

A Comparative Study to Assess the Effectiveness of Hot Application and Hyper Saline Compression on Pain and Superficial Thrombophlebitis among Patients Receiving Intravenous Therapy in Selected Hospital of Amritsar

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Abstract

The aim of present study is to evaluate the effectiveness of two interventional strategies that is hot application and hyper saline compression on treatment of pain and superficial thrombophlebitis. Superficial thrombophlebitis is one of the oldest problems which the patients are facing in the hospitals due to lack of supervision and lack of proper interventions. It normally affects all age groups if not treated properly and which may lead to serious complications. A comparative control trial research design was used with purposive sampling technique to assess the effectiveness of two interventional strategies that is hot application and hyper saline compression on treatment of pain and superficial thrombophlebitis. The study was conducted out in Guru Nanak Dev hospital. The sample of study consisted 60 from medical and surgical wards. A numeric pain scale and modified visual infusion phlebitis score is used to assess the effectiveness of hot application and hyper saline compression. Analysis was done utilized both descriptive and inferential statistics. Findings of the study showed that, there was significant difference between in the mean post test score of hot application is less than hyper saline compression in numeric pain scale that is $2.13(SD\pm 1.07)$ and $3.26(SD\pm 1.12)$. The post test score of hot application less than hyper saline compression in modified visual infusion phlebitis score that is $2.23(\pm 0.703)$ and $2.4(SD\pm 0.799)$. The result revealed that the comparison between both the groups show that pain is reduced fast with the hot application and inflammation is reduced quickly with hyper saline compression.

Keywords: Interventional strategies, hot application, hyper saline compression, pain, superficial thrombophlebitis

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INTRODUCTION

“Prevention is one of the few known ways to reduce demand for health and aged care service.”

The word health is derived from old English word hale meaning “wholeness” being whole, sound and well. Health is a positive concept emphasizing personal and social resources as well as physical capacities. All have times of good health, times of disease, and maybe even times of

serious illness. Health is a state of physical mental and spiritual wellbeing in which they look and feel their best. The ideal health status is one in which people are successful in completing their full potential, regardless of any limitations they might have. The sense of wellness has a subjective aspect that emphasizes the importance of recognizing and responding to patient individuality and diversity in health care and nursing [1].

A weakening of the normal state of a human being that interrupts or modifies its vital functions is known as disease. Disease is an abnormal condition that disturbs the body of organism. It is associated with dysfunction of normal homeostasis, pain, distress, social problems, or death of the person afflicted or similar problems for those in contact with the person. Diseases usually affect people not only physically, but also psychologically, as it can alter one's perspective on life, and one's personality [2].

There are many procedures done in hospitals for patient care and these help them in many ways to cure the diseases or problems. In which intravenous therapy is one of them, intravenous (IV) simply means "within a vein", hence, is a treatment wherein fluids, medications, blood, or blood products can be infused into the vein of the patient for their treatment, under situation where they are not able to take the things orally. It permits accurate dosing and a swift effect of the substance infused.

The rapid effect of fluids delivered directly into the bloodstream is necessary during emergencies or other critical-care situations in which medications are needed. However, the results can be fatal if the wrong medication or dosage is given [3].

NEED FOR STUDY

An invasive procedure can expose a patient to infection and thus proper care of patients should be done when dealing with such procedures.

Earlier, nurses were not involved with inserting intravenous lines but were only responsible for maintaining and preventing complications.

Superficial thrombophlebitis occurs in about 75% of all patients receiving intravenous therapy. But now nurses are well qualified to recognize the sign and symptoms of superficial thrombophlebitis [4].

Superficial thrombophlebitis is more common in women and its prevalence increases with age [5]. Its incidence ranges from 3 to 11% for the general population, although this could be an underestimate as only the more symptomatic cases get registered for medical attention. The mean age at superficial thrombophlebitis presentation is 60 years and the older the patient is the fewer the risk factors required for its development. .

OBJECTIVES

- To assess the level of pain and superficial thrombophlebitis.
- To assess the effectiveness of hot application on pain and superficial thrombophlebitis in experimental group 1.
- To assess the effectiveness of hyper saline compression on pain and superficial thrombophlebitis in experimental group 2.
- To compare the effectiveness of hot application and hyper saline compression on pain and superficial thrombophlebitis in both the experimental groups.
- To find the association between effectiveness of hot application on pain and superficial thrombophlebitis with their selected demographic variables in experimental group 1.
- To find the association between effectiveness of hyper saline compression on pain and superficial thrombophlebitis with their selected demographic variables in experimental group 2.

METHODOLOGY

Randomized comparative trial research design was used and purposive random sampling technique was adopted for sampling and samples were divided into two groups according to inclusion criteria. The populations of the study were the clients who developed pain and superficial thrombophlebitis and having intravenous

line and admitted in the selected hospital of Amritsar. The study was conducted in medical and surgical wards. The sample size for the study was be consisting of 60 samples those who fulfilled the inclusion criteria, 30 in hot application group and 30 in hyper saline compression group.

Tool-I

Numeric pain scale was used to assess the extent of pain level.

Tool-II

Modified visual infusion phlebitis scale was used to assess the severity of superficial thrombophlebitis.

Tool-III

It included the data regarding demographic variable such as age, gender, site of intravenous cannula, number of prick during the intravenous cannulation procedure, size of peripheral intravenous cannula, types of infusion and duration of peripheral intravenous cannula.

RESULT

Table 1 shows:

1. Experimental group 1 (hot application)
 - Above table depicts the variable of the subjects according to age, gender, days of cannulation, site of cannulation and size of cannula.
 - The results indicate the highest percentage of subjects (36.6%) belongs to age group 41–50 years, 20–30 age group indicates (33.3%) and about 30% were belonging to 31–40 age group.
 - It can be seen that majority of respondents 46.6% were males and 53.3% were females.
 - It depicts that 53.3% of respondents having cannula for 2–3 days and 30% for both 4–5 and 16.6% for 6–7 days.
 - In relation to site of cannulation cephalic vein has the highest percentage (40%), dorsal vein has a percentage of

26.6%, whereas basilica vein has the least percentage of 13.3%.

- The result indicates in case of cannulation, in which 20G having (36.6%), 22G (26.6%), 18G (20%) and 16G having least percentage (16.6%).
2. Experimental Group 2 (Hypersaline Compression)
 - Above table depicts the variable of the subjects according to age, gender, days of cannulation, site of cannulation and size of cannula.
 - The results indicates the highest percentage of subjects (50%) belongs to age group 20–30 years, 31–40 age group indicates (30%) and about (20%) were belonging to 41–50 age group.
 - It can be seen that majority of respondents 60% were males and 40% were females.
 - It depicts that 43.3% of respondents having cannula for 2–3 days, 36.6% for 4–5 and 20% for 6–7 days.
 - In relation to site of cannulation dorsal vein having highest percentage (53.3%) and cephalic vein having (30%) where as basilic vein having least percentage (16.6%).
 - The result indicates in case of cannulation, in which 22G having (46.6%), 20G (26.6%), 16G (16.6%) and 18G having least percentage (10%).

Section-1: Analysis of Demographic Characteristics of Samples

Table 2 shows that mean score of experimental group 1 (hot application) numeric scale is 5.1(SD±2.1) and modified visual infusion phlebitis score is 14.26(SD±0.813) respectively and the mean score of experimental group 2 (hyper saline compression) numeric scale is 6.2 (SD±1.55) and modified visual infusion phlebitis score is 4.4(SD±0.85) respectively.

Table 1 and 2 show that mean score of pre-test and post-test of numeric scale is

5.1(SD±2.1) and 2.2(SD±1.09) respectively. Post-test mean score is less than pre-test mean score, the 't' test value is 13.7 which is significant at 0.05 level and the mean score of pre-test and post-test of

modified visual infusion phlebitis score is 14.26 (SD±0.813) and 2.23 (SD±0.847) respectively. Post- test mean score is less than pre-test mean score, the 't' test value 14 which is significant at 0.05 level.

Table 1: Frequency and Percentage Distribution of Demographic Variables in Both the Groups.

| S.No | Demographic Variable | Experimental Group 1 (Hot Application) | | Experimental Group 2 (Hypersaline Compression) | |
|------|----------------------------|---|------------|---|------------|
| | | F | Percentage | F | Percentage |
| 1. | Age (in Years) | | | | |
| | 20–30 | 10 | 33.3% | 15 | 50% |
| | 31–40 | 9 | 30% | 9 | 30% |
| | 41–50 | 11 | 36.6% | 6 | 20% |
| 2. | Gender | | | | |
| | Male | 16 | 53.3% | 18 | 60% |
| | Female | 14 | 46.6% | 12 | 40% |
| 3. | Days of Cannulation | | | | |
| | 2–3 days | 16 | 53.3% | 13 | 43.3% |
| | 4–5 Days | 9 | 30% | 11 | 36.6% |
| | 6–7 Days | 5 | 16.6% | 6 | 20% |
| 4. | Site of Cannulation | | | | |
| | Dorsal Vein | 8 | 26.6% | 16 | 53.3% |
| | Cephalic Vein | 12 | 40% | 9 | 30% |
| | Basilic Vein | 10 | 33.3% | 5 | 16.6% |
| 5. | Size of Cannula | | | | |
| | 16G | 5 | 16.6% | 5 | 16.6% |
| | 18G | 6 | 20% | 3 | 10% |
| | 20G | 11 | 36.6% | 8 | 26.6% |
| | 22G | 8 | 26.6% | 14 | 46.6% |

Table 2: Pre-Test Score of Pain and Superficial Thrombophlebitis.

| Variable | Experimental Group 1 (Hot Application) | | Experimental Group 2 (Hypersaline Compression) | |
|--------------------|---|---------------|---|---------------|
| | Pain | M.V.I.P Score | Pain | M.V.I.P Score |
| Mean | 5.1 | 14.26 | 6.2 | 4.4 |
| Standard deviation | 2.1 | 0.813 | 1.55 | 0.85 |

Table 3: Pre-Test and Post-Test Score of Hot Application to Assess the Effectiveness of Hot Application on Pain and Superficial Thrombophlebitis on the Patient. N: 30.

| Scale | Numeric Pain Scale | | Modified Visual Infusion Phlebitis Score | |
|--------------------|--------------------|-----------|--|-----------|
| Variable | Pre-Test | Post-Test | Pre-Test | Post-Test |
| Mean | 5.1 | 2.2 | 14.26 | 2.23 |
| Standard deviation | 2.1 | 1.09 | 0.813 | 0.71 |
| 'T' test value | 13.7 | | 14 | |
| Table value | 2.05 | | 2.05 | |

df=29

Table 4: Pre-Test and Post-Test Score of Hyper Saline Compression to Assess the Effectiveness of Hyper Saline Compression on Pain and Superficial Thrombophlebitis on the Patient. N: 30.

| Scale | Numeric Pain Scale | | Modified Visual Infusion Phlebitis Score | |
|--------------------|--------------------|-----------|--|-----------|
| Variable | Pre-Test | Post-Test | Pre-Test | Post-Test |
| Mean | 6.2 | 3.26 | 4.4 | 2.16 |
| Standard deviation | 1.55 | 1.12 | 0.85 | 0.55 |
| 'T' test value | 17.6 | | 15 | |
| Table value | 2.05 | | 2.05 | |

df=29

Table 4 shows that mean score of pre-test and post-test of numeric scale is 6.2(SD±1.55) and 3.26(SD±1.12) respectively. Post-test mean score is less than pre-test mean score, the 't' test value is 17.6 which is significant at 0.05 level and the mean score of pre-test and post-test of modified visual infusion phlebitis score is 4.4 (SD±0.85) and 2.16 (SD±0.55) respectively. Post- test mean score is less than pre-test mean score, the 't' test value 15 which is significant at 0.05 level.

Table 5 shows that mean score of hot application and hyper saline compression of numeric scale is 2.13(SD±1.087) and 3.26(SD±1.12) respectively. Scores of mean and standard deviation of hot application is less than hyper saline compression score, the

't' test value is 19.25 which is significant at 0.05 level and the mean score of hot application and hyper saline compression of modified visual infusion phlebitis score is 2.23 (SD±0.7030) and 2.4 (SD±0.799) respectively. Scores of mean and standard deviation of hyper saline compression is more than hot application score, the 't' test value 27.23 which is significant at 0.05 level.

Table 6 showed that the chi square values were calculated to find out the association between effectiveness of hot application on pain with age (30), association with gender (31.681), association with days of cannulation (30), association with site of cannulation (32.034) and association with size of cannula (33.178) at the ($p \geq 0.05$).

Table 5: To Compare the Effectiveness of Hot Application and Hyper Saline Compression on Pain and Superficial Thrombophlebitis.

| Scale | Numeric Pain Scale | | Modified Visual Infusion Phlebitis Score | |
|--------------------|--------------------|--------------------------|--|--------------------------|
| Variable | Hot-Application | Hyper-Saline Compression | Hot Application | Hyper-Saline Compression |
| Mean | 2.13 | 3.26 | 2.23 | 2.4 |
| Standard deviation | 1.087 | 1.12 | 0.703 | 0.799 |
| 'T' test value | 19.25 | | 27.23 | |
| Table value | 2.00 | | 2.00 | |

df=58

Table 6: Frequency and Percentage Distribution of Demographic Variable of Patient with Level of Pain in Experimental Group 1 (Hot Application).

| Experimental Group 1 Hot Application (Pain Scale) | | | | | | | | Chi | Table Value |
|---|----------------------|---------|-------|----------|-------|--------|-------|------------|-------------|
| S.No | Demographic Variable | No Pain | | Moderate | | Severe | | | |
| | | F | % Age | F | % Age | F | % Age | | |
| 1. | Age (in Years) | | | | | | | 30 (S) | 9.49 |
| | 20–30 | 8 | 26.6% | 4 | 13.3% | 0 | 0% | | |
| | 31–40 | 8 | 36.6% | 4 | 13.3% | 0 | 0% | | |
| | 41–50 | 4 | 13.3% | 2 | 6.6% | 0 | 0% | | |
| 2. | Gender | | | | | | | 31.681 (S) | 5.99 |
| | Male | 13 | 43.3% | 4 | 13.3% | 0 | 0% | | |
| | Female | 7 | 23.3% | 6 | 20% | 0 | 0% | | |
| 3. | Days of Cannulation | | | | | | | 30 (S) | 9.49 |
| | 2–3 Days | 8 | 26.6% | 4 | 13.3% | 0 | 0% | | |
| | 4–5 Days | 6 | 20% | 3 | 10% | 0 | 0% | | |
| | 6–7 Days | 6 | 20% | 3 | 10% | 0 | 0% | | |
| 4. | Site of Cannulation | | | | | | | 32.034 (S) | 9.49 |
| | Dorsal Vein | 10 | 33.3% | 4 | 13.3% | 0 | 0% | | |
| | Cephalic Vein | 8 | 36.6% | 3 | 10% | 0 | 0% | | |
| | Basilic Vein | 2 | 6.6% | 3 | 10% | 0 | 0% | | |
| 5. | Size of Cannula | | | | | | | 33.178 (S) | 12.59 |
| | 16G | 1 | 3.3% | 2 | 6.6% | 0 | 0% | | |
| | 18G | 3 | 10% | 2 | 6.6% | 0 | 0% | | |
| | 20G | 2 | 6.6% | 0 | 0% | 0 | 0% | | |
| | 22G | 14 | 46.6% | 6 | 20% | 0 | 0% | | |

Table 6(A): Frequency and Percentage Distribution of Demographic Variable of Patient with Superficial Thrombophlebitis in Experimental Group 1 (Hot Application).

| Experimental Group 1 Hot Application (M.V.I.P. Score) | | | | | | | | | |
|---|----------------------|------|-------|----------|-------|--------|-------|------------|-------------|
| S.No | Demographic Variable | Mild | | Moderate | | Severe | | Chi | Table Value |
| | | F | % Age | F | % Age | F | % Age | | |
| 1. | Age (in Years) | | | | | | | 34.13 (S) | 9.49 |
| | 20–30 | 5 | 16.6% | 5 | 16.6% | 0 | 0% | | |
| | 31–40 | 6 | 20% | 3 | 10% | 0 | 0% | | |
| | 41–50 | 7 | 23.3% | 4 | 13.3% | 0 | 0% | | |
| 2. | Gender | | | | | | | 33.77 (S) | 5.99 |
| | Male | 7 | 23.3% | 9 | 30% | 0 | 0% | | |
| | Female | 11 | 36.6% | 3 | 10% | 0 | 0% | | |
| 3. | Days of Cannulation | | | | | | | 31.741 (S) | 9.49 |
| | 2–3 Days | 10 | 33.3% | 6 | 20% | 0 | 0% | | |
| | 4–5 Days | 4 | 13.3% | 5 | 16.6% | 0 | 0% | | |
| | 6–7 Days | 4 | 13.3% | 1 | 3.3% | 0 | 0% | | |
| 4. | Site of Cannulation | | | | | | | 34.198 (S) | 9.49 |
| | Dorsal Vein | 7 | 23.3% | 1 | 3.3% | 0 | 0% | | |
| | Cephalic Vein | 5 | 16.6% | 7 | 23.3% | 0 | 0% | | |
| | Basilic Vein | 6 | 20% | 4 | 13.3% | 0 | 0% | | |
| 5. | Size of Cannula | | | | | | | 31.364 (S) | 12.59 |
| | 16G | 4 | 13.3% | 1 | 3.3% | 0 | 0% | | |
| | 18G | 4 | 13.3% | 2 | 6.6% | 0 | 0% | | |
| | 20G | 6 | 20% | 5 | 16.6% | 0 | 0% | | |
| | 22G | 4 | 13.3% | 4 | 13.3% | 0 | 0% | | |

Table 7: Frequency and Percentage Distribution of Demographic Variable of Patient with Pain in Experimental Group 2 (Hyper Saline Compression).

| Pain in Experimental Group 2 (Hypersaline Compression). | | | | | | | | | |
|--|----------------------|---------|-------|----------|-------|--------|------|------------|-------------|
| Experimental Group 2 Hypersaline Compression (Painscale) | | | | | | | | | |
| S.No | Demographic Variable | No Pain | | Moderate | | Severe | | Chi | Table Value |
| | | F | %Age | F | %Age | F | %Age | 31.312 (S) | 9.49 |
| 1. | Age (in Years) | | | | | | | | |
| | 20–30 | 5 | 16.6% | 7 | 23.3% | 0 | 0% | | |
| | 31–40 | 3 | 10% | 11 | 36.6% | 0 | 0% | | |
| | 41–50 | 1 | 3.3% | 3 | 10% | 0 | 0% | | |
| 2. | Gender | | | | | | | 30.156 (S) | 5.99 |
| | Male | 5 | 16.6% | 10 | 33.3% | 0 | 0% | | |
| | Female | 4 | 13.3% | 11 | 36.6% | 0 | 0% | | |
| 3. | Days of Cannulation | | | | | | | 30.232 (S) | 9.49 |
| | 2–3 Days | 4 | 13.3% | 8 | 26.6% | 0 | 0% | | |
| | 4–5 Days | 3 | 10% | 9 | 30% | 0 | 0% | | |
| | 6–7 Days | 2 | 6.6% | 4 | 13.3% | 0 | 3.3% | | |
| 4. | Site of Cannulation | | | | | | | 30.718 (S) | 9.49 |
| | Dorsal Vein | 5 | 16.6% | 14 | 46.6% | 0 | 0% | | |
| | Cephalic Vein | 3 | 10% | 4 | 13.3% | 0 | 0% | | |
| | Basilic Vein | 1 | 3.3% | 3 | 10% | 0 | 0% | | |
| 5. | Size of Cannula | | | | | | | 30.393 (S) | 12.59 |
| | 16G | 1 | 3.3% | 3 | 10% | 0 | 0% | | |
| | 18G | 1 | 3.3% | 4 | 13.3% | 0 | 0% | | |
| | 20G | 6 | 20% | 12 | 40% | 0 | 0% | | |
| | 22G | 1 | 3.3% | 2 | 6.6% | 0 | 0% | | |

Table 6(A) that the chi square values were calculated to find out the association between effectiveness of hot application on superficial thrombophlebitis with age (34.14), association with gender (33.77),

association with days of cannulation (31.741), association with site of cannulation (34.198) and association with size of cannula (31.364). There was a significant association found between

effectiveness of hot application on superficial thrombophlebitis of client with age, gender, days of cannulation, site of cannulation and size of cannula at the ($p \geq 0.05$).

Table 7 showed that the chi square values were calculated to find out the association between effectiveness of hyper saline compression on pain with age (31.312),

association with gender (30.156), association with days of cannulation (30.232), association with site of cannulation (30.718) and association with size of cannula (30.393). There was a significant association found between effectiveness of hyper saline compression on client with age, days of cannulation, site of cannulation and size of cannula at the ($p \geq 0.05$).

Table 7(A): Frequency and Percentage Distribution of Demographic Variable of Patient with Pain and Superficial Thrombophlebitis in Experimental Group 2 (Hyper Saline Compression).

| | Experimental Group 2 Hypersaline Compression (M.V.I.P. Score) | | | | | | | | |
|-------|--|------|-------|----------|-------|--------|------|----------------|-------------|
| S. No | Demographic Variable | Mild | | Moderate | | Severe | | Chi | Table Value |
| | | F | %Age | F | %Age | F | %Age | 1.591 (NS) | 9.49 |
| 1. | Age (in Years) | | | | | | | | |
| | 20–30 | 9 | 30% | 5 | 16.6% | 1 | 3.3% | | |
| | 31–40 | 5 | 16.6% | 3 | 10% | 1 | 3.3% | | |
| | 41–50 | 5 | 16.6% | 1 | 3.3% | 0 | 0% | | |
| 2. | Gender | | | | | | | 4.215 (NS) | 5.99 |
| | Male | 11 | 36.6% | 7 | 23.3% | 0 | 0% | | |
| | Female | 8 | 26.6% | 2 | 6.6% | 2 | 6.6% | | |
| 3. | Days of Cannulation | | | | | | | 2.56 (NS) | 9.49 |
| | 2–3 Days | 8 | 26.6% | 5 | 16.6% | 0 | 0% | | |
| | 4–5 Days | 7 | 23.3% | 3 | 10% | 0 | 0% | | |
| | 6–7 Days | 4 | 13.3% | 1 | 3.3% | 1 | 3.3% | | |
| 4. | Site of Cannulation | | | | | | | | |
| | Dorsal Vein | 9 | 30% | 5 | 16.6% | 2 | 6.6% | | |
| | Cephalic Vein | 7 | 23.3% | 2 | 6.6% | 0 | 0% | | |
| | Basilic Vein | 3 | 10% | 2 | 6.6% | 0 | 0% | | |
| 5. | Size of Cannula | | | | | | | 4.0937 (NS) | 12.59 |
| | 16G | 4 | 13.3% | 1 | 3.3% | 0 | 0% | | |
| | 18G | 3 | 10% | 0 | 0% | 0 | 0% | | |
| | 20G | 5 | 16.6% | 2 | 6.6% | 1 | 3.3% | | |
| | 22G | 7 | 23.3% | 6 | 20% | 1 | 3.3% | | |

Table 7(A) showed that the chi square values were calculated to find out the association between effectiveness of hyper saline compression on superficial thrombophlebitis with age (1.591), association with gender (4.215), association with days of cannulation (2.56), association with site of cannulation (2.541) and association with size of cannula (4.0937). However no association found between effectiveness of hyper saline compression on superficial thrombophlebitis with age and gender, days of cannulation, site of cannulation, size of cannula at the ($p \geq 0.05$).

In Experimental Group 1 (Hot Application)

The highest percentage of subjects (36.6%) belongs to age group 20–30 years, (40%) belongs to 30–40% and about (23.3%) belongs to 41–50%. It has been seen that majority respondents were males (56.6%) and (43.3%) were females. In case of days of cannulation (40%) were having for 2–3 days, (30%) for 4–5 and 5–6 days. The result indicates that majority of subjects (46.6%) having cannula on their dorsal vein, (36.6%) on cephalic vein and (16.6%) on basilica vein. The results shows that

(66.6%) subject having 22G sized cannula, (16.6%) having 18G, (10%) having 16G sized cannula and (6.6%) 20G sized cannula.

In Experimental Group 2 (Hyper Saline Compression)

The results indicate that the highest percentage of subjects (36.6%) belongs to age group 41–50 years, 31–40 age group indicates (33.3%) and about 30% were belongs to 20–30 age group. It can be seen that majority of respondents 53.3% were males and 46.6% were females. It depicts that 53.3% of respondents having cannula for 2–3 days and 30% for 4–5 (30%) and (16.6%) for 6–7 days. In relation to site of cannulation; cephalic vein having highest percentage (40%) and basilic vein having (33.3%) where as dorsal vein was having least percentage (26.6%). The result indicates in case of cannulation, in which 20G having (36.6%), 22G (26.6%), 18G (20%) and 16G having least percentage (16.6%).

IMPLICATION

The implications of findings have been discussed in relation to nursing service, nursing administration, nursing education and nursing research.

Nursing Services

1. The research findings can be used to inform the decisions, actions and interrelated with clients.
2. Research findings will also help to eliminate nursing action that do not achieve desired outcome.
3. The research findings can be used for discussing the implications and relevance of research findings with clients.
4. Nurses will able to assess the degree of pain and superficial thrombophlebitis, its risk factors and preventive measures among IV line clients based on the research findings.
5. Nurses will able to apply the best possible therapy in terms of action, cost

and availability to relieve pain and superficial thrombophlebitis.

Nursing Administration

Nurse as an administrator plays an important role in education of the professionals such as mass health education measures in hospital.

1. The administrator will be able to formulate policies, protocols, system of care in collaboration with the multidisciplinary team based on the research findings.
2. These research findings will help the administrator to replace the previous practices with these cost effective therapies.
3. Nurse administrator can use these findings in clinical seminars and staff education programmes on infusion phlebitis.
4. These findings help the hospital administration to evaluate the quality of care and infusion therapy protocols.

Nursing Education

This study can be useful in nursing education through following ways:

1. The division used in the tool can be useful in academic curriculum for the sake of tests, exams, practical and viva-voice.
2. The statement can be further intensified to educate the student nurses regarding pain and superficial thrombophlebitis.
3. The research work can be used in community health nursing to teach nursing students regarding home based therapies for pain and superficial thrombophlebitis.
4. The findings can be used to teach the students regarding pain and superficial thrombophlebitis and effective nurses' care.
5. The findings can be used for co-curriculum activities like seminars, panel discussion and debate etc.
6. The nurse educator can teach the students and clients related to the research topic.

Nursing Research

1. The research findings can be used by the new students in their research work.
2. The research work will help to attend research presentation at professional conference.
3. The tool used in the present study will be used as original or modified for further research.
4. Further research can be conducted by taking more variables for better results.
5. Conceptual framework for the study can be used for future research.

RECOMMENDATIONS

On the basis of the study that had been conducted certain suggestions are given for further studies:

1. A similar study can be undertaken on large sample for better generalization.
2. A similar study can be under taken by adopting an experimental factorial design for better result.
3. A similar study can be conducted by taking other topical therapies along with these two therapies for better results.

CONCLUSION

As good health is very important for each and every individual and self care strategies can help the clients to restore the health and prevent from life threatening condition. Home remedies will improve the health status of the patient having pain and superficial thrombophlebitis. The patients and family members must use this knowledge to reduce the pain and inflammation level.

The main intervention is to enhance the knowledge about home remedies that can help in reducing the pain and superficial thrombophlebitis without any cost and also to prevent the complications.

The result shows that mean score of hot application and hyper saline compression of numeric scale is 2.13(SD±1.087) and 3.26(SD±1.12) respectively. Scores of mean and standard deviation of hot application is less than hyper saline compression score, the 't' test value is 19.25 which is significant at 0.05 level and the mean score of hot application and hyper saline compression of modified visual infusion phlebitis score is 2.23 (SD±0.7030) and 2.4 (SD±0.799) respectively. Scores of mean and standard deviation of hyper saline compression is more than hot application score, the 't' test value 27.23 which is significant at 0.05 level. The result concludes that hot application is effective in reducing pain and hyper saline is effective in reducing the inflammation.

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