International Journal of Advanced Biotechnology and Research (IJBR)
ISSN 0976-2612, Online ISSN 2278–599X,
Vol-8, Issue-4, 2017, pp656-661
http://www.bipublication.com

Research Article

Investigating the Attitude and Practice of Operating Room and Anesthesia Staff and Interns towards the Completion of the Surgical Safety Checklist in the Operating Rooms of Hospitals Affiliated with Jahrom University of Medical Sciences in 2016

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ABSTRACT

Introduction: Patient safety is one of the main indicators of risk management in clinical governance system. Surgical care is a crucially sophisticated medical care in treatment centers. Therefore, this study aimed to investigate the attitude and practice of operating room and anesthesia staff and interns towards the completion of the surgical safety checklist in the operating rooms of hospitals affiliated with Jahrom University of Medical Sciences in 2016.

Research method: This was a cross-sectional study. Data were collected using a researcher-made questionnaire, containing 45 questions in three parts. The first part of the questionnaire contained demographic information of personnel and interns and the second part contained general and detailed attitude of participants on the checklist. The third part included a surgical safety checklist, consisting of 19 items and the necessity of each item and its effectiveness in improving service quality which was measured on a 5-point Likert scale. Data were analyzed in SPSS 11, using descriptive statistics (mean, frequency and percentage).

Results: Among all the 81 participants, there were 28 interns and 53 operating room and anesthesia staff. 61.5% believed that the surgical safety checklist is being completed at the right time. The first part of the questions measured the level of familiarity and preparedness and opinions of individuals on checklist completion. In general, only 23% of the participants had a good level of familiarity and preparedness; 45% of them had a moderate level and 13% had a poor level of familiarity and preparedness with checklist completion. There was no significant relationship between the field of expertise and the level of familiarity and preparedness ($p \leq 0.85$). None of the participants had a poor attitude toward the checklist items. The second part of the questions measured the attitude of the participants towards various items of the checklist. 11.1% of the participants had a moderate attitude and 88.9% had a good attitude towards the accuracy and applicability of the checklist items. There was a significant relationship between the field of expertise and the attitude of the participants ($p \leq 0.05$); as, the operating room staff had a more positive attitude towards the checklist items than the anesthesia staff.

Conclusion: The results indicated that the surgical safety checklists were completed for all patients and were attached to their medical records. The only challenges were probably accuracy and completing checklists properly, at the right time and in the right place. Appropriate training courses should be planned for staff, in this regard.

Keywords: surgical safety, operating room, anesthesia, checklist.

INTRODUCTION:

Today, patient safety is considered an important issue worldwide, in the clinical governance system. Evidence suggests that 10% of patients in hospitals suffer from medical errors resulting in negative consequences; while, the errors can be prevented in half of the cases (1). Patient

safety involves the establishment of a monitoring system to minimize faults and errors and to maximize the confidence level in the implementation of processes (2). In the UK, the annual incidence rate of patient safety-related events is 850000 cases in 8 million admissions and the cost of additional hospitalization days is estimated over 2 billion pounds (3). Therefore, patient safety protocol has been designed and compiled in the United States, Canada, Britain, Scandinavia, and Japan through international efforts and extensive research. It focuses on error reduction, risk management, avoidance of treatment complications and injury prevention (4). The world health organization (WHO) has developed its surgical safety programs around the world to conduct patient safety plans (5). Surgery is an integral part of health care, with an estimated 234 million operations performed annually (6). This annual figure exceeds the number of births within the same time period (7). The operating room is one of the most complex work environments in healthcare systems. This complexity is evident in patient affairs, treatment protocols and the application of high-tech equipment and procedures in the operating room (8). In this regard, effective management is essential for coping with rapid and increasing changes to ensure the safety of the staff and patients in the operating room (9). The purpose of observing safety precautions in the operating room is to ensure the safety of the operating room staff and the safety of the patient undergoing the surgery. Providing required safety in the operating room is a group work. All the personnel have a common responsibility to provide safety for themselves and for patients. Therefore, it is very important to review the required safety principles periodically and to comply them with the available standards; because limited economic resources and medical equipment, suitable atmosphere, etc., require more and more sensitivity in service provision (10). Surgical care can prevent loss of life or limb; however, it may also result in some side effects or even death. The risks of side effects are poorly characterized throughout the world; however, some estimates in industrialized countries indicate that the death rate of hospitalized patients is 0.4 to 0.8% and the rate of major complications is 3 to 17% (11-12). These rates are much higher in developing countries (16-13). Therefore, the global public health community has always paid special attention to the surgical care and its possible complications, as a substantial burden of diseases. Given the importance of the surgical safety checklist raised by the WHO and its impact on reducing postoperative mortality, morbidity and complications, the proper completion of this checklist by the personnel is essential. Therefore, it seems necessary to consider the views of the operating room staff about completing this checklist. This study aimed to investigate the attitude of operating room and anesthesia staff and interns towards the completion of the surgical safety checklist and their views on the importance of each item and finally to analyze the factors which have led to the improper and untimely completion of the checklist. This checklist may need to be localized based on the conditions and requirements of the operating rooms located in different cities; thus, the present study can provide useful results in this regard.

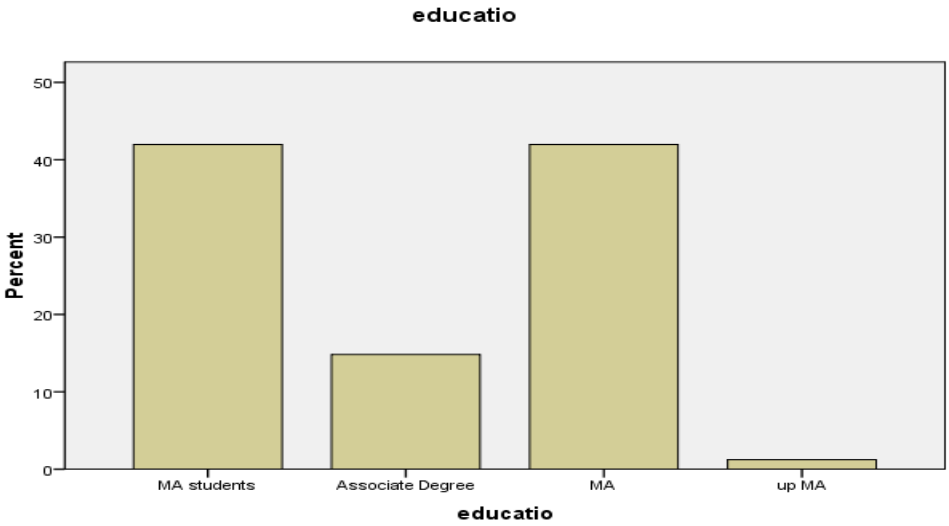
RESEARCH METHODS:

This was a cross-sectional study. Data were collected using a researcher-made questionnaire on a 5-point Likert scale. The validity of the questionnaire was confirmed by some of the University professors and its reliability was confirmed after conducting a pilot study and completion of the questionnaire by 20 individuals (10 students and 10 operating room and anesthesia staff). Using Cronbach's alpha coefficient, a reliability of 0.85 was calculated for the questionnaire. The questionnaire contained 45 questions in three parts. The first part of the questionnaire contained demographic information of personnel and interns. The second part contained general and detailed attitude of participants on the checklist, including: its effectiveness, its acceptance by participants, their desire to complete it, the need to change the checklist based on the special conditions of each operating room, etc. The third part included a surgical safety checklist, consisting of 19 items and the necessity of each item and its effectiveness in improving service

quality was measured on a 5-point Likert scale. Questions were scored on a 5-point Likert scale from very high importance (score 4), high importance (score 3), mediocre importance (score 2), low importance (score 1) and no importance (score 0). The questionnaires were given to the participants and completed, after obtaining permission from the relevant organizations and obtaining the consent of the participants. Data were then analyzed in SPSS 11, using descriptive statistics, such as mean and frequency.

RESULTS :

In this census study, 81 individuals completed the questionnaire. There were 28 interns and 53 operating room and anesthesia staff. The education qualification of the participants is presented in the following diagram:



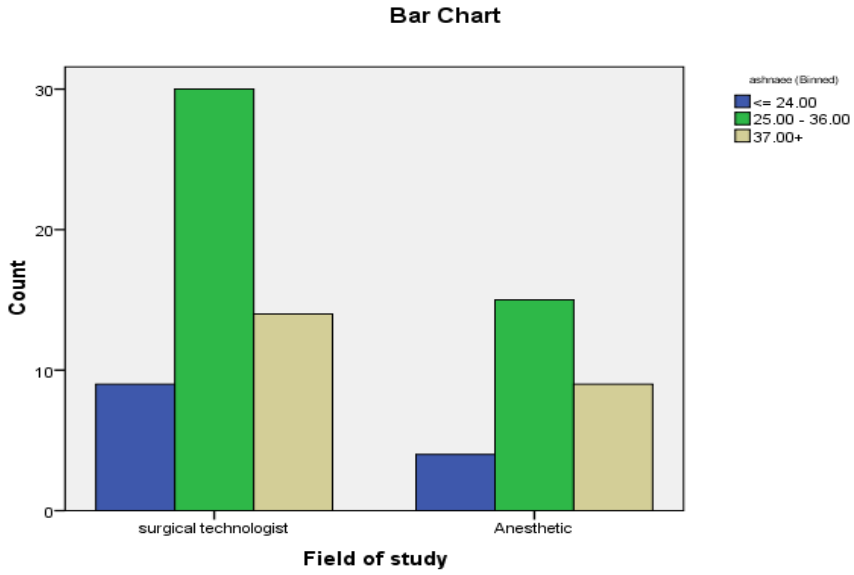
"The horizontal column [from left to right] represents interns, associate degree holders, bachelor's degree holders, master's degree holders, respectively"

61.5% believed that the surgical safety checklist is being completed at the right time. In addition, 42% agreed that it would be better to assign the task of checklist completion to one person. However, 35.8% argued that both the operating room and anesthesia staff should complete the checklist.

Only 23% of the participants had a good level of familiarity and preparedness; 45% of them had a moderate level and 13% had a poor level of familiarity and preparedness with checklist completion. There was no significant relationship between the field of expertise and the level of familiarity and preparedness ($p \leq 0.85$). The major items examined in the first part of the questions included:

Items	Very good	Good	Mediocre	Poor	Very poor
The level of familiarity with the surgical safety checklist	29.6	43.2	18.5	6.2	2.5
The level of desire to complete the checklist	8.6	32.1	25.9	22.2	11.1
The level of focus of individuals during completing the checklist	21	45.7	18.5	11.1	3.7
Completing the checklist at the right time	12.3	35.8	27.2	11.1	13.6
The attention of respondents to the patient and the operating conditions when completing the checklist	27.5	36.2	21.2	8.8	6.2
The effectiveness of the checklist on improving the patient's conditions	20	30	22.5	12.5	15
The degree of acceptance of the checklist by participants	13.8	23.8	30	21.2	11.2
The necessity and importance of the checklist in the operating room	42	38.3	12.3	3.7	3.7
The physical performance of individuals in the operating room	31.2	45	16.2	6.2	1.2
The impact of environmental factors on completion of the checklist	23.5	32.1	23.5	19.8	1.2
Individuals capability in completing the checklist	22.2	50.6	13.6	9.9	3.7
The availability of the checklist	43.2	38.3	11.1	4.9	2.5

The second part of the questions measured the attitude of the participants towards various items of the checklist. None of the participants had a poor attitude toward the checklist items. 11.1% of the participants had a moderate attitude and 88.9% had a good attitude towards the accuracy and applicability of the checklist items.As a major finding, it was found that there was a significant relationship between the field of expertise and the attitude of the participants ($p \leq 0.05$); as, the operating room staff had a more positive attitude towards the checklist items than the anesthesia staff.



DISCUSSION:

ZareiHarmedani et al. conducted a study entitled "surgical safety checklist, challenges faced by operating room staff" in the operating room of Al-Zahra Medical Center, Tabriz (17). They observed and described the process of completion of checklists by operating room staff in 88 surgeries for 4 weeks. In 88 observations, 70% of important items such as surgical site marking, checking the anesthesia equipment, controlling the pulse oximeter or predicting the amount of blood loss during the surgery were performed at inappropriate times. In 52% of the cases, the surgical team members were introduced to each other properly and at the right time; however, in 87.5% of the cases, they did not checked the patient's name and surname, the type of the surgery and the surgical site or checked them at inappropriate times. The nurse controlled the sterile packs and the functionality of the devices, only in 26% of the cases. In 74% of the cases, the nurse did not discuss conducted checks with the surgical team or performed it at inappropriate times. In the present study, this measure was performed by the operating room staff and only 38.5% of the respondents stated that the checklists are being completed at inappropriate times. It seems that the checklist has been often improperly completed by staff in terms of operating room equipment and devices; as they usually control the medical equipment for each surgery, neglectfully. A surgical safety checklist facilitates the routine tasks of personnel and provides a list of standard tasks and controls to prevent the potential forgetfulness of one or more of their duties; however, given the results of the present study, it seems that individuals are not still aware of the importance of the completion of this surgical safety checklist and this may again create problems which preceded the introduction of the standard checklist. For example, the personnel may not check the safety of medical equipment properly and this may endanger the lives of patients as well as the personnel or may interrupt the surgery. On the other hand, negligence in controlling the sterility of the tools and the environment may also cause postoperative infections. MohammadiNasab et al. conducted a retrospective study entitled "assessing the compliance of the staff of Burn Operating Room of Sina Medical Education Center, Tabriz, with the surgical safety checklist" and examined the completion of the checklist by the operating room staff within one month (18). Results indicated that the checklist was completed only for 40% of the patients and this reflected a poor performance. In this study,

it seems that checklists were completed for all patients and were attached to their medical records. The only challenges were probably accuracy and completing checklists properly, at the right time and in the right place; because based on the results, a relatively large percentage of the participants stated that the checklists were not completed at the right time. In addition, nearly half of the participants stated that it would be better to assign the task of checklist completion to one person and this most probably indicates the unwillingness of the staff for doing this task. On the other hand, it seems that in the case of the operating room staff, they have a more positive view of the anesthetic personnel, which will be a major contributor to the challenge. The operating room staff had a more positive attitude towards the checklist than the anesthesia staff and this is a major challenge; because a major part of the checklist is related to the duties of anesthesia staff, the potential risks of drugs and the anesthetic equipment. On the other hand, the main excuse of staff is that some of the items of the checklist are not necessary and this has undermined the importance of the checklist. Therefore, it seems that to resolve this problem, the checklists must be localized to suit the terms and conditions of each hospital or city.

CONCLUSION:

Considering the negligence of staff in completing the checklist, the mission it has been developed for has not been realized well and appropriate training courses should be planned for staff, in this regard. In addition, the causes of non-compliance of staff with the checklist must be discovered and measures such as localization of the checklist with the conditions of each hospital and city should be taken. In addition, instructions must be developed to be added [or if exist, to be improved] to other checklist items on controlling infections and medical equipment, as well as on qualitative monitoring and control of physical environment of the operating room and its relevant processes.

REFERENCES:

1. Targett K. An introduction to clinical governance and patient safety. Occupational Medicine. 2011;61(4):283-285.
2. Nakhleh RE. Patient safety and error reduction in surgical pathology. Archives of Pathology &Laboratory Medicine. 2008;132(2):181-185.
3. Thomas A, Panchagnula U. Medication-related patient safety incidents in critical care: A review of reports to the UK National Patient Safety Agency. Anaesthesia. 2008;63(7):726-33.
4. Affonso D. Cultivating discoveries in patient safety research: Aframework. 37th. Biennial Convention-Scientific Session; 2003.
5. Gawande AA, Zinner MJ, Studdert DM: Analysis of errors reported by surgeons at 3 teaching hospitals.Surgery 2003, 133:614-621.
6. Weiser TG, Regenbogen SE, Thompson KD, et al. An estimation of the global volume of surgery: a modelingstrategy based on available data. Lancet 2008;372:139-44.
7. onsmans C, Graham WJ. Maternal mortality: who, when, where, and why. Lancet 2006;368:1189-200.
8. Christian CK, Gustafson ML, Roth EM, Sheridan TB, Gandhi TK, Dwyer k, et al. A prospectivestudy of patient safety in the operating room. Surgery 2006 Feb;139(2):159-73.
9. Mousavi S, Dargahi H, Hasibi M, Mokhtari Z, Shaham G. Evaluation of safety standards in operating rooms of Tehran University of Medical Sciences (TUMS) Hospitals in 2010. payavard. 2011; 5 (2) :10-17
10. Musavi S. Professional problems in the operating room from employee working in operating rooms inIran. Journal of Guilan University of Medical Sciences 2003: 12(47): 73-9
11. Kable AK, Gibberd RW, Spigelman AD. Adverse events in surgical patients in Australia. Int J Qual Health Care2002;14: 269-76.
12. Bickler SW, Sanno-Duanda B. Epidemiology of pediatric surgical

admissions to a government referral hospital inthe Gambia. Bull World Health Organ 2000;78: 1330-6.
13. Yii MK, Ng KJ. Risk-adjusted surgical audit with the POSSUM scoring system in a developing country. Br JSurg 2002;89: 110-3.
14. McConkey SJ. Case series of acute abdominal surgery in rural Sierra Leone. World J Surg 2002;26:509-13.
15. Ouro-Bang'naMaman AF, Tomta K, Ahouangbévi S, Chobli M. Deaths associated with anesthesia in Togo,West Africa. Trop Doct 2005;35:220-2.
16. Mattke S, Epstein A, Leatherman S. The OECD Health Care Quality Indicators Project: history and background.Int J Qual Health Care 2006; 18(Suppl. 1):1–4.2007.
17. Harmadani A, Safarzadeh SH. Berjis A, Abbasi B, Eterafian S. Safe surgery checklist, challenges faced by operating room staff. The First Student Conduct of Clinical Governance and Continuous Improvement in Quality. Tabriz university of medical sciences. 27-28 ordibehsht,2012.
18. Mohammadinasan P, Nazemi H, Pour ranjbari S, Mosazadeh Y. Study of observance of the referred items according to the safe operation checklist in the burn acne room of Tabriz Sina Hospital. The First Student Conduct of Clinical Governance and Continuous Improvement in Quality. Tabriz university of medical sciences. 27-28 ordibehsht, 2012.