Occurrence, and Preventive Measures of Injuries by Needles and Sharp Objects in Governmental Hospitals, (AL- Amara City, Iraq)

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ABSTRACT

Objectives: 1. to investigate the occurrence and frequency of injuries by needles and sharp objects among health care workers in in AL- Amara city, Iraq , 2. to identify the factors that may contribute to these injuries, 3. to explore preventive measures and intervention to deal with these injuries. A descriptive exploratory survey was conducted in Al-Amarah city hospitals during the period from January 2018 to May 2018. It was use of non-probability sample (purposive) of 135 health care workers , the data was collected throw the interview technique by using of constructed questionnaires, which consist of 3 parts. The result showed that most of health care workers in the sample are exposed to needle stick or sharp injury in the last 12 month, 108 participants out of 135 reported they have been needle stick and sharp injuries (80%) , the majority of incidence occurred by syringe needle (46.3%). Most of injuries occur during use the needle or sharp injuries (n= 37 , 34.3%) .The majority of (NSI) happened during normal injection procedure (n= 36,33.3%) . The main causes of injuries was workload (n=76, 70.4%).

Keyword: *Injuries, Needles and Sharp, Preventive*

INTRODUCTION

Injuries because needles or sharp objects considered the most important work risks [1]. It is a dangerous phenomenon where statistics estimate that there are three million health care workers exposed to blood carrying an infection source every year [2]. Globally, these injuries caused 16,000 hepatitis C, 66,000 hepatitis B, and 200 to 5000 human immunodeficiency virus (HIV) infections per year. More than 90% of these infections are occurring in Third world countries, and most are preventable [2, 3]. There are studies report the risks of occupational blood-borne viruses (BBV) infection for HCWs in developed countries where a range of prevention measures have been applied. In contrast, the condition for HCWs in Third world countries is not well registered, and their safety is neglected issue [3]. It is worth mentioning that More than two thirds of health care workers have contact with blood or body fluids throughout their working lives [4]. Based on study the cost of one injury without infection about three thousand dollars [5]. The case of infection caused by injury reach one million dollars or more spend in tests, follow-up, lost time and disability payments. Liver transplantation due to hepatitis C costs hundreds of thousands of dollars. Other costs of injuries include worker reparations, overtime, and expenses related to the recruitment and training of staff to replace the worker who is sick [5]. While there are no financial accounts for citation here, there should be a cost applied to replace nurses and other health care workers who have chosen to leave the care environment because of concerns about needle sticks [1]. Programs and studies carried out by the International Council of Nursing and the World Health Organization on the prevention of injuries by needles and exposure to blood borne infection concluded the need to work on the

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use of safety tools for medical interventions, as well as the training on general precautions which have proved effective for the prevention of over 80% of injuries will assure that nurses can continue to provide quality patient care [6]. About 62% - 88% of injuries are preventable [3]. The world is suffering from a lack of healthcare workers, especially nurses, in the United States, for example in USA the nursing shortage may reach 800,000 vacant positions by 2020 [2]. There is a lot of suffering after the injury may be physical, psychological or emotional to the injured person and waiting for the result of lab tests after the injury lead to emotional disorder [(2)]. Moreover there is devastating need for nursing and medical services in Iraq. Nurses shortage especially academic nurse is an important issue in AL-Amara city, Iraq, thus there is an urgent need for the development of policies to prevent injuries to maintain nursing staff, technicians and physicians. In study conducted in Baquba City , Iraq to explore prevalence of needle stick and sharp objects injuries among 240 Health Care Workers (HCW), study suggested 46.6% injuries among physicians and 18.7% injuries among nurses [7.] This study would provide information to the policy makers in regard to the frequency of injuries, the sources of these incidents, action taken to prevent, and the factors contributing to these incidents. Policy makers can use these data to develop further measures and policies that would help in creating a safe workplace that could be free or with minimal occurrence.

MATERIALS AND METHOD

A descriptive exploratory survey in injuries by needles and sharp objects among health care workers in AL-Amara city, Iraq 2018. Non probability Purposive sample of 135healthcare workers 32 Physicians, 23 lab technicians and70 nurses was selected for the study, which consists of three parts. Part (1), demographic data form, It is compressed of eight item which are concerned with the healthcare workers demographic characteristics of healthcare workers age, gender, educational level of healthcare workers, number of experience years, job title, place of the work and number of training courses on the risk of injuries by needles and sharp objects among healthcare worker and part (2), Occurrence and contributing factors . Included 5 items all questions are multiple choice Part (3) Preventive measures included 7 items all questions are yes or no. The content validity of the study instrument was determined by presenting it to a panel of 12 experts both from the academia and its reliability was A back translation was made by two linguist to back translate the study instrument to its original language; English language. There was no remarkable mismatching between the version translated to Arabic language and the original version in English language. Data were analyzed through the use of simple descriptive statistical data analysis approach (frequency, percentage, mean of score) and inferential analysis procedures (chi-Square) were used for the data analysis.

RESULTS AND DISCUSSION

The results of table (1) show that the majority of age group of the study sample are within (25-29) years (34.8%). The above table also shows that the majority of participants are male (56%). Concerning the years of experience , half of participants who are in the group (1-5) years (50.4%) , Regarding educational qualification , more than one third of participants are bachelor's degree(35.6%) ,About job title more than half of participants are nurses (59%) , With respect to current area working more than one fifth that work in the Operation Room (22.2%). A training course (NSI) approximately half of participants are in the none training course (48.9%), About hospitals samples distributed equally among three hospitals ; Al-Sadr , Al-Zahrawi , and Missan pediatric hospital (n=45; 33.3%). Table (2) presents a description of the participant's experience of needle and sharp objects injuries such as frequency of injuries and Type of needle and sharp objects, Time of occurrence, Procedures, and main causes. 108 participants out of 135 reported they have been injuries (80%) , the majority of incidence occurred by syringe needle (46.3%). Most of injuries occur during use the needle or sharp injuries (n= 37 , 34.3%) .The majority of injuries happened during normal injection procedure (n= 36,33.3%) . The main causes of injuries was workload (n=76, 70.4%). Table (3) a description of the preventive measures related to injuries that taken by health care workers to prevent infections. The majority of health care worker that injured with needles and sharp objects had been disinfect the area with an alcohol swab post exposure (N= 105 , 97.2%) , followed by those who had been taken hepatitis B vaccine pre exposure (N= 82, 75.9%) , those who had been wear gloves during injury (N=82, 75.9%) , those who had been allow injury to bleed (n=65, 60.2%) , those who received NSI package (lab tests) after injury (n=42, 38.9%) , those who had been Notify manager or supervisor of the exposure (n=40,37%) . those who had been Wash injury with soap and water(n=31, 28.7%).

According to the result in table 2 the occurrence rate of NSIs is 80%, this result is agreed by study done by Amini (90%). [8]. Our research showed the most common sharp tools use was syringe needle 46.3% and it's similar to the study obtain by Mitchell in 2015 who found that syringe needle53% was the most common used objects [9]. the majority of injuries time occur during the use of the needle or sharp objects (34.3%) similar to the result obtain by Mitchell which was (33.0%) [9] . Our study showed that the most common procedure were normal injections (33.3%) table 2. This result inconsistent with Abu-Rmeileh 2012 who find the wound suturing is the most common (33.5%) [10]. Based on this study the main cause of injuries was workload 70.4% table 2. This result disagree with study done by Aderaw in 2013 which showed that lack of sleep and tiredness were the major causes of injuries [11]. The prevalence of injuries by needles and sharp objects among health care workers, especially under the current circumstances of increased traumatic injuries, psychological disturbance and economic distress, will be higher than that of neighboring countries such as KSA and Jordan, despite of the fact that they are also developing countries as well Furthermore large one setting investigated were teaching hospital where lower experience may play a major role in the incidence of needle stick injuries. In this study most of health care workers had vaccinated against hepatitis B 75.9 % table 3. This similar to study done by wicker S. in 2007 who found that 78.2%take the vaccine [12] and also ascertained Ebrahimi in 2007 [13] . The health care workers allow the injury to bleed without making pressure 60.2% table3. This result agree with study done by Jahangiry in 2016 who find that 99% allow the injury to bleed. but didn't wash injury with soap and running water 71.3% table 3. This result disagree with result obtain from study done by Jahangiry in 2016 who find that 75% wash injury with soap and running water; (37.0%) from injured health care workers notify manager or supervisor of the exposure table 3. This result agree with study obtain by Kanlee in 2005 showed 40.8 % [(15)]. The largest proportion of health care workers were wearing gloves (75.9%) table 3. This result agree with study done Jahangiry M. 2016 who find that (70.4%) HCWs wear gloves [14]. Finally the highest number of health care worker did not made lab test after injury (61.8%) table1.and this disagree with study done by Kommogldmo in 2016. It is important to mention that the Iraqi health regimen is different from other countries , there is no clear policy to establish basic rules to prevent needle stick injuries and sharp objects to protect the health care workers

Table 1. Socio-demographic and job characteristics of respondents

Variables	Frequency	Percent
Age		
20-24	23	17.0
25-29	47	34.8
30-34	20	14.8
35-39	25	18.5
40-44	11	8.1
45-49	6	4.4
50-54	3	2.2
Gender		
Male	76	56.3
Female	59	43.7
Years of Experience		
1-5	68	50.4
6-10	22	16.3
11-15	27	20.0
16-20	12	8.9
21-25	4	3.0
26-30	2	1.5
Basic Educational		
High school	26	19.3
Associate degree	44	32.6
Bachelor's degree	48	35.6
Master's degree	4	3.0
Doctorate degree	13	9.6
Job title		
Physician	32	23.7
Nurse	80	59.3
Technician	23	17.0

Table 2. Occurrence, and Distribution of respondents by injuries, type of needle, time of occurrence, procedure, and main cause

Variables	frequency	percentage
Occurrence	108	80
Type of needle , and sharp objects Syringe needle Intravenous catheter Suturing needle Scalpels and scissors Ampoules Others	 50 7 23 4 17 7	 46.3 6.5 21.3 3.7 15.7 6.5
Time of occurrence Opening the needle or sharp objects During use the needle or sharp objects Recapping Break the ampoule While putting the item into the disposal container After use and before disposal of the tool	 7 37 34 17 4 9	 6.5 34.3 31.5 15.7 3.7 8.3
Procedures Normal injection Suturing Blood collection Incision and cut Others	 36 32 22 15 3	 33.3 29.6 20.4 13.9 2.8
Main cause workload Inappropriate training Handling uncooperative patient Tired and lack of sleep Busy and not attention	 76 9 13 6 4	 70.4 8.3 12.0 5.6 3.7
Total	108	100

Table 3. PREVENTIVE MEASURES

Variables	frequency	percentage
Vaccinated for hepatitis B. Yes No	 82 26	 75.9 24.1
Allow injury to bleed. Yes No	 65 43	 60.2 39.8
Wash injury with soap and water. Yes No	 31 77	 28.7 71.3
Disinfect the area with an alcohol Swab. Yes No	 105 3	 97.2 2.8
Notify your manager or supervisor of the exposure. Yes No	 40 68	 37.0 63.0
Did you wearing gloves during injury Yes No	 82 25	 75.9 23.1
Have you done lab tests after injury (Receive NSI Package) . Yes No	 42 66	 38.9 61.1
Total	108	100

CONCLUSION

The majority of health care workers are exposed to NSI and sharp objects (80%). Some factors play an effective role in NSIs while others have methods to prevent them. Therefore, the recommendations in research, education, practical application and policy regulations are necessary and urgent to be applied to reduce injuries and create a healthy working environment.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Nursing/ University of Misan, Iraq and all experiments were carried out in accordance with approved guidelines.

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