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Research article

The effectiveness of foot massage on relief of the foot pain among staff nurses working in emergency unit

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Abstract

Foot pain is the most common health problem among staff nurses working in the emergency units. An experimental study was conducted to assess the effectiveness of foot massage on relief of foot pain among staff nurses working in emergency unit. The objective of the study was to assess the pretest and post test pain scores after administration of foot massage. **Method:** The study was conducted at BLDEA'S Hospital Vijayapur. The design selected for the study was one group pre test and post test, true experimental design. Random sampling technique was used and sample consisted of 40 staff nurses. The foot massage was administered to those who completed selection criteria. The assessment of severity of pain was done by numerical pain rating scale. **Results:** Mean pretest pain score was 3.9 and mean post test pain score was 1.15 which was significant at P-0.05 level. Findings of the study indicate that the foot massage has an effect on relief of foot pain among staff nurses. There was significant association between selected demographical variable such as age and educational status. There was no significant association between foot massage and gender, ward, working hour and previous experience of foot massage. **Conclusion:** The long standing working hours for the staff nurses in emergency unit makes them to suffer from foot pain during duty hour. Foot massage is greatly required to reduce foot pain and improves their performance at work place. The study was concluded with further recommendations.

Keywords: Foot massage, Foot pain, Staff nurse.

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1. Introduction

A staff nurse is a person who works in a hospital taking care of the sick or wellbeing round the clock and whose rank is below that of sister [1]. During working hours foot pain is one of the most common problem for staff nurses. Nearly 84.4% of the nurses had WMSDs once or more in their occupational

lives. The 12month period and point prevalence rate of WMSDs at anybody region 78% and 66.1% respectively [1]. Pain is an unpleasant sensory and emotional experience which often leads to debilitation, diminished quality of life and depression. Pain management challenges every health care team member for there is no single universal treatment [15]. Foot pain generally starts in one of three places toes, fore foot or

hind foot. Foot pain is unpleasant experience perceived by the person in the foot [3]. The foot pain can be attributed to one of the following ill fitting shoes, prolonged standing exercises like walking jogging

Some alternative therapies are used for reducing the pain considering massage as a safe and effective intervention. It involves working and acting of body with pressure structured and unstructured stationary moving, tension, motion, or vibration done manually or with mechanical aids. The massage can be applied with the hands, fingers, elbows, knees, fore arm, feet for a massage device. It can promote relaxation and wellbeing can be recreational activity and can be sexual in nature.4. Receiving foot massage is one of life truly delicious experience, the apple pie a la mode of touch.

In India On March 1995 massage therapy is licensed by department of Ayurveda, Yoga, Neuropathy, Unani, Siddha, and Homeo (AYUSH). Massage therapy is based on Ayurveda, It is a scientific manipulation by the investigator using fingers over the sole of foot through a stroking.

Staff nurse is a person who works in a hospital taking care of the sick or wellbeing and whose rank is below that of sister [1].

Pain is an unpleasant sensory and emotional experience which requires serious dimension and can be crippling. Pain often leads to debilitation, diminished quality of life and depression. Pain management challenges every health care team member for there is no single universal treatment [2].

Foot pain generally starts in one of three places toes, fore foot or hind foot. Foot pain is unpleasant experience perceived by the person in the foot [3].

Foot is a complex structure of 26 bones and 33 joints layered with intertwining

Web of more than 120 muscles, ligaments and nerves. Nearly all cases of foot pain can be attributed to one of the following.

1. Ill fitting shoes
2. Prolonged standing excessive exercises like walking jogging etc

3. Certain medical conditions

Some alternative therapies are used for reducing the pain considering massage as a safe and effective intervention. It could be as used as a easy, cheap and executable method for treating pain in all medical health care centers and even at homes.

Massaging involves working and acting of body with pressure structured and unstructured stationary moving, tension, motion, or vibration done manually or with mechanical aids. The massage can be applied with the hands, fingers, elbows, knees, fore arm, feet for a massage device. It can promote relaxation and wellbeing can be recreational activity and can be sexual in nature [4].

All massage feels better when someone else does it, but this is especially true foot massage although it is easy to massage your on foot. Receiving foot massage is one of life truly delicious experience, the apple pie a la mode of touch.

Objectives of the study

- To Asses the pretest and post test foot pain score among staff nurses in experimental and controlled group.
- To determine the effectiveness of foot massage on foot pain among staff nurses in emergency unit.
- To find out the association between pretest level of foot pain score among selected demographic variables.

2. Research methodology

Research approach: evaluative approach.

Research design: true experimental design with treatment and control group.

Experimental study design

0 min	Intervention	After 10 min
Assessment of pain Both in experimental and control group	Administration of foot massage for the experimental group	Assessment of pain Both in experimental and control group

Population: In this study, population consisted of staff nurses who are working in selected hospitals Vijayapur.

Sample

In this study the sample consisted of 40 staff nurses working in emergency unit at hospital Vijayapur.

Sampling technique

In the present study random sampling technique is used

Criteria for sample selection

Inclusion criteria

Working staff who all are,

1. In age of above 24 years.
2. Working in emergency ward of selected Hospital.
3. Having foot pain.
4. Available during data collection.

Exclusion criteria

Working staff nurse who all are,

1. Not willing to participate in this study.
2. Suffering with other disorders and undergoing treatment.

Setting of the study

The investigator selected the BLDEA'S Hospital Vijayapur to conduct the study.

Variables

The following variables used in this study

- Independent variable: foot massage
- Dependent variable: pain

Selection and development of the tool

Tools were prepared on the basis of objectives of the study .In this present study numerical pain rating scale was used to assess the severity of pain and foot massage was to reduce the pain after expensive review of literature and discussion with experts.

Description of the tool

Part 1: Performa for demographic data contains 7 items which include age, gender, education, ward, duty hour, previous experience of foot massage, severity of pain.

Part 2: Numerical pain rating scale In this study numerical pain scale used to assess the severity of pain it include pain scale from 0-10.Each score shows the different levels of pain perceived by staff nurses.

The resulting score was ranked as follows:

1. No pain= 0
2. Mild pain= 1-3
3. Moderate pain= 4-6
4. Severe pain= 7-9
5. Worst pain= 10

Part 3: Administration of foot massage.

Steps	Foot massage procedure
Step 1	Procedure was explained to the subject
Step 2	Lubrication of foot and along the sole
Step 3	Give friction with palm to the soles by grasping the leg with one hand at the ankle and knuckle stroking with the right hand over the sole
Step 4	Press the sole on the sole on the reflex areas with tip of the thumbs of both hands over entire sole
Step 5	Give friction to the foot with the ends of the fingers up on the dorsum of the foot and then the sides of the foot vigorously from toes to heel
Step 6	Thumb kneading at the ankle and near the heel with the tip of the fingers
Step 7	Squeezing the foot
Step 8	Toe stretching and joint movements to the ankle

Testing of the tool

Validity

The tool was submitted to 8 expert's .The suggestions are taken from them and final valid tool was prepared

Data collection process

The study was conducted in BLDEA'S Hospital. The period of data collection was 4-6 weeks. Prior to data collection the permission was obtained from the authority. The study was explained to the participants based on the availability of 40 participants were selected by random sampling technique. The foot massage was administered after the assessment of foot pain by numerical pain rating scale and after 10 minutes the post test level of pain was assessed by using same pain scale to evaluate the effectiveness of foot massage.

Protection of human right

The proposed study was conducted after the approval of research committee of the institution. Permission was obtained from the hospital authority. Written consent of the participants was obtained before data collection. Assurance was given to the participants regarding the confidentiality.

3. Result

Organization of findings

The data collected from the staff nurses organized in the master sheet for tabulation and statically processing and is present under the following headings.

Section 1: Demographic variables of participants.

Section 2: Assessment of severity of foot pain among staff nurses before and after the treatment.

Section 3: Effectiveness of foot massage for reducing the foot pain.

Section 4: Association between pretest level of foot pain score among staff nurses with selected demographical variable.

Age: The above table describes that the majority of (50%) the staff nurses were of age group of 26- 29.

Gender: The above table describes that majority of the staff nurses (87.5%) are males and the remaining 12.5% are females.

Education: From the above table it is confirmed that majority (75%) of staff nurses belongs to GNM course, 7.5% BSC and 12.5% are PBBSC.

Table 2: Distribution of demographical variables of participant

SN	Item	Frequency	%
1	Age in years		
	a. 22 – 25	9	22.5
	b. 26-29	20	50
	c. 30-33	8	20
2	d. 34 and above	3	7.5
	Gender		
	a. Male	35	87.5
3	b. Female	5	12.5
	Education		
	a. GNM	30	75
	b. BSC	3	7.5
4	c. PBBSC	5	12.5
	d. MSC	0	0
5	Ward		
	a. SICU	10	25
	b. CCU	12	30
	c. ICU	4	10
	d. POW	0	0
	e. NEW	9	22.5
6	f. NICU	5	10
	Working hour		
	a. 6 hr	36	81
7	b. 8 hr	4	10
	c. > 8 hr	0	0
8	Previous foot massage therapy		
	a. Yes	1	2.5
9	b. No	39	97.5

Ward: Above table reveals those majorities (30%) of staff nurses are working in CCU. 12.5% are working in NEW. 25% are working in SICU .10% of them are working in both ICU and NICU.

Working hour: The above table describes that majority (81%) of staff nurses working 6 hr and 10% of them are working in 8 hr.

Previous foot massage history: From above table it is clear that 97.5% of staff nurses don't receive any foot massage previously and 2.5% of staff nurses receive foot massage previously.

Table 3: Distribution of participants over all pre test and post test level of foot pain score of staff nurses

Severity of foot pain	No. of staff nurses			
	Pre test		Post test	
	Number	%	Number	%
No pain	0	0	1	5
Mild pain	6	30	19	95
Moderate pain	14	70	00	00
Severe pain	00	00	00	00
Total	30	100	20	100

The above table (4) reveals that pre test, 30% of participants have mild pain and 70% of the participants has moderate pain, whereas, in post test 5% of participants has no pain and remaining 95% has mild pain.

TABLE-4: Mean, Standard deviation, Standard error of pre tests and post tests foot pain score of staff nurses

Table 4: Mean , Standard deviation, Standard error of pre tests and post tests foot pain score of staff nurses

Paired 't' test	Mean	No. of samples (n)	Standard deviation	Standard error of mean
Pre tests	3.9	40	0.7	0.25
Post test	1.15	40	0.477	0.373

- The mean pretest pain score is 3.9 and the mean post test pain score was 1.15 which is significant. It indicates that the foot massage is effective in reducing foot pain.

4. Discussion

The pre experimental study was conducted to assess the effectiveness of foot massage for reducing foot pain for 40 staff nurses selected through non- probability convenient sampling who are working in emergency unit at B L D E A'S Hospital Vijayapur.

Major findings of the study

Section A: Demographic variable

Section B: Objectives of the study

Section C: Discussion of the hypothesis testing

Section A: Findings related to demographic characteristics.

Among 40 staff nurses majority were of age between 26-29 [50%], 75% of had diploma in nursing education. 87.5% were male, 30% of them have worked in CCU, 81% were worked for 6 hours and 97.5% of staff nurses were not undergone foot massage.

The similar study was conducted on effect of foot massage on long –term care staff working with older people with dementia, the findings are the participants were in the age group of 23-63 yrs with mean age of 49, the majority were with a certificate in age care/nursing [n=14], majority [n=7] were worked in same unit for 1-3 yrs, and

participants typically worked four to seven-hour shifts per week.¹⁴

Section-B; Objectives of the study

In pre test 30 % of the participants have mild pain, 70 % has moderate pain. Another same study was conducted on effect of foot massage on postoperative pain and vital signs in breast cancer patient, the finding shows that all the patient were experienced post-operative pain ,it was measured by VAS after introduction of foot massage, it was observed that higher reduction in pain in experimental group[$p<.001$]¹⁵

The mean post test pain score [1.15] was found to be significant. So there is enough evidence that foot massage is effective in reducing foot pain during duty hour among staff nurses.i.e the study found that members of LTC staff who received foot massage intervention had significant decrease in foot pain and even in diastolic pressure and also anxiety level immediately after session.¹

The Chi-square values shows that there is association between the pre test level of foot pain among staff nurses and selected demographic variables [Age and Ward].

Section C: Discussion of the hypothesis testing

H1: There will be significant reduction of intensity of pain during working time after foot massage

The hypothesis H1 stated in the study is accepted since there was significant change in the pre test and post test level of pain score.

H2: There will be significant difference between pain score of experimental group controlled group of staff nurses during duty hour in emergency ward of BLDEA'S Hospital.

The chi-square value shows that there significant association between the pre test level of foot pain among staff nurses and their demographic variable.

The present study is conducted to assess the effectiveness of foot massage for reducing

foot pain among staff nurses working in emergency unit at B L D E A'S Hospital Vijayapur. In order to achieve the objective. A pre-experimental design was adopted and non- probability convenient sampling was used to select the samples. The study was conducted over a period of 4-6 weeks. The data was collected from the age group of above 22 years. The findings of the study had been discussed with reference to the objectives and with findings of other related literature. The findings are discussed in the following section.

Conclusion

The conclusion drawn from the bass of findings of the study includes:

- On other hand it was observed that there is association between pretest level of foot pain score among staff nurses and demographic variables such as age and ward.

Limitations of the study

- The study cannot be generalized because of less samples of the study.

Recommendations

Following recommendations are offered for future research:

- The similar study may conduct using other types of alternatives therapies.
- An exploratory and descriptive study may be undertaken to assess the prevalence of foot pain among staff nurses.
- An exploratory study may be conducted to assess the coping strategies used by the staff nurses to manage the foot pain.
- A descriptive study may be conducted to assess the factors influencing the prevalence and severity of pain among staff nurses.
- Similar study was conducted in larger samples for wider generalizations.

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Our grateful heart is filled with love, For us blessed by god above, Our needs are met

before we ask, and we find strength for every task

Gratitude can never be expressed in words but this is only deep perception, which makes the words to flow from once inner heart

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