ORIGINAL | INDEPENDENT JOURNAL OF ALLIED HEALTH SCIENCES

IJAHS-0263

KNOWLEDGE AND PRACTICES OF NURSES REGARDING INJECTION SAFETY AT BAHAWAL VICTORIA HOSPITAL (BVH) BAHAWALPUR, PUNJAB

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Date of Received: 28/01/2019 **Date of Acceptance:** 02/02/2019

ABSTRACT

Introduction: World health organization reports that among 35 millions of health workers, two million get infectious diseases every year from which a huge majority consist of Hepatitis B, C and HIV AIDS. The employees in the health sector professionals like nurses carrying out their duties are repeatedly expose to these risk and potential sources of infection to their co-health care providers their patients and public. **Methodology:** The study was conducted at Bahawal Victoria Hospital (BVH) Bahawalpur Punjab, from April 2015 to June 2015. This descriptive cross-sectional study is based on the nurses involved in patient care in selected units of hospital where injection practices are most common, 383 nurses out of 420 involved in direct patient care the study population 178 was sample size. From the sampling frame of 383 nurses 178 were selected by convenience sampling technique, Sample size was estimated on the prevalence rate of unsafe injection practices in Pakistan 12% and estimated sample size 178 while 95% is confidence interval. The ethical approval from an internal review board of Health Services Academy will be obtained to conduct the study. Afterward, permission from the medical Superintendent of Bahawal Victoria Hospital (BVH) Bahawalpur will be obtained. Written informed consent will be obtained from the persons before filling the questionnaire. Data was entered and analyzed through SPSS IBM version 21.0 **Results:** Majority of the respondent had knowledge of disease transmitted by unsafe injection 94.4% study population mentioned HIV/AIDS, hepatitis B & C respectively can be transmitted through unsafe injection practices. Only 68 (38.2 %) of participants wash their hands with soap and water before given injection for self-protection and patients benefit and about 110 (61.8%) respondent did not wash their hands before injection administering. About 30.9% study population was used sterile gloves before and after injection administering and other 123 (69.1%) nurses not prefer to wear gloves. **Conclusion:** Poor injection practices lead to large scale blood born pathogen transmission. All other unsafe injection practices, injectable medication or vaccination are the treatment of disease, not be the vector of disease.

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Key words: Injection safety, infection control, Hepatitis B,C & HIV/AIDS, nurses practices

Article Citation: Akhtar T, Buriro A N, Ahmed F, Noonari A A, Siyal J F, Nadeem. Knowledge and Practices of nurses regarding injection safety at Bahawal Victoria Hospital (BVH) Bahawalpur, Punjab. **IJAHS,** Jan-Mar 2019;01(01-07):42-48.

INTRODUCTION

An injection is a skin pricing procedure done by the syringe and needle by introducing medication such as therapeutic and curative purpose into the body through intramuscular, intravenous, intradermal and subcutaneous roots. This denied all other skin penetrating procedure such as blood transfusion, tattoos and all surgical method. Inject able medication was first time introduced in the 1920 since the world when a disease Kalaazar spread the wide range after the Second World War regarding the introduction of penicillin. According to safe injection, globally network heath care provider, acquire 2 million needle stick injury each year that result in infection with hepatitis B 33% and C 42% and HIV

2 %.[14] Pakistan has the highest frequency of injections in the world, along with Ecuador and a former soviet union republic.[1] An injectable medication is one of the most common therapeutic methods. According to World health organization, every year at least 16 billion injections are administered in developing and transitional countries.[2]

A safe injection does no harm, but unsafe injection methods are a plague of many health systems. Every year unsafe injections cause an expected 1.3 million early expires, a loss of 26 million years of life and an annual burden of US $ 535 million in direct medical costs .[3]

The unsafe injection method is a major source of disease transmission, unsafe injection practices are an important engine for spreading blood-borne infections such as hepatitis C virus, hepatitis B virus and HIV/AIDS by Improper injections technique or by reuse of syringe, needle without sterilization .The most affected heath care provider are nursing personal because they are directly involved to the patient.[4] A study conduct in Gujarat city of, India including selected primary health care facilities and families reported a 77 % prevalence of unsafe injection practices among health care workers.[5] Similar those judgments have shown other studies in North India[6] and in China Wulong county had the prevalence of unsafe injection practices 77.5% respectively.[7]

In order to address, the problem linked with the unsafe injection method the World health organization (WHO) in 1999 convened the safe injection Global Network (SIGN), that proposes to improve the safe and proper use of injection globally by implication decrease unsafe injection practices and their following effects.[8]

The used materials for critical medical procedures sit a lot of hazard to the patients, the healthcare workers or the community living in the environment where the wastes are finally disposed. The majority of the heath care provider received needle stick injuries during patient care while handling procedure e.g. Management of sharp waste, recapping of needles and the reusing of syringes. Accidental needle stick injury by co-workers and needle disassembly and actually a number of them are unaware.[9,10,11]

To decrease the risk of unsafe injection methods on the people, the World Health organization (WHO) introduced the theory of injection safety which does not harm the recipient, does not expose the provider to any an avoidable risks and does not result in waste that is dangerous for other people in the community.[12]

Globally, unsafe injections estimate for more than 25 million preventable new cases of blood-borne infections like hepatitis B, C and HIV/AIDS. According to WHO an estimated 250,000 new cases of HIV/AIDS infections per year as a result of the contaminated needles and syringes.[11] In Africa, 250 to 500 people are newly infected with HIV each day as a result of unsafe blood transfusion and unsafe injection therapy.[11]

Problems usually discussed in injection safety method include proper hand washing before and after injection administer the use of gloves where necessary; single-use personal protective equipment; skin preparation before injection and disinfection and proper waste management.[12,14] According to these mandatorily advised that safe injection practices should be routinely applied in all healthcare settings since every person in health settings is considered a potential source of infection.[13]

The leading cause of the high frequency of injections is the beliefs that inject able medicine work quicker and they are extra powerful in the actions. The health practitioner's also encourages inject able medicine because of their business profits. Injection multivitamin is one of the most commonly suggested in the country. According to the international market survey use of injection

neurobion, in the two years 1999 to 2000 had estimated, twenty-three to thirty-four million, reporting, with estimated usage of Neurobion tablets.[15]

A study was conducted in Pakistan Lahore Ghurki trust hospital with nurses. Awareness of the nurses about the occupational hazard of their profession when they start nursing training, Needle stick injury was most common in the nurses. In the last one year about 71% nurses injured during injection administering and other related procedure. The use of the needle cutter in the hospital well practices by the nurses. About 60% nurses gets training of sharp waste management; about 31% were injured at the time of recapping the syringe. Practices of hand washing were 75% and use of sterile gloves about 64%. Needle stick injury is the most important health risk in the nurses with the alarming ratio. In that hospital nurses, not aware self-protective measure if they get needle stick injury they did not report to higher authorities and did not screening after any needle stick injury, and promotion of safety measures against it.[16]

This study assessed the level of knowledge and practice of injection safety among nurses in tertiary care Bahawal Victoria Hospital, Bahawalpur.

Aim

To improve health status of patients and enhance healthy population by decreasing health hazards associated with unsafe injection practices.

Objectives

To assess knowledge and practices of nurses regarding injection safety practices at hospitals.

METHODOLOGY

This cross-sectional descriptive study was conducted among the nurses involved in patient care at Bahawal Victoria Hospital (BVH) located at the circular road in Bahawalpur Punjab, Over two month's period from April 2015 to June 2015. Study consist of multiple units of hospital where injection practices are most common, departments included were Emergency, Intensive Care Units (ICUs) of multiple departments, Paeds, Medicine, Gynae, Labour rooms, surgical units, orthopedic department, Neurosurgical department and Immunization center.

The study system research approach for rapid appraisal was applied and following comprised the sampling population. Nurses involved in direct patient care were considered for this study Out of total 420 nurses, 383 nurses involved in direct patient care was study population 178 was sample size. From the sampling frame of 383 nurses 178 were selected by convenience sampling technique, Sample size was estimated on the prevalence rate of unsafe injection practices in Pakistan 12% and estimated sample size 178 while 95% is confidence interval.

Inclusion criteria: Nurses were the responsible for the administration of the injection.

Exclusion criteria: Those nurses were not in patient contact and subjected to the administrative responsibilities.

The ethical approval from an internal review board of Health Services Academy will be obtained to conduct the study. Afterward, permission from the medical Superintendent of Bahawal Victoria Hospital (BVH) Bahawalpur will be obtained. Written informed consent will be obtained from the persons before filling the questionnaire. Data was entered and analyzed through SPSS IBM version 21.0

RESULTS

This study was conducted at Bahawal Victoria Hospital Bahawalpur. An assessment of the existing situation regarding safe injection practices was done through the application of system approach and data was collected by employing rapid appraisal techniques. It was found mostly injections were given by the nurses. Mostly disposable syringe were used. 178 interview of nurses were conducted in the survey.

The mean experience of the respondents was 6.79 months with standard deviation of 4.568 and minimum experience of o1 year to a maximum 19 years. All the nurses were qualified about 53 (29.8%) had diploma holder another 15(8.4%) post RN Bsc.N and other 110(61.8%) simple Bsc.N nursing. Age of respondents mean was 29.96, standard deviation 6.13 minimum age 22 years

Table 1. Socio demographic status of respondents

Variable	Mean	SD
Age	29.96	6.13
Experience	6.79	4.568
Education	**Frequency**	**Percentage**
Diploma holder	53	29.8
Post RN B.ScN	15	8.4
B.Sc. Nursing	110	61.8

and maximum age 45 years as written in **table 1.**

Knowledge of injection provider

The knowledge about safe injection provider among study participants was not up to date. In present study respondents, replied that they had not heard about safe injection practices or constitute safe injection practices .The remaining of the respondents had limited knowledge about safe injection practices while they had perception that safe injection practices mean only single use of disposable syringes. Majority of the respondent had knowledge of disease transmitted by unsafe injection 94.4% study population mentioned HIV/AIDS, hepatitis C, hepatitis B respectively can be transmitted through unsafe injection practices.

Regarding opinion of study population about reuse of contaminated needles, about 70.2% respondent said that syringes should be discarded after use or used after proper sterilization. Other 53 (29.8%) prefer use of contaminated needle. While administering medicine with existing cotton their hand s mostly respondent 111(62.4%) prefer bandage the injured part and 27 (15.2%) want to wear gloves to protect themselves, on the other only 18% did not practice any measures during medication with existing cut and injuries on their hands. In case of accidental needle stick injury, about 138 (77.5%) respondent told that hands should be wash with Soap and water, another 23 (12.9%) respondents apply antiseptic application on injections stick injuries on the other 17 (9.6%) did not any practices. In this study 23 (12.9%) respondent opined that reporting of accidental needle injury to the authority is necessary while 155 (87.1%) replied that there is no need to

Table 2. Knowledge of nurses regarding injection Safety

Variable of interest	Statement	Frequency	Percentage
Diseases transmitted by unsafe injection		168	94.4
Reuse of contamination needle before given injection	Needle use Needle discard	53 125	29.8 70.2
What to do if exiting cut on your hand or needle injury	Bandage injured part Wear gloves No measure	111 27 33	62.4 15.2 18.5
Immediate measure to be taken accidental Needle stick injury	Wash hand with soap Antiseptic Application No measure required	138 23 17	77.5 12.9 9.6
Reporting needle stick injury to the authority	Need to report No need to report	23 155	12.9 87.1

reporting to the authority about accidental needle injury according to description in **Table 02.**

Present study observed that, only 68 (38.2 %) study population that washed their hands with soap and water before given injection for self-protection and patients benefit and about 110 (61.8%) respondent did not wash their hand before injection administering. It was observed also that the respondent did not protect themselves with use of safety measure. Only 30.9% study population were used sterile gloves before and after injection administering and other 123 (69.1%) nurse not prefer to wear gloves. Skin cleaning before injection administer about 156 (87.6 %) study population correctly cleaned the skin of the patients. Change I/V line before 48 hours about 79 (44.4%) opined should be change about 55% respondent said no need for change I/v braunule before 48 hours. Two handed recapping

of the needle after injection given was the provider in 143 (80.3%) observed one handed recapping of the needle observed in only 35 (19.7%). In this study about 94% nurses did not receive any training on injection safety in last two year during service only 5% got that training about injection safety. About 94% nurses respondent of the study receive vaccination against Hepatitis B .Regarding accidental needle stick injury in last 06 month about 42% nurses got injury one time during injection administering, two time on duty needle injury was reported about 33% respondents was about

Table 3. Practice of nurses responded regarding injection safety

Variable of interest		Frequency	Percentage
Washing hand before injection give		68	(38.2)
Wear gloves before injection given		55	(30.9)
Prepare skin before injection with alcohol		156	(87.6)
Change I/V line before 48 hours		79	(44.4)
Recap needle and syringe (two handed recapping)		143	(80.3)
Prepared injection in septic technique in a clean area free from contamination?		127	(70.9)
Status of accidental needle stick injury in last 6 months	**None**	34	19.1
	1 time	75	42.1
	2 times	59	33.1
	3 times	10	5.6

5.6% got needle injury three time during her duty while 34% did not get injury in last 6 months during duty hours as shown in **Table 03.**

DISCUSSION

This study was conducted with the objectives of assessing injection safety in different departments of teaching hospital Bahawal Victoria Hospital, Bahawalpur Pakistan. In Pakistan, the burden of disease due to unsafe injection practices is very high. The number of injection p/person, p/year has been assessed 8.2% to 13.6%, one of the highest ratio in the developing countries. In the present study situation analysis of existing knowledge regarding safe injection practices was assess by the application of system approach. In our study Prepare the skin before injection with alcohol swab was 156 (87.6%) reported and similar study was conducted in India in which about 94.9% respondents were prepare the skin of the patients before injection given. In the present study I/V line change before 48 hours only 79 (44, 4%).[05]

Most of injection provider had no training on safe injection practices. A training is especially dedicated to injection safety is needed to bring a positive changes in their attitude regarding safe injection practices. But in this study, about 94% nurses did not receive any training on injection safety in last two year. Similar issue studies Kaduna state in Nigerian in 2013 reported that only 14.5% health care workers had attended training on safe injection. About 168 (94.4 %) nurses were fully immunized with hepatitis B vaccination.[11]

Knowledge regarding disease transmitted through unsafe injection was about 94.4%.respondents were aware about the disease spread through unsafe injection practices. In our study nurses had good knowledge of disease transmission .Anita Shankar conducts study in June 2014 at teaching hospital in Delhi among Medical interns and found that about 98% had good knowledge about the diseases transmitted by unsafe injections, namely HIV hepatitis B and C. Kaur et al reported that 79.3% health care worker were aware of HIV/HBV transmit ion through unsafe injection.

About 125 (70.2 %) participants of the study said that contaminated needle should be discarded while 30 % were unaware of the disposal practice. In Pakistan according to safe injection global network, in the year 2000 proportion of reuse of injection equipment was 79%.In a study conducted by Amir J Khan et al in 1995 peri urban Karachi in private practitioners 94% of needles and syringes were reused.[17] Compared to these above figures our result shows a better picture about reuse of syringes. Self-protection

when administering Injections with existing cut or injury on hand, In case of accidental needle stick hand injury138 (77.5 %) respondent said that washes hand with soap and water is good practice.

Similar study in Ghurki trust Lahore getting stuck by a contaminated needle 92 % of the nurses cleaned the wound with spirit swab, 87% washed the area with soap and water. In this study only 23 (12.9 %) respondents of study opined that reporting of accidental needle injury is necessary to the authority while a correlated result were reported from Lahore study in which (49%) study population went to inform the higher officials about needle Stick injury.[16] In our study it was observed that only 38.2% respondents washed their hands with soap and water before administering injection. In the west, Bengal India study in 2011 only 12.5% respondent washed hand with soap and water before injection given and 3.7% use sterile gloves.[05] From above studies results, present study result shows a better situation as compared to above studies. In the Patiala study 20% did the same practice of hand washing. Wearing gloves before injection was reported in this study was only 30.9%. A study report in Nigerian Prison service health facility in Kaduna stat 7.2% health provider wear single use of glove before injection administering.[11] In Ghurki trust 64% nurses were to use gloves when injection administering practice was performed. Cleaning of the skin is very important skin clean with an antiseptic solution use a clean, single use swab do not use a cotton balls stored wet in multi-use container.[16]

CONCLUSION

Health workers who aimed to improve people health, unfortunately majority of them are spreading harm with every prick of unsterile needle. They throw used disposal needles in open bucket every time. All other unsafe injection practices, injectable medication or vaccination are the treatment of disease, not be the vector of disease. Therefor poor injection practices lead to large scale blood born pathogen transmission. The result of the study shows that the injection practices in a teaching hospital do not meet the international standard in fact they laid far behind the required safety standards.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
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2	Nazeer Ali Buriro	Critical revision of the article, assembling and Drafting of the article, Corresponding author	
3	Faheem Ahmed	Statistical expertise, data arrangement	
4	Aijaz Ali Noonari	Translation, ursingperspective analysis	
5	Fahad Jibran Siyal	Data entry and arrangements, technical support	
6	Nadeem	Pharmacological perspective and disease resistance analysis.