increased safety in hospital, the staff will try to do more works with less costs and this will reduce service costs. This is partly consistent with the result reported by Zwanziger *et al.* They also reported that safety net activities have a minimal negative effect on the total profit margin and costs [37]. Since, the present research showed that with enhanced safety, the staff will take minimizing

**Table 4 Correlations between the Hospital Safety and Hospital Staff Performance**

Hospital Staff Performance Measure	Correlation with Hospital Safety
Quality	0.737**
Quantity	0.553**
Time	0.540**
Costs	0.671**
Discipline	0.588**
Accountability	0.636**
Performance	0.644**

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

the costs into consideration, so in a hospital with high safety level, it is expected that the cost of providing the services will be reduced.

The results of the study indicated that by increased safety in the hospital, the compliance with the regulations will be more focused on by the personnel, they will be more disciplined and on-time, and will disobey the superiors' instructions less frequently. Observing the rules and regulations in the hospital and requiring the employees to observe safety rules and instructions by the managers of the hospital will improve the discipline and upgrade the hospital safety. Neal *et al.* also showed that the general atmosphere of the organization has a significant impact on the safety climate, which will in turn affect the self-report of compliance with the safety regulations and procedures as well as participation in the activities related to safety at work [9].

This study showed that an increase in hospital safety increases the staff's accountability to the clients and showing responsibility for the duties.

The findings of Hofmann *et al.* regarding the safety climate and medication errors showed that safety climate is correlated with some important organizational outcomes including the patients' perception of the nurse responsiveness [6]. According to our findings, it is understood that staff performance is correlated with quality, quantity, time, costs, discipline and accountability with regard to hospital safety. This means that if hospital safety can be taken into account and the safety standards are adhered to the health care departments, it can be expected that the staff will have better performance in terms of quality and quantity. They will show more discipline in their activities, the costs will be reduced, the patient discharge process will be accelerated, the patients' hospital stay duration will be shortened, and staff accountability will be improved. The results of this study can help

the policymakers and planners of health care systems in improving the efficiency and performance of the employees, since they can adopt some measures to help improving staff performance and ultimately increasing the productivity of the organization. Moreover, given that some researchers have emphasized the importance of safety in the workplace, and that safety is correlated with work commitment [14], job satisfaction, and job stress [15], the managers should always pay due attention to the issue. They should provide a safe working environment for the staff, and promote their intrinsic motivations for safe behaviors, as intrinsic motivation of employees is important in promoting some of the safety behaviors in the workplace [13].

Based on the results of the present study, the following recommendations are proposed: establishing of accreditation standards, organizational excellence models, occupational health and safety management systems for quality indicators, receiving grants from individuals, charities or government, obtaining revenue through the provision of health care services to the public, investment in economic activities for profit to offset the costs of safety measurements, training for the staff on how to interact constructively with the clients and how to be customer-oriented, and establishing appropriate reward systems and evaluation procedures, particularly in relation to dealing with the clients respectfully and in an accountable manner.

### Study Limitations

It is worth noting that there were some limitations in conducting of the research: Imam Khomeini Hospital is a teaching hospital and is often too busy, and some questions were not answered completed. It is also likely that the answers to some questions may not be sufficiently accurate. The results of this study are, therefore, unique for Imam Khomeini Hospital of Tehran and generalization of the results for broader and more comprehensive fields require more research.

### Conclusions

This study demonstrated that there is a significant relationship between hospital safety and staff performance. It was found that an increase in hospital safety improves the quality of service provided by the personnel and that they will pay more attention to quality. Increased hospital safety also makes the quantity of works more important for the personnel. Increased safety of the hospital leads the staff to make good use of their time in performing their duties and try to do works with the least costs. By this,

the hospital staff will further respect regulations, will be more careful, and will respect the safety principles more frequently. The employees will further become more accountable to the clients and take more responsibilities for their assigned tasks. In this case, the personnel tend to provide the clients with necessary information, and similarly become more accountable to the hospital administrators and managers. By increased safety in the hospital, more employees will acknowledge their faults and errors. Based on the research findings, if the safety of the hospital increases, it is expected that the employees' performance also increases, and consequently, the quality and quantity of the services may be improved. Such improvement will reduce waste of time, and all of these will affect the health of the patients. Therefore, taking safety into consideration is an important step towards improving the safety of health care services in the community. The improved safety in hospitals will improve health care quality, and plays an important role in patient satisfaction, which is a very important factor for the health care systems. Furthermore, the number of incidents concurred for patients and staff will decrease. Safety improvement will increase productivity and efficiency in hospitals. Enhanced safety decreases the time needed for completing works, and the probability of unwanted events; this will in turn reduce the hospital costs. Increased safety also brings about more discipline. By establishing safety requirements and standards in the hospitals and medical centers, they will care more about the safety of their staff, their clients and patients, and enhance their accountability. Thus, according to the findings of this research, safety is an important issue, and the hospitals and health care centers must implement and enforce the safety requirements. They should focus on safety promotion programs for evaluating staff performance, and implement safety standards and occupational health and safety management systems in a systematic and practical manner. The findings of this study can be useful for health policy-makers and planners to carry out planning for upgrading the public health. This study also recommends further attention to safety in the workplace, particularly in the health care centers.

### Competing Interests

The authors declare that there is no competing interest.

### Authors' Contributions

SJT and SM jointly designed the study. SM collected, refined and analyzed the data. SM and SJT contributed to the interpretation of the results. SM prepared the draft manuscript. SM, SJT and LR revised and finalized the manuscript. The final manuscript was read and approved by all authors.



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## References

- Hussain KA, Musarrat NM, Muhammad A, Wasim H. Impact of job satisfaction on employee performance: An empirical study of autonomous Medical Institutions of Pakistan. *Afr J Bus Manage* 2012, 6(7):2697-705.
- Stone RJ. Human Resource Management. 5th edition:Wiley; 2004:651-652.
- Ford MT, Tetrick LE. Relations among occupational hazards, attitudes, and safety performance. *J Occup Health Psychol* 2011, 16(1):48-66.
- Laverty AA, Smith PC, Pape UJ, Mears A, Wachter RM, Millett C. High-profile investigations into hospital safety problems in England did not prompt patients to switch providers. *Health Aff* 2012, 31(3):593-601.
- Khodabakhsh-nejad V. Safety status of hospitals of Guilan University of Medical Sciences. *MS Thesis*. Tehran University of Medical Sciences; 2004. [In Persian]
- Hofmann DA, Mark B. An investigation of the relationship between safety climate and medication errors as well as other nurse and patient outcomes. *Pers Psychol* 2006, 59(4):847-69.
- Rosen A, Singer S, Hartmann C, Shokeen P, Zhao S, Falwell A, et al. Is There a Relationship between Hospital Safety Culture and Safety Outcomes in VA Hospitals? *Academy Health* 2008.
- Birkmeyer NJO, Finks JF, Greenberg CK, McVeigh A, English WJ, Carlin A et al. Safety culture and complications after bariatric surgery. *Ann surg* 2013, 257(2):260-5.
- Neal A, Griffin MA, Hart PM. The impact of organizational climate on safety climate and individual behavior. *Saf Sci* 2000, 34(1):99-109.
- Almasi A, Matin BK, Davoudi R, Jafari A. Studying the qualitative indicators of health and safety in Taleghani general educational hospital. Fourth National Conference on Environmental Health; Kermanshah University of Medical Sciences; 2001. [In Persian]
- Golafruz H, Ebadi A, Salari M, Golafruz shahri M, Javadi M. The Effect of Safety Management Program on Knowledge, Attitude and Practice (KAP) In Health Care Personnel. *Journal of Sabzevar University of Medical Sciences and Health Services* 2011, 18(2):98-103. [In Persian]
- Abdullah NAC, Spickett JT, Rumchev KB, Dhaliwal SS. Assessing Employees Perception on Health and Safety Management in Public Hospitals. *International Review of Business Research Papers* 2009, 5(4):54-72.
- Conchie SM. Transformational leadership, intrinsic motivation, and trust: A moderated-mediated model of workplace safety. *J Occup Health Psychol* 2013, 18(2):198-210.
- Butt H, Khan F, Rasli A, Iqbal M. Impact of work and physical environment on hospital nurses commitment. *Int J Eco Res* 2012, 3:33-43.
- McCaughey D, DelliFraine JL, McGhan G, Bruning NS. The negative effects of workplace injury and illness on workplace safety climate perceptions and health care worker outcomes. *Saf Sci* 2013, 51(1):138-47.
- Nazem Shahidi, Salehi-Amiri SR, Khakdamn MS, nadrian H. The role of the quality of work life on employees' performance (Case Study: Karaj, Alborz radio channel, affiliated with IRIB). *the management of cultural* 2011, 5(12):19-35. [In Persian]
- Saleh Kooshki M, Akbari Sari A, Arab M, Angaly KA. Quality of life work and its relation to the productivity of nurses in hospitals of Shahid Beheshti University of Medical Sciences. *Journal of School of Public Health Research Health* 2012, 10(4):81-90. [In Persian]
- Bigdeli MZ. Studying the role of social climate on the quality of work life of workers in the industry (Case study: East Azarbaijan Province), Applied Sociology. *Journal of Humanities Research of Isfahan University* 2010, 21(37):105-22. [In Persian]
- Soltan Hosseini M, Naderian M, Homaie R, Mousavai Z. The quality of work life and organizational commitment in staff of department of physical education of Isfahan. *Sport Management* 2009, 2(1):167-81.
- Ghasri M, Abdolalipour G, Ghobadi A. Quality of working life on organizational commitment of staff of police science academy. *Police Management Studies* 2011, 6(2):177-93. [In Persian]
- Khanjankhani K, Sepaseh F, Bahrami M. A comparison of the safety level in teaching hospitals in Yazd in 2012. The First Student Congress of Clinical Governance and Continuous Quality Improvement; Tabriz University of Medical Sciences and Health Services 2012. [In Persian]
- Fathi M. Studying safety of the hospitals of Kurdistan University of Medical Sciences and Health Services in 2002. *Scientific Journal of Kurdistan University of Medical Sciences* 2002, 7(26):37-42. [In Persian]
- Janghorbani M, Reisi A, Dehghani S, Mousavi A. Assessing the safety status of operating room of Shahid Beheshti Hospital using safety-friendly hospital standards, Health Information Management. *Special Issue on Management of Health Systems Development* 2012, 9(7):1066-72. [In Persian]
- Gholizadeh M, Jannati A, Narimani M, Shakersaray A, Pazireh R. Safety culture of patients at Imam Reza

- Medical Center. The First Student Congress of Clinical Governance and Continuous Quality Improvement; Tabriz University of Medical Sciences and Health Services 2010. [In Persian]
25. Reisi AR, Nazari M, Bahman Ziyari N. Evaluation of safety culture in selected hospitals in Isfahan in 2010, The First Student Congress of Clinical Governance and Continuous Quality Improvement, Tabriz University of Medical Sciences and Health Services, 2012. [In Persian].
  26. Abdi J, Maleki M, Khosravi A. Staff perceptions of patient safety culture in selected hospitals of Tehran University of Medical Sciences. *Payesh* 2011, 10(4):411-9 [In Persian].
  27. Pourreza A, Haghighi FA, Khodabakhshnejad V. Maintenance management and safety in diagnostic teaching hospitals of Guilan University of Medical Sciences and Health Services. *Health Information Management* 2006, 3(2):93-102. [In Persian]
  28. Zabuil R, Tofighi S, Delavari A, Hashemi SM. Studying safety management at Baghiyatolah Hospital in 2006. *Journal of Military Medicine* 2007, 9(2):103-11. [In Persian]
  29. Mehrabadi Z. Determining safety status in selected hospitals of Tehran University of Medical Sciences and Health Services. *MS Thesis*. Islamic Azad University, Science and Research Branch 2004.
  30. Mahmoudi M. Organizational culture of public and private hospitals and its relationship with the staff performance: A case study of Modarres Public Hospital and Laleh private Hospital. Islamic Azad University, Science and Research Branch; 2010. [In Persian]
  31. Chamazkati HY. Relationship between quality of working life of health workers and their performance in health care network of Joibar County, Mazandaran. Iran University of Medical Sciences 2005. [In Persian]
  32. Moradian Z. The relationship between quality of working life and performance of staff in the Ministry of Roads and Transportation. *MS Thesis*. Management and Planning Organization of Tehran Province; 2003.
  33. Hall LM, Doran D, Pink GH. Nurse staffing models, nursing hours, and patient safety outcomes. *J Nurs Adm* 2004, 34(1):41-5.
  34. Sahebzadeh M, Hosseini SM, Javadinejad N, Farazandeh Mehr A. Relationship between standards of physical spaces, equipment, safety, health and demographic characteristics of nurses with the performance of the nurses of surgical wards in Educational Hospitals of Isfahan. *Journal of Hospital* 2011, 10(2):76-87. [In Persian]
  35. Farivari M. Impact of Improvement of Quality of Life Programs in Increasing the Productivity of the Employees in Pars Electric Company. Master thesis. Islamic Azad University, Central Tehran Branch; 2000. [In Persian]
  36. Thungjaroenkul P, Cummings GG, Embleton A. The impact of nurse staffing on hospital costs and patient length of stay: a systematic review. *Nurs Econ* 2007, 25(5):255-65.
  37. Zwanziger J, Khan N, Bamezai A. The relationship between safety net activities and hospital financial performance. *BMC Health Serv Res* 2010, 10(1):15.

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