ASSESSMENT OF HOSPITAL PRACTICE TO MAINTAIN

NURSING STAFF HEALTH AND SAFETY

MAALY. Z[1], MAGDA. E[2] & MAGDA. A[3]

[1]Assistant Lecture, Department of Nursing Administration, Faculty of Nursing, Cairo University, Egypt

[2]Professor, Department of Nursing Administration, Faculty of Nursing, Cairo University, Egypt

[3]Assistant Professor, Department of Nursing Administration, Faculty of Nursing, Cairo University, Egypt

ABSTRACT

Maintaining a safe environment reflects a level of compassion and vigilance for worker welfare that is as important as any other aspect of competent health care. It depends mostly on the ability of hospital to manage health and safety system this may done through learning about causes of error and use this knowledge to design systems to take a preventive action. Therefore the aim of this study was to assess hospital practice to maintain nursing staff health and safety and suggesting a system for managing nursing staff health and safety. A sample was consisted of (106) staff nurses, (21) head nurses, all available documents related to nursing staff health and safety management at the specialized pediatric hospital Cairo University. Data were collected by using the following tools modified hospital safety and health management system self-administered questionnaire by (OSHA Act), Auditing sheet developed by the investigator. Results: There was no statistically significant difference between staff nurses and head nurses perception (p=.742) regarding hospital safety and health management system questionnaire. Also there is a visible weakness in managing safety and health as perceived by staff nurses and head nurses regarding safety and health management at (Mean percent for staff nurses = 19.9% & Mean percent for head nurses = 18.5%)Recommendation: create and design environments and systems that promote safe and healthy workplaces by the hospital authority, provide support to health and safety culture, availability of health and safety policies and procedures at every unit, further research should be done concentrated on safety culture assessment, adherences to safety policies and procedures, and effectiveness of health and safety committee and overall HSMS and conduct educational department center.

KEYWORDS: Health and Safety Management System, Nursing Staff Safety and Health, Occupational Risks

INTRODUCTION

Workers employed in the health care sector have to deal with a wide range of activities and environments that pose a threat to their health and put them at risk of occupational disease or work-related accidents. So, the World Medical Association advocates health professionals to recognize safety as one of the core elements for facilitating the development of collective knowledge about unsafe situations, practices and taking preventive action to avoid unnecessary risks are keys to success (Lenert, 2010, and European agency for safety and health at work, 2014).

In 2011, U.S. hospitals recorded 253,700 work-related injuries and illnesses, which compute to a rate of 6.8 work-related injuries and illnesses for every 100 full-time employees. In relation to recorded cases injuries accounted for 93 percent and illnesses accounted for the remaining 7 percent of the recorded cases (Bureau of Labor Statistics, 2013, and

OSHA, 2013). Moreover in relation to one of the life-threatening risk such as blood-borne infections. It was estimated that about 600,000 to 800,000 needle stick injuries occur annually. About 54 percent of reported needle stick and sharp object injuries involve nurses (Exposure Prevention Information Network, 2001)

The importance of building management systems to address safety issues for worker is now incorporated into several Joint Commission standards. Increasingly, hospitals are recognizing the value of integrating their patient safety and worker safety programs. As many of the risk factors that can affect patient safety—such as hospital acquired infection, and workplace violence—can also affect hospital workers. For the reason that health and safety management system is a proven as flexible framework for finding and fixing hazards before they cause injuries and illnesses so it is important for all hospitals to support the implementation of health and safety management system (The Joint Commission, 2012)

Occupational safety and health administration (2013) stated that safety and health management system can help to bring a "culture of safety" within the hospital, with potential benefits for both worker and patient safety. A safety and health management system helps ensure that hazards are early identified, effective controls are put in place, people are adequately trained and empowered, and work processes are designed and carried out in a manner that delivers more consistent safety and health performance.

The most successful safety and health management systems have six "core elements, that should be examined to identify the strong element and the others that need to be strengthened, all of them interrelated and each one necessary to the success of the overall system they are as follow: Management leadership, Employee participation, Hazard identification and assessment, Hazard prevention and control, Education and training and System evaluation and improvement (CCOHS, 2009; the Joint Commission, 2012, and OSHA, 2013).

SIGNIFICANCE OF THE STUDY

It has been noted through the clinical experience by the investigator that nurses providing care in an environment that increasingly complex, face a great deal of situations such as, in adequate resources associated with lack of infection control, lack of educational training, and inadequate personal protective equipment. Also nurses complain from long shift hours and long standing.

These workplace stressors can produce diseases and injuries in nursing work environments. So, managing safety is the way for being healthy at the workplaces which should be maintained in order to reduce occupational risks among health workers. (WHO, 2012) For the reason that nurses have the right to perform their work in an environment without risks to their safety and health it is important to assess hospital's activities for managing safety and health

AIM OF THE STUDY

The current study was conducted to assess hospital practice to maintain nursing staff health and safety.

MATERIALS AND METHODS

Research Question

To achieve the purpose of the current study, the following research question is suggested:

What is current hospital's practice for nurses' health and safety management?

Dose the hospital effectively implementing safety and health management system?

Research Design

A descriptive design was selected to achieve the aim of the present study and answer research questions

Sample

Stratified random sample about 40% from nursing staff according to the following strata (level of education, gender) equal (106) to assess hospital's practice to maintain nursing staff health and safety. Convenience sample of all head nurses(21), Available document related to nursing health and safety management.

Setting

The study conducted at specialized pediatric hospital Cairo University (Abou- El Reesh) which contain ten ICUs with different specialty as the following (two emergency ICU, two ICU for open heart, cardiac rehabilitation, neuro-surgery, ICU medicine, ICU surgery, neonatal surgery, neonatal ICU six wards and three operation theaters.

Tools

Tools that were used to proceed with the proposed study as follow: Modified hospital safety and health management system self-administered questionnaire created by the Occupational Safety and Health Act (OSHA standards) to assess hospital's activities of a safety and health management system. It contains49 questions in six sections: Management leadership (7 questions), Employee participation (12 questions), Hazard identification (11 questions), Hazard prevention and control (9 questions), Education and training (6 questions), Program evaluation and Improvement (4 questions). Using the following scoring system (No will take score (0), I don't know will take score (1), and Yes will take score (2), auditing sheet: developed by the investigator to assess availability of audit related nursing staff health and safety management such as (policies, procedures, protocols, risk assessment and control plan).

Content Validity

Tools were checked and revised by a panel of three experts of nursing administration to test content validity. Modifications were carried out according to panel judgment on clarity of questions and appropriateness of content.

Pilot Study

Pilot study conducted on 10% of the total sample to evaluate the content and test the feasibility, objectivity, clarity, relevancy and applicability of the study tools. Also test retest reliability was calculated to check reliability of the study tools. (cronbach's alpha=.97).

ETHICAL CONSIDERATION

Information and explanation were provided to the subjects and they were asked to sign a consent form. After explaining the nature and the benefits of this research they were free to withdraw from the study at any time. The subjects were coded to guarantee anonymity.

TECHNIQUES FOR DATA COLLECTIONS

Structured interview was utilized to fill out the study tools.

Procedure

As regards managerial arrangement, the researcher prepared a formal request from the post graduate studies affairs of the faculty of nursing, Cairo University directed to the manager of the specialized pediatric hospital Cairo University to obtain the acceptance. Hospital's practice for nurses' health and safety management were assessed by the researcher through conducting a meeting for about (20 minutes) with each nurse and head nurse for each ICU and ward in the hospital to explain purpose and nature of the study and take their acceptance to be included in the study then give her the sheet to fill it and go to another unit to make the same steps and return again to receive the sheet from the head nurses. The Auditing sheet was filled by the nursing manager, assistant nursing manager, one from quality team, two from infection control team and the person who is responsible for occupational safety and health administration in the hospital.

STATISTICAL ANALYSIS

Statistical package of the social science (SPSS version 21) was used for statistical analysis of the data. Descriptive statistics included frequency, percentage distribution, mean and standard deviation was used to show to what extent hospital manage safety and health for staff nurses. The inferential statistics tests of significance were performed to test results; independent t-test used to test the differences, the threshold of significance was fixed at the 5% level (p-value). A p-value > 0.05 indicates non-significant result and the p-value < 0.05 indicates a significant result and the p-value is a degree of significance.

RESULTS

Socio-Demographic and Work Related Data

Table 1: Frequency and Percentage Distribution of Socio-Demographic and Work Related Data among Study Sample (n=106 Staff Nurses) & (n=21 Head Nurses)

Socio Demographic	Staff Nurses		Head Nurses	
	No	%	No	%
Sex				
Male	16	15.1	-	-
Female	90	84.9%	21	100%
Education Level				
Bachelor Degree	-	-	11	52.4%
Technical Nurse	16	15.1%	2	9.5%
Diploma Nurse	90	84.9%	8	38.1%
Years of Experience in Nursing				
1-10	41	38.7-	13	61.9%
11-20	45	42.5	5	23.8%
21-30	19	17.9	1	4.8%
>31	1	.9	2	9.5%
Mean ± SD	13.6±7.1			-
Shift Time				
Morning	19	17.9%	-19.4±9.5	100%
Evening	0	-		
Night	2	1.9%		
All the Times (Variable Shifts)	68	64.2%	21	
Morning & Evening	17	16		
Exposure to Any Accident, Hazard, or Diseases as a Result to Work Place	67	63.2%	11	52.4%
Attending Training Program about Health and Safety Management Issues	24	22.6%	12	57.1%

Table 2: Frequency Distribution for Staff Nurses Responses as Regarding to Hospital Safety and Health Management System Self-Administered Questionnaire Classified in to Six Dimensions. (n=106 Staff Nurses)

Dimensions	No		I do not know		Yes		Mean ± SD
	N	%	N	%	N	%	
Management leadership	356	47.9	258	34.8	128	17.3	4.85±3.82
Employee participation	803	63.1	209	16.4	260	20.5	6.88± 6.94
Hazard identification	716	61.4	224	19.2	226	19.4	6.38± 6.27
Hazard prevention and control	393	41.2	220	23.1	341	35.7	8.51±5.18
Education and training	442	69.5	85	13.4	109	17.1	2.86±3.70
Program evaluation and improvement	194	45.8	188	44.3	42	9.9	2.57±2.31
Total		**54.8**		**25.3**		**19.9**	**32.04±23.39**

Table 3: Frequency Distribution of head Nurses Responses as Regarding to Hospital Safety and Health Management System Self-Administered Questionnaire Classified in to Six Dimensions. (n=21 Head Nurses)

Dimensions	No		I do not know		Yes		Mean ± SD
	N	%	N	%	N	%	
Management leadership	94	63.9	37	25.2	16	10.9	3.71±4.07
Employee participation	180	71.4	18	7.1	54	21.5	6.00± 6.04
Hazard identification	180	77.9	16	6.9	35	15.2	4.00±5.42
Hazard prevention and control	111	58.7	16	8.5	62	32.8	6.67±5.49
Education and training	88	69.8	14	11.1	24	19.1	2.95±3.46
Program evaluation and improvement	49	58.3	25	29.8	10	11.9	2.14±2.52
Total		**66.7**		**14.8**		**18.5**	**25.48±22.09**

Table 4: Frequency Distribution for Nursing Staff Health and Safety Management Audit Sheet n=6 Subject

Items	No		Yes	
	No	%	No	%
Does the hospital have an effective health and safety management system for nurses?	6	100%	-	-
Does the hospital have a written policy for nurse's health and safety issues?	6	100%	-	-
Does the hospital have a clear goal and objectives for health and safety?	4	66.7	2	33.3
Does the hospital have a safety committee team?	2	33.3	4	66.7
If safety committee present, are you member of committee team?	5	83.3	1	17.1
Does the hospital have a human resource development department (educational department)?	5	83.3	1	17.1
Does the hospital implementing training programs for health and safety issues?	5	83.3	1	17.1
Does the hospital implementing error reporting mechanism?	6	100%	-	-
Does the hospital use inspections and exposure assessment checklist to identify hazards?	5	83.3	1	17.1
Does the hospital conduct periodical review to health and safety performance for nursing staff?	4	66.7	2	33.3
Does the hospital have a written prevention job plan for health and safety hazard according to hierarchy of control?	5	83.3	1	17.1

Table 5: Comparison between Staff Nurses and Head Nurses Responses Regarding to

Hospital Safety and Health Management System Self-Administered Questionnaire

Classified in to Six Dimensions. (n=106 Staff Nurses & n=21 Head Nurses)

Dimensions	T	P- Value
Management leadership	.002	.964
Employee participation	1.960	.164
Hazard identification	1.122	.292
Hazard prevention and control	.154	.695
Education and training	.496	.483
Program evaluation and improvement	.516	.474
Total	**.109**	**.742**

There was no statistical significant difference between staff nurses and head nurses regarding six Dimensions of safety and health management system also for total dimension as (t=.109 at p=.742)

DISCUSSIONS

In relation sex majority of staff nurses were female but for head nurses all of them were female. As regarding to level of education for staff nurses majority were diploma nurses and the rest were technical nurses. For head nurses half of them were bachelor degree. In relation to years of experience in nursing near half of staff nurses and head nurses their years of experience ranged between 11 to 20 years of experience. Near two third of staff nurses and half of head nurses mentioned that they exposed to accident, hazard, or diseases as a result to work condition. This may be due to in adequate training program about health and safety issues as presented in the current study which showed that majority of staff nurses mentioned that they don't attend any training program about health and safety. Also it may be due to lack of maintenance for equipment and inadequate supply.

Aly (2002) recommended that hospital committees such as: the occupation health and safety, infection control should have a definite active role, identified, agreed upon, and supported totally by hospital administrator. This administrative support should be through allocating adequate financial resources for provision of the needed equipment, facilities and supplies to ensure safety and comfort for staff and patients, as well as for training the hospital staff.

regarding assessment of hospital practice to maintain nursing staff health and safety it was found that In relation to management leadership dimension it was concluded that mean percent of total dimension was as the following near two third of head nurses and near half of staff nurses mentioned that hospital management did not manage safety and health for nurses effectively because it was found that About forty percent of staff nurses and head nurses mentioned that hospital management did not implement a written policy supporting and mandating the safety and health management system also there is a lack of commitment about safety practice and communication about safety goals.

Effective team communication and coordination are recognized as being crucial for improving quality and safety in acute medical settings such as ICUs (Alonso et al., 2006) & Cuthbertson, Flin & Reader, 2007). Consequently, good teamwork is essential for the delivery of effective, efficient care in any clinical setting (Guise & Segel, 2008).

Management leadership is critical to an effective safety and health management system. In an evaluation involving over 270 safety and health experts, management leadership and employee involvement consistently ranked as the two most important elements of a safety and health management system. (OSHA, 1998)

As regarding to employee participation dimension it was found that majority of head nurses and near two third of staff nurses mentioned that they not involved at any safety management issue. Because hospital management did not give the staff the opportunity to share in managing safety through assigning minimum tasks to implement it such as assessing training needs, evaluating performance, conducting job hazard analyses and investigating incidents. They also did not take their opinion in any decision related to safety and health management.

It was mentioned that the level of worker representative involvement in driving up health and safety performance could yet be another factor resulting in an improvement regarding fatality rates. A key factor to ensure success in reducing workplace fatalities was to engage and partner all relevant parties such as the government, the safety and health comity (SHC), employers, unions, professional organizations, insurance providers, educational institutions, and employees. (Alli, 2008 & David, 2012)

For the hazard identification dimension it was concluded that mean percent for the total dimension as the following majority of head nurse and sixty one percent of staff nurses perceived that hospital did not perform hazard identification it may be due to lack tools to be used for assessing hazards in the work place, also it may be related to hospital culture that act as reactive not proactive for hazards for example the hospital did not conduct periodical assessment and maintenance for equipment, supply and work environment in order to anticipate potential hazards they move when hazard already occur only. Also the hospital did not implement incidence reporting system to collect and analyze causes of incident occurrence.

Levine, Toffel and Johnson (2012) in a study concluded that inspections conducted by California's Division of Occupational Safety and Health (Cal/OSHA) reduce injuries with no job loss. The study showed a 9.4% drop in injury claims and a 26% average savings on workers' compensation costs in the four years after a Cal/OSHA inspection compared to a similar set of uninspected workplaces. Also Indicators of OHS, such as near misses as well as reported and unreported incidents, provide important feed-back to organizations about deficiencies in the management of OHS (Reiman and Pietikäinen, 2012).

The provision of OHS training, information, tools, and resources that promote preparedness to act and provide relevant response plans are key leading indicators of OHS (Health and Safety Executive, 2005; Lingard et al., 2011).

For the hazard prevention and control dimension it was found that two third of head nurse and forty percent of staff nurses perceived that hospital did not have a hazard control plan in place. This may be related to absence of safety committee in the hospital, unclear responsibility about safety management and inadequate preparation for managing safety.

Hazard control is the heart of an effective Injury and Illness Prevention Program. If hazards occur or recur, this reflects a breakdown in the hazard control system. The hazard control system is also the basis for developing safe work procedures and injury/illness prevention training... (Health and Safety Executive (HSE), 2008 & Alberta, 2015)

For education and training dimension it was concluded that majority of head nurse and staff nurses reported that nursing staff don't understand the elements and their own role in the safety and health management system how to participate in it it may be due to unclear responsibilities and lack of communication between hospital management and employee. Also due to lack of training need assessment and absence of educational department center in the hospital.

Huang, Ho, Smith and Chen, 2006. Reported that effective training assists workers to have a sense of belonging

and thus, more accountable for safety in their workplace. In addition, Vassie and Lucas (2001) indicated that safety programs are crucial to all workers and an important aspect of effective health and safety management

One way industry seeks to limit the occurrence of, and costs associated with, workplace injury is through the presentation of safety training. Safety training has been credited with as much as a 42% return on invested capital when included with the implementation of a safety management system. As well, safety training may further increase return on investment (ROI) by limiting yearly bottom-line losses (Barfield, 2004). Safety training is also suggested to positively benefit worker lifestyles by increasing productivity, alertness, and safe behaviors at work. Safety training may also increase workers' feelings of improved health and the ease with which the worker's home responsibilities are fulfilled (Circadian Health, 2005).

Finally in relation to all safety and health management program dimensions it was found that there is unsatisfactory and a visible weakness for implementing safety and health management program as perceived by staff nurses and head nurses at (Mean percent for staff nurses = 19.9% & Mean percent for head nurses = 18.5%) So more focus in managing safety and health program may be warranted in order to reduce risk for injury and illness and improve safety and health for staff nurses.

Numerous studies have examined the effectiveness of injury and illness prevention programs at both the establishment and corporate levels (e.g., Alsop and LeCouteur, 1999; Bunn et al., 2001; Conference Board, 2003; Huang et al., 2009; Lewchuk, Robb, and Walters, 1996; Smitha et al., 2001; Torp et al., 2000; Yassi, 1998). This research demonstrates that such programs are effective in transforming workplace culture; leading to reductions in injuries, illnesses and fatalities; lowering workers' compensation and other costs; improving morale and communication; enhancing image and reputation; and improving processes, products and services. The studies also highlight important characteristics of effective programs, including management commitment and leadership, effective employee participation, integration of health and safety with business planning and continuous program evaluation. They suggest that programs without these features are not as effective (Shannon et al., 1996, 1997; Gallagher, 2001; Gallagher et al., 2003; Liu et al., 2008).

CONCLUSIONS

The present study concluded that there is unsatisfactory level of implementing safety and health management program that showed a relative weakness in all safety and health management program dimensions as perceived by staff nurses and head nurses at (Mean percent for staff nurses = 19.9% & Mean percent for head nurses = 18.5%) So it was crucial for researcher to suggest a system for managing nursing staff safety and health in order to reduce risk for injury and illness and improve safety and health for staff nurses.

RECOMMENDATIONS

Based on the previous findings of the present study, the following recommendations are suggested.

- Create and design environments and systems that promote safe and healthy workplaces by the hospital authority.

- Managers should provide support to health and safety culture,

- Availability health and safety policies and procedures at every unit,

- Further research should be done concentrated on safety culture assessment

- Ensuring the presence of safety and health committee to facilitates the implementation of safety and health activities.

- Implement and maintain education and training programs aimed at increasing awareness of health and safety issues

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