

Prevalence of Sharps Injuries among Nursing Staff at hospitals in Kirkuk city

انتشار الاصابات الناتجة عن الادوات الحادة لدى الملاكات التمريضية في مستشفيات مدينة كركوك

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الخلاصة:

خلفية البحث: يمكن أن تنتقل الأمراض المعدية بشكل غير مباشر للعاملين في الرعاية الصحية، وخاصة الطاقم التمريضي من خلال الاستخدام المتكرر أو الاستخدام الخاطئ للإبر والأدوات الحادة.

الأهداف: تهدف الدراسة إلى تقييم مدى انتشار الاصابات الناتجة عن الأدوات الحادة وإجراءاتها الوقائية لدى الملاكات التمريضية في مستشفيات مدينة كركوك.

المنهجية: دراسة وصفية بتصميم كمي في مستشفيات مدينة كركوك للملاكات التمريضية للفترة من ١ / شباط / ٢٠٢٠ حتى ١ / ايلول / ٢٠٢٠. اختيرت عينة غير عشوائية (حدثية غير احتمالية) مكونة من ١٦٦ ممرض و ممرضة من العاملين في مستشفيات مدينة كركوك من كلا الجنسين. تم تصميم استبيان من قبل الباحث لتحقيق اغراض الدراسة. الاستبيان مكون من اربعة اجزاء: الجزء الاول البيانات الديموغرافية للمشاركين ، الجزء الثاني الادوات والمعدات الحادة المسببة للإصابات والجروح، الجزء الثالث العوامل المسببة للإصابات الناتجة عن الادوات الحادة . الجزء الرابع توافر اجراءات الحماية لمنع الاصابات الناتجة عن الادوات الحادة. وتم جمع البيانات باستعمال طريقة الملئ الذاتي من قبل الملاكات التمريضية. تم تحليل النتائج من خلال تطبيق التحليل الإحصائي الوصفي وتحليل البيانات الإحصائية الاستدلالي.

النتائج: اشارت النتائج الى ان اكثر الادوات المسببة للإصابات الناتجة عن الادوات الحادة هي ابر المحاقن (السررنجات) و بنسبة (٥٢ %)، و الادوات الزجاجية (امبولة) و بنسبة (٢٥ %).

الاستنتاج: استنتجت الدراسة ان اكثر العوامل المسببة للإصابات الناتجة عن الادوات الحادة هي كثرة حقن الادوية (٨٩ %) و كثرة المرضى الراقدين (٨٢ %) و قلة الدورات التدريبية للملاكات التمريضية.

التوصيات: توفير ادوات الامان و الحماية عند التعامل مع الابر او الادوات الحادة كالسررنجات ذات الغطاء الذاتي و قاعدة خاصة لمسك غطاء الابر.

الكلمات المفتاحية: انتشار، الاصابات الناتجة عن الأدوات الحادة ، التدابير الوقائية ، الملاكات التمريضية.

ABSTRACT:

Background: infectious disease can transmitted indirectly to the health care worker especially nursing staff through multiple or misuse of needles and sharp instruments.

Aims of the study: the study aimed to assess the prevalence of sharps injuries and its protective measures for nursing staff at Kirkuk city hospitals.

Methodology: A descriptive design was carried out at Kirkuk city hospitals for nursing staff from 1st of February, 2020, up to the 1st of September, 2020. A non-probability (convenience sampling) of (166) nurses both male and female from selected working site in the hospital were selected. The questionnaire was designed by the researcher to achieve the purpose of the study. The questionnaire was consisted of four parts: part I: the demographic data of the participants, part II: the Equipment associated sharps injuries. Part III: Factors associated with sharp injuries. And part IIII: Availability of protective measures for sharp injuries. The data were collected through the use of self-administration technique. They were analyzed through the application of descriptive statistical analysis and inferential statistical data analysis.

Results: The results indicated that the most equipment that cause sharp injuries were syringe needles (52%), and glasses such as ampoules (25%).

Conclusions: The study concluded that the most factors causing sharp injuries were frequent injectable drugs (89%), the crowded patients (82%), and the inadequate training sessions for nursing staff.

Recommendations: Providing the necessary and safety tools to prevent injuries such as syringes with self-cover and a special base for needle cover.

Keywords: prevalence, Sharps Injuries, protective measures, nursing staff.

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INTRODUCTION

Health care workers are exposed to simple and deadly microorganism frequently due to the incorrect use of needles, syringes and sharp instruments. These pathogens can cause serious diseases that may lead to death. Nursing staff are the health care workers most vulnerable to infectious diseases. Every year, hundreds of thousands of health care workers are exposed to deadly diseases like HIV and hepatitis C through needles stick and sharps

injuries. With today's technology, nurses no longer need to face such high risks ⁽¹⁾. According to World Health Organization, three million people are annually affected by needle stick injury, of which 90% are occurred in developing countries ⁽²⁾.

Sharp instruments used by nurses include syringes needle, sutures needle, glass materials, cannula needles, surgical blades and other sharp instruments causing injuries and wounds. Repeated injuries to nursing staff causes stress in their job. Researches demonstrate that being exposed to infectious diseases and needle stick injuries cause stress to the nurses ⁽³⁾. National Occupational Safety Association of America introduced nursing as the head of the 40 top stressful professions. Various stressful factors are propounded in this occupation; for example infectious diseases due to nurses' contact with sharp materials as needle which expose them to the risk of infectious disease due to liquids and blood ⁽⁴⁾.

AIMS OF THE STUDY:

1. Assessing the most sharps instruments causing injuries.
2. To identify factors that leading to sharps injuries.
3. To identify the protective measures for sharp injuries.
4. Find out the association between sharps injuries and some demographic data of the nurses.

METHODOLOGY

A descriptive design was carried out at Kirkuk city hospitals for nursing staff from 1st of February, 2020, up to the 1st of September, 2020 to assess Prevalence of sharps injuries and its protective measures for nursing staff at Kirkuk city hospitals. A non-probability (convenience sampling) of (166) nursing staff both male and female from selected working site in the hospital were selected. The questionnaire was designed by the researcher to achieve the purpose of the study. The questionnaire was consisted of four parts: part I: the demographic data of the participants (6) items, part II: the Equipment associated sharps injuries (5) items the participant chooses the most equipment associated sharps injuries. Part III: Factors associated with sharp injuries (11) items. And part IIII: Availability of protective measures for sharp injuries (8) items. The data were collected through the use of self-administration technique from the period 1st April 2020 to 1st May 2020. Informed consent was granted from nurses for participation in the present study was obtained.

The results were analyzed through the use of Statistical Package for Social Science (SPSS) version 20. The statistical procedures which were applied for the data analysis and assessment of the results include the following: descriptive statistics (frequencies, percentages) and statistical inferential (chi-square test) in order to find the association between sharps injuries and some demographic data.

RESULTS:

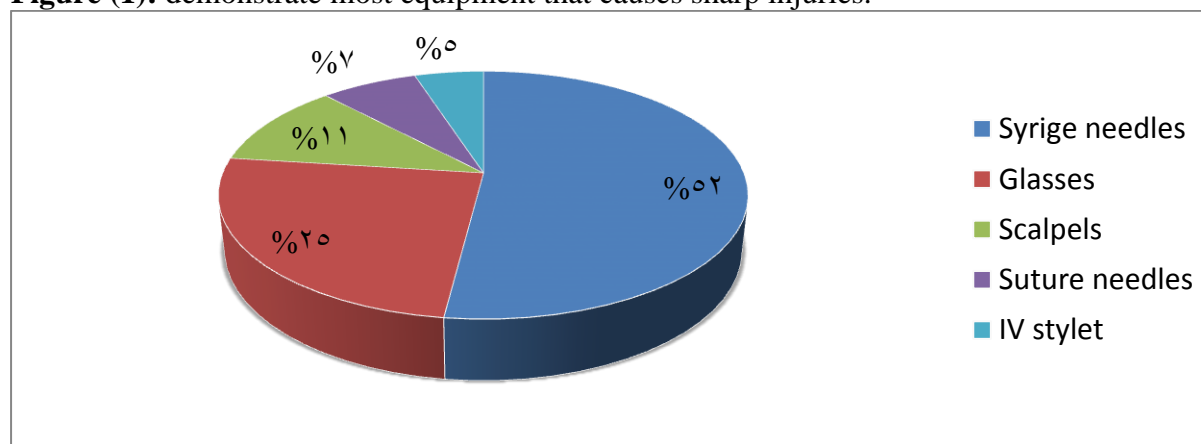
Table (1): demographical data of the samples (n=56)

No.	Variables	F	%
1	Age		
	18-29 years	108	65.1
	30-39 years	48	28.9
	40-49 years	10	6.0
	Total	166	100
2	Gender	F	%
	Male	90	54.2
	Female	70	45.8

	Total	166	100
3	Educational background	F	%
	secondary nursing school	12	7.2
	diploma in nursing science	34	20.5
	bachelor in nursing science	120	72.3
	Total	166	100
4	Hospital	F	%
	Azadi Teaching Hospital	44	26.5
	Kirkuk General Hospital	88	53.0
	Pediatric Hospital	34	20.5
	Total	166	100
5	Work site	F	%
	Medical and Surgical Wards	28	16.8
	Intensive Care Unit	66	39.8
	Hemodialysis Unit	14	8.4
	Emergency Unit	22	13.3
	Operational Room	36	21.7
	Total	166	100
6	Nurses experience in years	F	%
	1-10 y	140	84.3
	11- 20 y	26	15.7
	Total	166	100
7	No. of training session in sharp and needles injury	F	%
	Present	46	27.7
	Not Present	120	72.3
	Total	166	100

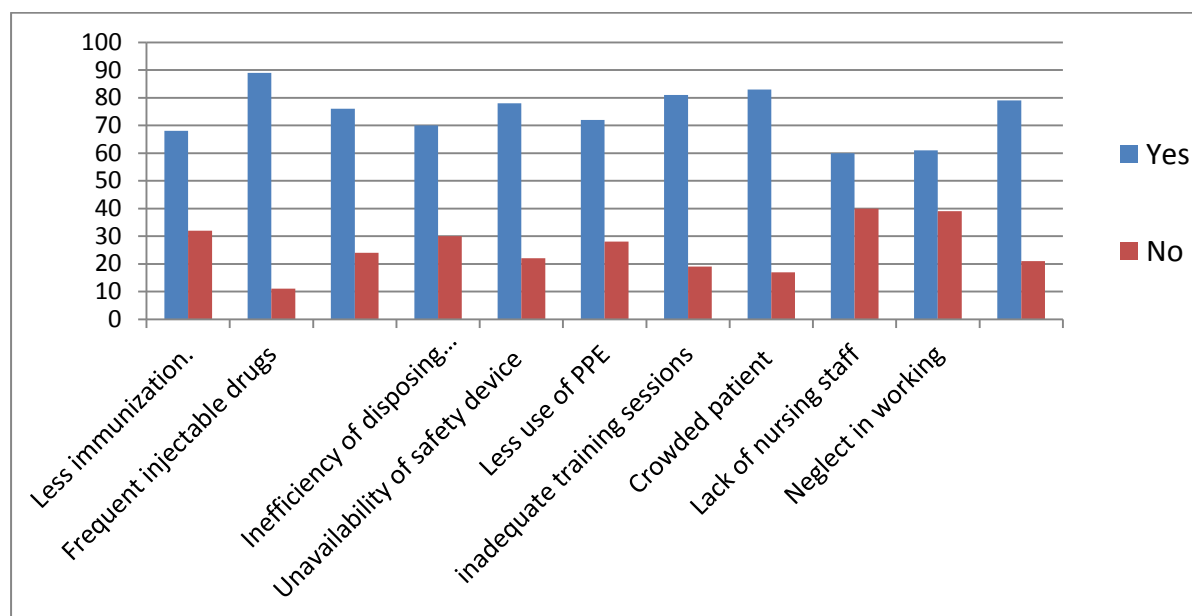
Table (1): demonstrates that the majority of the samples were age group 18-29 years (65.1 %), most of them male (54.2 %), (72.3 %) have bachelor in nursing science, (53 %) working in Kirkuk general hospital, as work site most of sample were Intensive Care Units (39.8 %), samples have 1-10 years of experience in nursing profession (84.3 %), and most of samples (72.3 %) were not participating in training session related to sharps and needles injury.

Figure (1): demonstrate most equipment that causes sharp injuries.



This figure shows that most equipment causing sharps injuries were Syringe needles (52 %), (25 %) were glasses equipment, (11 %) scalpels, (7 %) suture needles, and IV stylet were (5 %).

Figure (2): demonstrate the factors that associate with sharp injuries.



This figure shows that most factors that cause sharps injuries were (Frequent injectable drugs, inadequate training sessions, crowded patients, and inappropriate report after injuries).

Table (2): Availability of protective measures for sharp injuries

No.	Items	Available		Not Available	
		F	%	F	%
1	Handle and prepare of needles and sharps that must be take place in a special room	76	45.8	90	54.2
2	Use safety needles and syringe	84	50.6	82	49.4
3	Dispose of sharps and needles in a special container	140	84.3	26	15.7
4	Establish a blood borne pathogen control program.	42	25.3	124	74.7
5	post-exposure medical evaluations	42	25.3	124	74.7
6	Secure sharps containers during transport to prevent spilling.	108	65.1	58	34.9
7	Follow standard precautions, infection prevention, and general hygiene practices consistently	72	43.4	94	56.6
8	Establish session about risk of sharp injuries	56	33.7	110	66.3

Table 2 shows that most protective measures to prevent sharps injury were not available.

Table (3): Association between factors associate with sharp injuries and demographical data of nurses

No.	variables	total	Chi-square	Crit. χ^2	Df.	Sig.
1	Age	166	9.25	5.99	2	S.
2	Gender	166	0.01	3.84	1	NS.
3	Educational Level	166	10.7	5.99	2	S.
4	Training session	166	0.27	3.84	1	NS.

S. = Significant, NS. = Not Significant

This table shows that there is significant difference between (age and educational level) and factors associate with sharp injuries at P-value (≤ 0.05), the results also shows that the difference between (Gender and training session) was not significant at P-value (≤ 0.05).

DISCUSSION:

Sharps injuries and its protective measures are important occupational hazards leading to infections with blood borne pathogens; such as HBV, HCV, or HIV ⁽⁵⁾. The study aims to assess the prevalence of injuries resulting from sharp instruments, the samples of the study were nursing staff working in the clinical places in which medication are administered and nursing interventions performed, through nursing interventions, nurses may experience injuries and wounds resulting from sharp instruments. Injuries caused by sharp instruments are mostly caused by syringes needles, suture needles, glasses, and surgical scalpels that are frequently used by nurses in their work. Accidental sharp injury and needle stick were most frequent in wards, it is important to improve the knowledge about the prevalence and reasons for such injuries to find ways to prevent the injuries ⁽⁶⁾. Repeated handling of drugs and sharp instruments may lead to the transmission of a microbial infection that the nurses contract while they are working. The results of the study concluded that the most common sharp instruments that lead to wounds and injuries were syringe needles and glasses such as ampules due to the frequent uses of medications prescribed to patients, the large number of patients, the lack of educational programs related to sharp injuries, in addition to the lack of provision of safety tools when administering medications and mishandling of ampoules and Glass tools, which leads to frequent injuries among the nursing staff. This results in line with the study of ⁽⁷⁾ that disposable syringes were the most common medical equipment that caused sharp injuries. As stated by Galougahi needle stick injury is defined as a penetrating wound typically induced by a needle point or other sharp instrument or object which could be infected with another person's secretions ⁽⁸⁾.

The results of the study concluded that the absence of a special program for reporting injuries, the limited availability of vaccines for the injured, and the lack of use of a personal protection equipment leads to the continuation of injuries with their increasing cases. The risk of transmitting infection from patients to health workers, especially the nursing staff is tool-borne diseases especially hepatitis B virus infection, hepatitis C virus, and acquired immunodeficiency disease (AIDS).

The results also showed that there is a significant relationship between age and academic level with the factors associated with sharp injuries. And that the relationship between sex and training sessions with the factors associated with sharp injuries was not significant.

CONCLUSIONS

The study concluded that the majority of nursing staff reported that most equipment causing sharps injuries were Syringe needles and glasses tools. And most factors cause's sharps injuries in the hospitals were frequent injectable drugs, inadequate training sessions, crowded patients, and inappropriate report after injuries. Also the protective measures to prevent sharps injury in the hospitals were mostly not available.

The results also demonstrate that the difference between (age, educational level) and factors associate with sharp injuries was significant, and difference between (Gender, training session) and factors associate with sharp injuries was not significant.

RECOMMENDATIONS:

1. Providing the necessary and safety tools to prevent injuries such as syringes with self-cover and a special base for needle cover.
2. Establishing statistical centers in Iraq about number of health care staff with communicable diseases caused by sharp instruments.
3. Provide a report system regarding injuries caused by sharps in hospitals.
4. Encourage all health care workers, especially the nursing staff, to take vaccines for infectious diseases.
5. Continuous education of the nursing staff about communicable diseases, especially those resulting from sharps injuries.

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