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Knowledge regarding Safe Administration of Parenteral Medication among Nurses

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Abstract

Background: *Safe administration of parenteral medication is very important for the quality care of patient and it is very important for the cure of disease and promoting client health. Every individual nurse should know about the importance of safe administration of parenteral medication and should have enough knowledge to perform safe practice.*

Objectives: *to assess the knowledge of nurses regarding safe administration of parenteral medication*

Methodology: *A cross sectional descriptive study design was used in this research project to assessing the knowledge of nurses about safe administration of parenteral medication, the sample size was 200 nurses which are selected from Punjab institute of cardiology sampling technique data was collected from the participants through self-administered questionnaire*

Results: *study show that 92% of the nurses believed that this is very important to wash hand prior to the use of parenteral medicine. It is portrayed from my study that 90% of the nurses are well aware from the proper site, route and time of medicine and believed that it is very important for every nurse to know about the proper site, rout and time for administration of parenteral medicine*

Conclusion: *Safe administration of parenteral medication is very important and every nurse should know about the safe administration of parenteral medicine. Nurses have sufficient knowledge regarding the administration of parenteral medicine but there is lack of proper practice.*

Key words: knowledge, Nurse, Hospital, parenteral medication.

1. INTRODUCTION

Parenteral medication mean the administration of medicine by means other than the alimentary tract (oxford dictionary, 2015).The word parenteral was derived from the two words ”Para” and “enteron” means to avoid the intestine (Nehagulti& Gupta,2016).

In 1940 the first report related to Medicine administration attracted the authors’ attention toward medication administration errors. A recent report by the institute of Medicine reports that 44,000-98000 deaths occur due to errors in medicine administration each year in the USA (Zeghal et al., 2017). According to food and drug administration (FDA), about 1.3 million injuries occurred each year in United

States due to administration of medication with wrong drug, wrong dose, wrong timing, and wrong route(Stone et al., 2014).

Safe administration of parental medicines is important for a nurses to prevent the cross infection among nurses and patients. To prevent the spread of pathogens, aseptic technique is important to reduce the morbidity and mortality rate(Anderson et al., 2017). According to Nursing and Midwifery Council report (2018) proper hand washing, use of anti-septic lotion and gloves are important for nurses to prevent the transmission of infection. Nurses Knowledge about proper site, rout, and angle are important. Nurses also need knowledge about drugs and their actions to reduce problem in medication administration. Medicine administrations should be safe and effective. Nurses should be properly trained to administer the drugs effectively (Chiarella et al., 2018)

According to (Aad et al., 2014) nurse play a vital role in administration of safe medication, nurses and health care agencies can work collaboratively to improve safe administration of parental medication which can decrease the chance of error, but due to unsafe administration of the parenteral medicine patient life may be compromised.

A study by (Ndosi, &Newell, 2014), to evaluate nurses' knowledge about medication administration showed that nurses have inadequate or poor knowledge about standard medicine administration protocols.

According to the Study of (Wands et al., 2014) nurse' negligence and mistake, lack of knowledge and experience came to affect the safety of patients. The Lack of knowledge and awareness of high-risk medications and negligence in calculating the drip speed of high-risk medication" were identified as human-related factors involved in injection error, reflecting a lack of preparedness on the part of the nurses administering drugs.

Studies show that some factors such as medication miscalculations, lack of knowledge and proficiency as well as neglecting the hospital's medication protocol due to lack of time, extreme tiredness, inadequate work experience and inappropriate work environment may be related to the medication administration errors made by the nurses (Zeghal et al., 2017). According to The Nursing and Midwifery Council in (2018) the nurses requires to be responsible for their actions and omission in administering any medication, nurses must use professional judgment and apply their knowledge and skills in the given situation acting in the best interests of the patient (NMC, 2018).

2. LITERATURE REVIEW

Nurse-related medication administration errors like other medical staffs' errors may cause reversible and irreversible complications which result in higher cost and even increasing mortality. (Zeghal et al., 2017)

The study of (Knauff et al., 2015) for safe and accurate administration of medication hand hygiene is the best and easiest way to prevent the spread of microorganisms. The nurse need hand washing after and before the administration of medication, Hand hygiene should be carried out as indicated, either with soap and running water. The nurses need to Wearing non-sterile, well-fitting, single-use gloves, when administering medication to the patients, when performing venepuncture or venous access injections, because of the potential for blood exposure at the puncture site. For the prevention and control of infections a set of guidelines and practices is necessary to be used like proper hand hygiene, safe injection practice, use of aseptic techniques and handling of sharp wastes.

According to (Hatzivassiliou et al., 2016)nurses' characteristics that contribute to medication errors include lack of knowledge about of the patient, or the patient's diagnosis, the names, purposes, and correct administration of the medication, also not knowing how to operate intravenous pumps or infusion devices, poor medication calculation skills, and failure to adequately prepare medications before administration.

In the study review of the written intravenous therapy procedures for aseptic technique proved that aseptic requirements including hand washing should be followed before the medication administration and cleaning ampoules, vials and intravenous infusion closures. Errors associated with poor aseptic technique were the result of failure of the implementation of standard protocols. (Wagner, 2017).

It is important for the nurses to be effective in hand washing techniques before and after the administration of parental medication to the patients, for the prevention of infections proper septic technique must be utilized and for the safety of client and transmission of disease medical device should be used not more than one time like syringes and needles (Siegel et al., 2014).

The nurses need to make sure the identity of the patient before medication. Always follow agency policy for patient identification. Communicate with your patient before and after administration of medication. Provide information to patient about the medication before administering it. Answer questions regarding usage, dose, and special considerations. Give opportunity to the patient to ask questions (Wu et al., 2018).

The ability of the nurse is very crucial for the proper identity of the route for parental administration for a particular patient which involves knowledge about the action and adverse effect of the medicine. To be competent nurse must be adequately trained and should have enough knowledge about pharmacology which can improve the correct administration of

parental medication. To administer parenteral medications safely, it is very important to understand how to prevent an infection, prevent medication errors, and prevent discomfort to the patient (Hutchinson et al., 2014).

3. PROBLEM STATEMENT

A recent report by the institute of Medicine reports that 44,000-98000 deaths occur due to errors in medicine administration each year in the USA (Zeghal et al., 2017). According to food and drug administration (FDA), about 1.3 million injuries occurred each year in United States due to administration of medication with wrong drug, wrong dose, wrong timing, and wrong route (Stone et al., 2014).

Nurse-related medication administration errors like other medical staffs' errors may cause reversible and irreversible complications which result in higher cost and even increasing mortality. (Zeghal et al., 2017).

According to Nursing and Midwifery Council report (2018) proper hand washing, use of anti-septic lotion and gloves are important for nurses to prevent the transmission of infection. Nurses Knowledge about proper site, rout, and angle are important. Nurses also need knowledge about drugs and their actions to reduce problem in medication administration. Medicine administrations should be safe and effective. Nurses should be properly trained to administer the drugs effectively (Chiarella et al., 2018).

The study will help to explore the knowledge of nurses regarding parenteral medication administration. On the basis of this research work policy maker of the hospital will be able to take sufficient measure for improving safe practice of staff nurse regarding parenteral medication administration to minimize the chances of error.

4. OBJECTIVE

The objective of the study is:

1. To see knowledge regarding safe administration of parenteral medication among nurses.

5. RESEARCH HYPOTHESIS

Null Hypothesis:

Nurses have no knowledge regarding safe administration of parenteral medication among nurses.

Alternative Hypothesis:

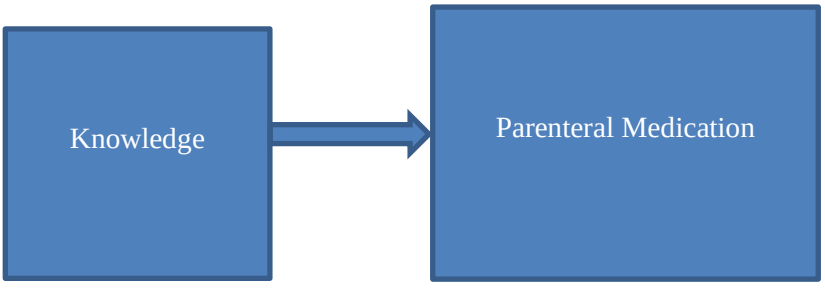
Nurses have knowledge regarding safe administration of parenteral medication among nurses.

6. OPERATIONAL DEFINITION

Knowledge: The awareness or familiarity gained by experience about parenteral medications.

Parenteral medication administration means any non-oral means of administration, but is generally interpreted as relating to injecting directly into the body, bypassing the skin and mucous membranes.

7. THEORETICAL FRAMEWORK



(Theory of planned behavior, 1980)

The Theory of Planned Behavior (TPB) started as the Theory of Reasoned Action in 1980 to predict an individual's intention to engage in a behavior at a specific time and place. The theory was intended to explain all behaviors over which people have the ability to exert self-control. The key component to this model is behavioral intent; behavioral intentions are influenced by the knowledge and practices about the likelihood that the behavior will have the expected outcome.

8. MATERIAL AND METHOD

Study Design

A cross-sectional analytical study design was used.

Study Setting

The setting for this research wasPunjab institute of cardiology Lahore.

Duration of the Study:

This study completed in approximately 4 months (September 2018, to December 2018).

Study Population:

The study population for this research was all nurses working in Punjab institute of cardiology Lahore.

Sampling Technique:

The simple random sampling techniques was used to collect data from selected population.

Sample Size:

Sample size is determined by using this formula

$n= N/ 1+ (N) (E)^2$

Desired sample size= n=?

Target Population= N =400

Margin of error =E=0.05 at 95% confidence interval

$n= 400/1+400(0.05)^2$

n= 400/1+1

n=400/2

n=200

The sample size is 200

Sample Selection for Nurses:

Inclusion criteria:

The subject included in the study was:

- All staff nurses
- Both male and female
- Those patients who were interested to participate in the study

Exclusion criteria:

The subjects who are excluded from the study was:

- Head nurses and nursing assistant
- Those who are not willing to participate

9. ETHICAL CONSIDERATION

The rules and regulations set by the ethical committee of Lahore School of Nursing was followed while conducting the research and the rights of the research participants will be respected.

- Written informed consent attached was taken from all the participants.
- All information and data collection was kept confidential.
- Participants remain anonymous throughout the study.
- The subjects were informed that there are no disadvantages or risk on the procedure of the study.
- They were also informed that they will be free to withdraw at any time during the process of the study.
- Data was kept in under key and lock while keeping keys in hand. In laptop it will be kept under password.

10. DATA COLLECTION PLAN

- After taking informed consent, data was collected by the help of collection tool questionnaire adopted from Martha Polovich, (2006).
- Data was collected from 200 staff nurses.

11. DATA ANALYSIS:

Data was analyzed by using SPSS version 22.0 statistical software for data analysis.

- Demographic variables like age, gender, marital status, education etc. was analyzed by using descriptive statistics like frequency, percentage, mean and standard deviation. Percentages was calculated for categorical data while continuous data will be analyzed through mean and standard deviation.

12. RESULTS

12.1 DATA ANALYSIS

This chapter includes 2 portions of analysis. First analysis is demographic analysis. It gives us details of 4 demographic questions which is gender, Age, marital status and stay in organization. Descriptive analysis is used for assessment of knowledge regarding safe administration of parenteral medication which include 10 questions of knowledge

Reliability of the scale is measured through Cronbach's alpha value while the validity is measured through KMO value.

Demographic Analysis

Gender

Data was taken from Punjab Institute of Cardiology Lahore from Nurses which include 199 (100.50%) of female nurses while only 1 (0.5) was male. The more detail about Gender are given in below table and figure

Table# 4.1

Distribution of gender

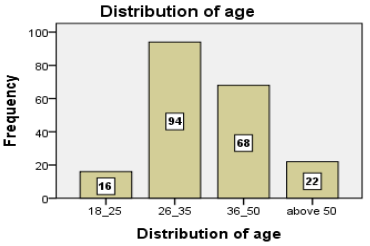
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	1	.5	.5	.5
	Female	199	99.5	99.5	100.0
	Total	200	100.0	100.0	

Figure# 4.1

Table# 4.2
Distribution of age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18_25	16	8.0	8.0	8.0
	26_35	94	47.0	47.0	55.0
	36_50	68	34.0	34.0	89.0
	above 50	22	11.0	11.0	100.0
	Total	200	100.0	100.0	

Figure# 4.2



Participants of the study were belong to different age group and it is revealed from the study that 16 (8%) of the participants belong to age group 18-25 years of age, 94 (47%) belong to 26-35 years of age, 68 (34%) belong to 36-50 years of age and 22 (11%) of the participants belong to age group above 50. The more details are given in below table and figure.

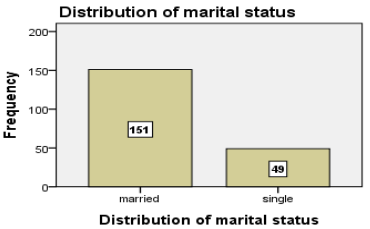
Marital Status

Table# 4.3

Distribution of marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	married	151	75.5	75.5	75.5
	single	49	24.5	24.5	100.0
	Total	200	100.0	100.0	

Figure# 4.3



Demographics of the questionnaire also include marital status of the participants and the participants of the study belong to two groups either married or non-married. It is reveled from the study that 151 (75.5%) of the participants were, married while only 49 (24.5%) were unmarried. The more detail are given in the table and figure below.

Stay in organization

Table# 4.4

Distribution of Stay in Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 1year	22	11.0	11.0	11.0
	1_5years	107	53.5	53.5	64.5
	6_10years	44	22.0	22.0	86.5
	above 10	26	13.0	13.0	99.5
	Total	200	100.0	100.0	

Figure# 4.4

Participants were also asked about their experience in organization and the time they spent in current organization where they were working, 22 (11%) of the participant have less than one year experience, 107(53.5%) have experience 1-5 years, 44(22%) have 6-10 years while 26 (13%)of the participants have above 10 years of experience

Descriptive and normality statistics

Normality tests

At first data was analyzed for missing values and other typing errors were also analyzed so that errors could rectify. Value of the data was assessed by analyzing normality. Normality was examined through skewness, kurtosis and histograms (Munro, 2005). Scores of Knowledge were normally distributed and were well in range +1 to -1 more over z scores of both skewness and kurtosis were well in the range of +1.96 and -1.96 hence findings indicated normality of the data.

Summary of skewness and kurtosis results

Values	***Knowledge***
Skewness	-.465
S.E	.172
Kurtosis	1.338
S.E	.342

Descriptive Analysis of Independent variables

Knowledge

Summed scores were used to calculate means range, median and standard deviation with the purpose of conducting descriptive analysis of Knowledge. Sample of 200 nurses was used for analysis purpose range of score was 20 as our mean and standard deviation are (M = 42.07, SD = 2.78)

Table 3 Summary of Descriptive Analysis

Variable	*Range*	*S.D*	*Mean*	*Median*
Burn out	20.00	2.78458	42.07	42.0000

Validity and Reliability Assessment

Table 4: presents Cronbach's alpha for four scales used in the study. Cronbach alpha is the most commonly used measure of scale reliability (Cortina, 1993).

Table 4 Summary of Reliability analysis

Independent Variable	Cronbach alpha
Knowledge	0.73

Cronbach alpha above 0.73 is considered to be the acceptable indicator of internal consistency reliability (Santos, 1999; Bryman& Cramer, 2005; Pallant, 2007; Hair et al., 2006).
The alpha values of knowledge was 0.73 which is acceptable

Convergent validity

Convergent was established by applying factor analysis. Factor analysis was performed by using principle component analysis with varimax rotation. Each of the dimensions was analyzed by performing factor analysis.

At start complete instrument was consisted on total 10 items. Instrument was consisting of 1 independent variable, Criteria for factor loading were .50 and items below that set criteria were dropped from analysis. More over all assumption

of factor analysis was fulfilled .assumptions imply that KMO value must be above .590 and Bartlett's test must be significant so whole set criteria was fulfilled.

Summary of KMO Bartlett's assumptions

		Bartlett's Test		
Independent variable	**KMO**	**Approx**	**df**	**Sig**
Knowledge	**.590**	**148.717**	**45**	**.000**

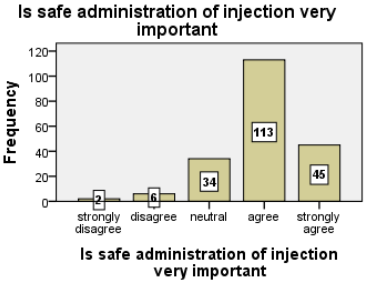
Findings:

Participants of the study were asked about 10 questions of knowledge regarding safe administration of parenteral medication and the response of the respondents were in 5 likert scale which 1# strongly disagree 2# Disagree 3# neutral 4# Agree and the 5# strongly agree.

Table: 4.5
Is safe administration of injection very important

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.0	1.0	1.0
	Disagree	6	3.0	3.0	4.0
	Neutral	34	17.0	17.0	21.0
	Agree	113	56.5	56.5	77.5
	strongly agree	45	22.5	22.5	100.0
	Total	200	100.0	100.0	

Figure: 4.5

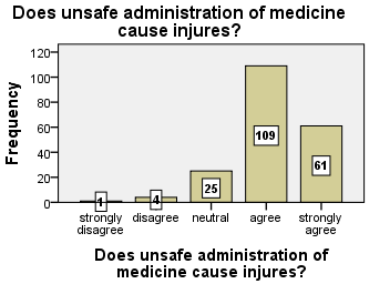


First question about knowledge which was asked from the participants was " is safe administration is injection is very important" 2(1%) of the respondents were strongly disagree, 6 (3%) were Disagree, 34 (17%) were neutral, 113(56.5%) were agree and 45 (22.5%) were strongly agree to this statement, the more detail are given in above table.

Table # 4.6
Does unsafe administration of medicine cause injures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.5	.5	.5
	Disagree	4	2.0	2.0	2.5
	Neutral	25	12.5	12.5	15.0
	Agree	109	54.5	54.5	69.5
	strongly agree	61	30.5	30.5	100.0
	Total	200	100.0	100.0	

Figure# 4.6

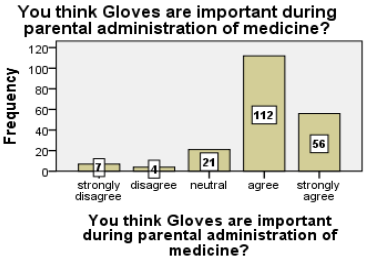


Second question which were asked from the participants was "does unsafe administration of medicine cause injuries"1(0.5%) respondent were strongly disagree, 4 (2%) of the respondents were disagree, 25 (12.5%) were neutral, 109 (54.5%) agree and 61(30.5%) were strongly disagree.

Table# 4. 7
You think Gloves are important during parental administration of medicine

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	7	3.5	3.5	3.5
	Disagree	4	2.0	2.0	5.5
	Neutral	21	10.5	10.5	16.0
	Agree	112	56.0	56.0	72.0
	strongly agree	56	28.0	28.0	100.0
	Total	200	100.0	100.0	

Figure # 4. 7

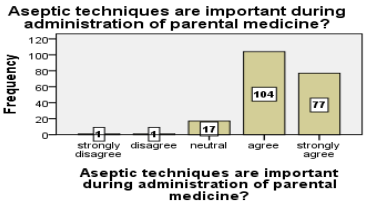


Third question which were asked from the participants was "Gloves are important during parenteral administration of medicine" 7 (3.5%) respondents were strongly disagree 4 (2%) of the respondents were disagree, 21 (10.5%) were neutral, 112 (56%) were agree and 56 (28%) were strongly agree to this statement, the more detail are given in table and figure below.

Table# 4.8
Aseptic techniques are important during administration of parental medicine?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.5	.5	.5
	Disagree	1	.5	.5	1.0
	Neutral	17	8.5	8.5	9.5
	Agree	104	52.0	52.0	61.5
	strongly agree	77	38.5	38.5	100.0
	Total	200	100.0	100.0	

Figure# 4.8

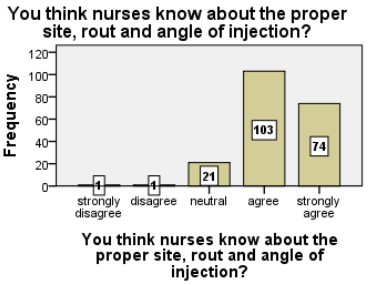


Fourth question which were asked from the participants was "aseptic techniques are important during administration if parenteral medicine" 1 (0.5%) participant were strongly disagree, 1 (0.5%) of the participants were disagree, 17 (8.5%) were neutral, 104 (52%) were agree while 77 (38.5%) were strongly agree to this statement, the more detail are given in above in table and figure.

Table# 4.9
You think nurses know about the proper site, rout and angle of injection?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.5	.5	.5
	Disagree	1	.5	.5	1.0
	Neutral	21	10.5	10.5	11.5
	Agree	103	51.5	51.5	63.0
	strongly agree	74	37.0	37.0	100.0
	Total	200	100.0	100.0	

Figure # 4.9

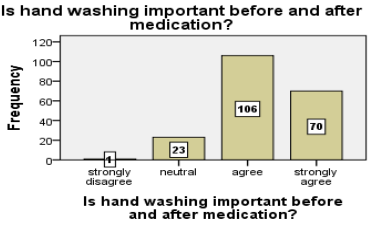


Fifth question about assessing knowledge of the participants was "Nurses know about the proper site, rout and angle of injection" 1(0.5%) respondent were strongly agree, 1 (0.5%) of the respondents were disagree, 21(10.5%) were neutral, 103 (51.5%) were agree and 74 (37%) were strongly agree to this statement.

Table# 4.10
Is hand washing important before and after medication

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.5	.5	.5
	Neutral	23	11.5	11.5	12.0
	Agree	106	53.0	53.0	65.0
	strongly agree	70	35.0	35.0	100.0
	Total	200	100.0	100.0	

Figure# 4.10



Sixth question about knowledge which were asked from the participants was "hand washing important before and after medication" 1 (0.5%) participant were strongly disagree 23 (11.5%) of the respondents were neutral response, 106 (53%) agree to this statement while 70 (35%) of the respondents were strongly agree to this statement.

Table# 4.11

You think nurse's use to do practice of hand washing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.0	1.0	1.0
	Disagree	1	.5	.5	1.5
	Neutral	14	7.0	7.0	8.5
	Agree	117	58.5	58.5	67.0
	strongly agree	66	33.0	33.0	100.0
	Total	200	100.0	100.0	

Figure# 4.11

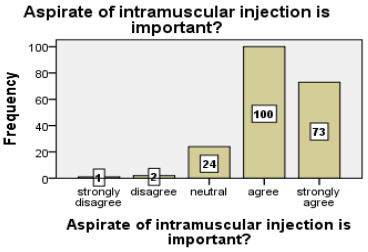
Seventh question which were asked from the participants was "nurses use to do practice hand washing" 2 (1%) respondents were strongly disagree 1 (0.5%) respondent were disagree, 14 (7%) of the respondents neutral. 117 (58.5%) of the respondents were agreed and 66 (33%) of the respondents were strongly agreed to this statement.

Table# 4.12

Aspirate of intramuscular injection is important?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.5	.5	.5
	Disagree	2	1.0	1.0	1.5
	Neutral	24	12.0	12.0	13.5
	Agree	100	50.0	50.0	63.5
	strongly agree	73	36.5	36.5	100.0
	Total	200	100.0	100.0	

Figure# 4.12

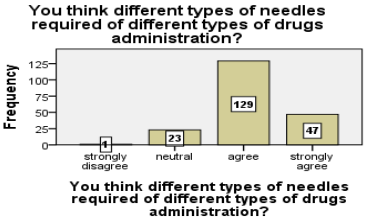


Eighth question which were asked from the participants was " Aspirate of intramuscular injection is important" 1(0.5%) respondent were strongly disagree, 2 (1%) of the respondents were disagree, 24 (12%) of the respondents were neutral, 100 (50%) of the respondents were agree and 73 (36.5%) of the respondents were strongly agree to this statement.

Table# 4. 13
You think different types of needles required of different types of drugs administration?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.5	.5	.5
	Neutral	23	11.5	11.5	12.0
	Agree	129	64.5	64.5	76.5
	strongly agree	47	23.5	23.5	100.0
	Total	200	100.0	100.0	

Figure# 4.13



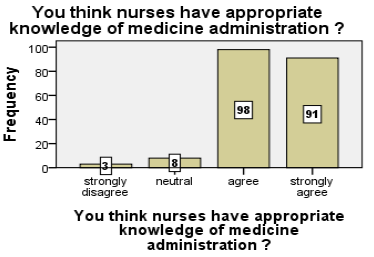
Ninth question which were asked from the participants about assessing their knowledge was "different types of needles are required of different types of drugs administration"1(0.5%) 0f the participant were strongly disagree, 23 (11.5%) of the

respondents give neutral response, 129 (64.5%) were agree and 49 (24.5%) of the respondents were strongly agree to this statement, more detail about this statement are given in table and figure above.

Table# 4.14
You think nurses have appropriate knowledge of medicine administration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	1.5	1.5	1.5
	Neutral	8	4.0	4.0	5.5
	Agree	98	49.0	49.0	54.5
	strongly agree	91	45.5	45.5	100.0
	Total	200	100.0	100.0	

Figure# 4.14



Tenth question which were asked from the participants was "nurses have appropriate knowledge of medicine administration"1(0.5%) respondent were strongly disagree, 8 (4%) of the respondents give neutral response, 98 (48%) were agree while 91 (45.5%) of the respondents were strongly agree to this statement, the more detail are given in the table and figure above.

DISCUSSION

Safe administration of parenteral medication is very crucial and important for the proper management of quality care of the

patient to prevent the spread of microorganism, and to minimize the risk of the injuries.

According to food and drug administration (FDA), about 1.3 million injuries occurred each year in United States due to administration of medication with wrong drug, wrong dose, wrong timing, and wrong route (FDA, 2009).

The finding of this study revealed that nurses have enough knowledge regarding safe administration of parenteral medicine and was well aware about the proper rout and needle requirement for the administration of parenteral medicine.

Study shows that 92% of the nurses believed that this is very important to wash hand prior to the use of parenteral medicine. According Hatzivassiliou et al., (2010) study that hand washing is very important before handling and administration of any kind of medicine and it is very crucial for parenteral medicine.

It is portrayed from my study that 90% of the nurses are well aware from the proper site, route and time of medication and believed that it is very important for every nurse to know about the proper site, rout and time for administration of parenteral medicine

According to (Aad et al., 2014) nurse play a vital role in administration of safe medication, nurses and health care agencies can work collaboratively to improve safe administration of parental medication which can decrease the chance of error, but due to unsafe administration of the parenteral medicine patient life may be compromised and it is very important for every individual nurse to know about the proper rout and dosage of drug administration.

Study showed that 52% of the study participants were agree and 39% of the participants were strongly agree that aseptic techniques are very important during administration of parenteral medication to prevent the spread of infection. These findings correspond with the findings of Anderson et al., (2010),

which states that safe administration of parental medicines is important for a nurses to prevent the cross infection among nurses and patients. To prevent the spread of pathogens, aseptic technique is important to reduce the morbidity and mortality rate.

CONCLUSION

Safe administration of parenteral medication is very important and every nurse should be known about the safe administration of parenteral medicine. Nurses have sufficient knowledge regarding the administration of parenteral medicine. The finding of this study revealed that nurses have enough knowledge regarding safe administration of parenteral medicine and was well aware about the proper rout and needle requirement for the administration of parenteral medicine. Study shows that 92% of the nurses believed that this is very important to wash hand prior to the use of parenteral medicine. It is portrayed from my study that 90% of the nurses are well aware from the proper site, route and time of medicine and believed that it is very important for every nurse to know about the proper site, rout and time for administration of parenteral medicine

RECOMMENDATION

1) Nurses should know about the proper route and dosage of drug administration
2) Hospital should focus on the protocol of safe drugs administration
3) Education program should be done in the hospital about drugs administration
4) Every nurse should have enough knowledge regarding drugs, side effect and complication of the medicine.

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