

“ A Study to assess the effectiveness of Back massage on Anxiety level, Heart rate and Blood pressure among Hospitalized Hypertensive patients at selected Hospitals Tumkur”.

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Abstract: Objective: To Assess the effectiveness of back massage on anxiety level, heart rate and blood pressure among hospitalized hypertensive patients. **Research Methodology:** - Quasi experimental design with 120 hypertensive patients, 60 for experimental group and 60 for control group were allotted through purposive sampling techniques. **Results:** - The results showed that back massage was highly effective in reducing anxiety level, maintaining heart rate and reducing and maintaining blood pressure among hospitalized hypertensive patients in experimental group than control group. There is a significant association between pretest and post test scores of anxiety level, heart rate and blood pressure with the age, occupational status , annual income of the family, duration of hospitalization of the hypertensive patients and no association among gender and marital status .**Conclusion:** The study concluded that back massage is effective in reducing anxiety level, maintaining heart rate and reducing and maintaining blood pressure.

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I. Introduction:

Hypertension has emerged as major health problem in India and in many developing countries. Hypertension directly responsible for 57% of all stroke deaths and 24% of all cardiac heart diseases deaths in India. About 50 million adults in the united states suffer from Hypertension. Hypertension is the most important risk factor for cardio vascular and chronic renal failure disease¹. The prevalence of Hypertension in Indian urban population has increased from 2- 4 % in mid 1950' s to 10-15% at the end of 20th century. In rural population the prevalence increased from 1-2% to 4 to 8%.² Hypertension imposes high costs on both individuals and society. In the united states, more than 10 billion dollars are spent on this disorder every year. Onley etal suggested that complementary medicine in order to control blood pressure and stress.⁴ Osborn etal, stated that use of complementary medicine could be effective in reducing blood pressure and this method was easily available and more effective compared to medications. Considering the patho physiology of blood pressure and the effective mechanism of massage therapy, relaxation through massage can facilitate the response of parasympathetic nerve, thus reducing heart rate, blood pressure and anxiety. Aourell etal suggested that repeated sensory stimulation during massage could result in neural changes and automatic system activity and consequently could cause changes in blood pressure and heart rate.⁵

II. Need For Study

There is a strong correlation between changing life styles factors and an increased in hypertension in India. Sedentary life style is a major cause of death and doubles the risk of cardiovascular diseases, diabetes mellitus and obesity. Stress is considered to be one of the major predisposing factors of hypertension.^{2,3}

The current concept for treatment of hypertension is the use of combination therapy of pharmacological and non Pharmacological management. According to current concepts the holistic care for hypertension includes complementary alternative medicine like relaxation technique, yoga, deep breathing exercises and massage therapy. Among all, massage therapy is one of the fastest growing complementary and alternative medical therapies.⁹ Massage can lower psycho emotional and somatic arousal such as anxiety and tension. As a therapeutic modality, massage is being used for relief of pain, swelling, muscle sprain , tension and anxiety associated with large number of disorders affecting muscular, nervous, cardiovascular and other system .³

According Watson (1989), massage like touch is a means of comforting some who is ill, helping to relieve any unpleasant symptoms. The whole body can be relaxed by massaging the back or by rubbing back.

The experience of illness and hospitalization often elicits a stress response which may manifest as increase heart rate, increased systolic and diastolic blood pressure anxiety and general discomfort. The well established nursing intervention, back rub or back massage has been utilized as a comfort measure for hospitalized hypertensive patients.^{7,11}

The overall aim of this study is to determine the effect of modest clinical practice of back massage on anxiety level and heart rate of hospitalized hypertension patients Hence the investigator likes to implement the back massage as an effective intervention for hospitalized hypertension patients and in turn practice in the clinical settings as a vital nursing intervention. Investigator thinks that the nurses serve as an effective intervention for the management of this “Silent Killer Disease”.

III. Statement Of The Problem

A study to assess the effectiveness of back massage on anxiety level. Heart rate and blood pressure among Hospitalized Hypertensive Patients at selected hospitals Tumkur.

IV. Objectives

- 1) To assess level of anxiety, heart rate and blood pressure among hospitalized hypertensive patients in the experimental group before and after back massage.
- 2) To assess the level of anxiety, heart rate and blood pressure among hospitalized hypertensive patients in the control group before and after routine treatment.
- 3) To determine the effectiveness of back massage on anxiety level, heart rate and blood pressure among hospitalized hypertensive patients.
- 4) To find out the association between the effectiveness of back massage on anxiety level, heart rate and blood pressure among hypertensive patients with their selected demographic variables.

V. Research Methodology

Research Approach:

Evaluative research approach was used in this study.

Research Design: Quasi experimental design was used in this study.

Sample and Sampling Technique:

The Hypertensive patients who were admitted in both Govt. District Hospital and Shridevi Hospital were selected by purposive sampling Technique. The subjects were selected for each group by simple random technique and were allotted to experimental and control group until each group attains 60 sample.

Sample Size :

120 Hypertensive Patients who met the inclusion criteria, 60 for experimental group and 60 for control group.

Schematic Representation of Research Study.

Group	Pretest On (Day one)	Intervention	Post Test on (7th day)
Experimental groups	-Anxiety level -Heart Rate -Blood Pressure	Back Massage	-Anxiety Level -Heart Level -Blood Pressure
Control Group	-Anxiety level -Heart Rate -Blood Pressure	No Intervention (Routine Treatment)	-Anxiety Level -Heart Level -Blood Pressure

Criteria For Sample Selection

Inclusion Criteria

- 1) Hospitalized Hypertensive Patients.
- 2) Hypertensive Patients who are willing to participate in the study.
- 3) Both male and female hypertensive patients will be included in the study.

Exclusive Criteria

- 1) Hypertensive Patients who are not willing or not interested in the study.
- 2) Hypertensive Patients who are critically ill.

Instruments Used For The Study:

Based on the objectives of the study a structured interview schedule with Modified State trait anxiety scale and a table to record heart rate and blood pressure was prepared to assess the anxiety level and heart rate among hospitalized hypertensive patients.

Development Of The Tool:

A Structured Interview Schedule was developed to assess the hospitalized hypertensive patients.

The instrument which were used to measure the dependent variables were:

Heart Rate measured by – Auscultation and palpation method.

Blood pressure by – Sphygmomanometer:- Auscultation and palpation method.

Descripton Of Th E Tool:

The components of the instrument:-

Section I: - Interview schedule for the collection of Baseline information.

Age, gender, marital status, educational level, occupational status ,annual income of the family, diet of the patients, duration of the hospitalizations, history of skin allergies and practice of relaxation techniques of hypertensive patients.

Section II: - Modified Spiel Berger’s State Anxiety Inventory.

The standardized Spielberg State Trait Anxiety Inventory consists of totally 40 items, 20 items of which are used to ascertain present anxiety levels (A state) and other 20 items to measure general levels of anxiety (A trait). First 20 items are only included in the scale.

Spiel Berger’s state anxiety inventory was modified by the investigator according to the administrability and convenience. It measures the state of anxiety of the hospitalized hypertensive patients. Modified State anxiety scale consists of 20 closed ended dichotomous questions to assess anxiety level of hospitalized hypertensive patients.

Scoring scale consists of two options “YES” or “NO”. There are 10 positive stated items and 10 Negative stated items. For the positive stated items score of “YES” is “1” and “NO” is “0”. In the Negative stated items scores for “YES” is “0” and “NO” is “1”.Scores ranges from minimum of “0” and maximum “20”. All scores were summed up for each individual samples. The anxiety level of hospitalized hypertensive patient was arbitrarily categorized as follows.

- Severe Anxiety - 0-3.
- Moderate Anxiety - 4-10.
- Mild Anxiety - 11-15.
- No Anxiety- - 16-20.

Section III:-A Table To Record The Physiological Parameters:-

A table to record the physiological parameters. Table was constructed to record Blood Pressure and heart rate.

- Blood Pressure is measured with the Sphygmomanometer – Auscultation measure and Palpation
- Heart Rate – Palpation method

The Blood Pressure and Heart Rate were measured on the 1st day (pretest scores) at three intervals i. e., 8am, 12pm , 4 pm and 7th day (post test scores) at same time interval as 1st day.

Testing Of The Instrument:-

a) Content Validity:

Minor modifications were made on the basis of recommended and suggestions of experts. After consulting the experts final tool was edited by English language experts without changing the meaning of the tool. It was found to be suitable for the hospitalized hypertensive patients.

b) Reliability

Reliability of the tool was established by using Split Half technique which measures the Co-efficient of internal consistency. The reliability of the Split half test was found by using Karl Pearson’s Correlation formula. Spearman’s Brown Prophecy formula was used to find out the reliability of the full test.

$$R = \frac{2r}{1+r}$$

R= Reliability of co efficient of co relation for whole test

r = reliability of co efficient of co relation for half test.

The reliability co efficient correlation of Modified Spiel Berger’s state anxiety inventory was found to be $r=0.93$.

Procedure For Data Collection :

A formal administrative permission was obtained to conduct the study from medical superintendent of Govt. District Hospital Tumkur and Shriedevi Hospital Tumkur. Before collecting data, prior consent was obtained from subjects. Samples were selected as per sampling criteria. The purpose of the study and co-operation required from participants was explained to them. Confidentiality was assured. Consent to participate in the study was obtained from each subject. A comfortable place was selected and participants were made comfortable and relaxed.

Pretest:

Was conducted separately for both experimental and control group of hypertensive patients. Pretest was conducted by face to face interview using modified state Anxiety inventory to check anxiety level. Heart rate and blood pressure were recorded in table at three intervals that is at 8AM, 12PM and 4 PM.

Intervention:

(Implementation of therapeutic back massage) The back massage was administered to only experimental group. The investigator followed nine basic steps of back massage. The investigator took suggestions and practiced back massage under the guidance and supervision of trained physiotherapist. On the second day onwards back massage was administered to the hypertensive patients at 3 intervals per day for 15 minutes till 6th day. After each session of back massage the patients were allowed to relax in a comfortable position.

Post Test :

After administration of series of back massage from 2nd to 6th day, post test was conducted on 7th day. The post test was conducted for both experimental group and control group separately. The questionnaire used in pretest was administered in the post test.

VI. Results of the Study. :

It is observed that most of the hypertension patients were in the age group of 50-60 years [36] 60% , above 60 years [13] were about 21.6% and the least number of 11 patients. (18. 3%) were in the age group of 40-50, in the experimental group. Whereas in control group majority of patients were in the age group of 50-60 years[32] 53%, least number in the age group 40-50 [10] 16% and 60 and above age group were 18 yrs. (30%)

Majority of hypertension patients in experimental group were female 43 (71%)and 17 were male (28%) .In control group male were 32(53%) and female 28(46%).

With regard to education status of hypertensive patients were at collegiate level 23(38.3%), illiterate were 9(15%) , primary education 18(30%) and high school education 10(16%) in experimental group and in control group, illiterate were 15(25%), primary education 12(20%) , high school education 17(28%) and collegiate education were 16(26.6%).

Distribution regarding marital status shows 33(55%) were married and 26(43%) were widower in experimental group, where as in control group 38(63%) were married ,20 (33%) were widower and 2 were single.(3.3%)

Occupational status shows that majority of samples were [27] agriculturists (45%) ,16 were laborers (26%),7 were employed (11.6%) and 10(16%) were dependent in experimental group. In control group 15(25%) were employed, 20(33.3%) were agriculturist, 12 (20%) were dependent and 13 were laborers.(33.33%)

It is observed that 41samples had annual income of Rs 4001 and above, (68%), 8

(13.33%) 2000-3000 annual income and 11 had Rs 3001-4000 annual income (18.33%) in experimental group, where as in control group 35 samples had Rs 4001 and above income (58.3%), 12 had Rs 2000-3000 income(20%) and 13 had Rs 3001-4000 annual income (21.2%).

Majority were [39] non vegetarians (65%), 21 were vegetarians (35%) in experimental group whereas in control group 32 were non vegetarians (53.3%) and 28 were vegetarians(46.66%).

Distribution regarding the duration of hospitalization in experimental group shows that 30 hypertensive patients (50%) stayed in hospital between 5 to 10 days , less than 5 days (10%) only 6 samples, 6 patients stayed between 10 to 15 days (10%), 10 patients between 15 to 20 days (16%) stayed in hospital. In control group 20 patients(33%) stayed in hospital between 5 to 10 days, 15 were(25%) less than 5 days, 8 were (13.3%) between 10 to 15 days ,10 were (16%) between 15 to 20 days and 7 were (11.6%) stayed in hospital 20 days and above .

It was observed that majority of patients were free from any type of skin infections in both experimental and control group. Majority of hypertensive patients does not practice any relaxation techniques

(95%), only 3 (5%) patients practiced relaxation techniques like yogs and meditation in experimental group and in control group only 5 patients (8.3%) practiced relaxation techniques..

Analysis of effectiveness of back massage on.

Anxiety Level

In order to find the mean difference between pretest and post test anxiety scores paired ‘t’ test was computed. In experimental group, the mean pretest score is 8.45, SD 2.26 and mean post test score 16.95, S D 1.57, P value < 0.001. The calculated t value is less then calculated table value, hence accept the alternative hypothesis. It is highly significant at 0.001 level, this indicates that the back massage was highly effective in reducing anxiety level of subjects in Experimental Group.

In Control Group, the mean pretest was 8-12, SD 2-18 and mean posttest score 9.16. It indicates that, there was significant difference between pretest & psot test anxiety level score in Control Group.

a) **Heart Rate** : In Experimental Group the mean pre test score of heart rate is 80.77, SD 5.37 and the post test score is 78.93, SD 4.06 the ‘t’ value is 2.02, p=0.031. By this above result it can be stated that back massage was significantly effective in maintaining heart rate of hospitalized hypertensive patients. The mean pretest score of heart rate 79.0, SD 4.30 and the mean post test score is 78.20. SD 4.01, K value is 4.0, P is 0.124, it shows that there was minor significant reference between pretest and post test score in control group.

b) Blood Pressure :

In experimental group the mean pretest score of systolic pressure is 152.8, SD is 4.7, ‘t’ value is 19.23, PL 0.001. Hence the statistical data shows the effect of back massage on systolic data shows the effect of back massage on systolic blood pressure is highly significantly in Experimental Group the mean pretest score of diastolic pressure is 90.0, SD 5.7, after back massage the post test score is 82.9, SD 4.7, ‘t’ value is 10.18, PL 0.001. Hence the statistical data shown that effect of back massage on diastolic blood pressure is highly significant. Where as in control group mean pretest score of systolic blood pressure is 146-2, SD11.4, and the post test score is 142.2, SD is 9.9 ‘t’ value 20.47, P is 0.024 and it as significant .

In Control Group the mean pretest score of diastolic blood pressure is 85.1, SD is 4.33 and pos test score is 80.2 SD is 4.10 t value is 9.2 is M 0.087 and is the highly significantly .

3. Association between pretest score of anxiety level, heart rate, blood pressure and socio demographic variable in experimental group.

The chisquare value of demographic variables show that the gender, marital status, diet and history of skin allergies are not significant where as age, educational status, occupation status, annual income of family, duration of hospitalization and relaxation techniques, are associated with the pretest level of knowledge.

Association between posttest scores of anxiety levels, heart rate, blood pressure and socio demographic variables in experimental group.

The chi square value of demographic variables shows that gender, marital status, diet and history of skin allergies are not associated where as age , educational status , occupational status, annual income of the family, duration of hospitalization and relaxation techniques are associated uses post test knowledge.

Association between pretest score of anxiety level, heart rate, blood pressure and socio demographic variables in control group.

The Chi square value of demographic variable shows that age and relaxation technique are not associated where as gender, marital status , educational status occupational status, annual income of the family , duration of hospitalization, history of skin allergies are associated the pretest knowledge.

Association between post test score of anxiety levels heart rate blood pressure and socio demographic variables in control group.

The Chi Square value of demographic variables shows that age is into associated with post test knowledge. Where as gender, marital status , educational status, occupational status , annual income of the family, diet, duration of hospitalization , history of skin, allergies and relaxation techniques are associated with post test knowledge.

Implications

The findings of the study have brought for the certain that certain that have for reaching implications for nursing in the area of practice education, administration, research and community.

1]Nursing Practice : Nurses play an important role in the management of hypertensive patients by non pharmacological therapies in the daily routines in the clinical. The nurses have to understand the importance and use of back massage therapy as a form of relaxation among hypertensive patients.

2) Nursing Education: The nursing curriculum has to emphasize more on non pharmacological methods in chronic diseases especially hypertension.

3) Nursing administration: A hospital policy should be adopted to provide back massage or written information to all inpatients & outpatients. The nurse administrator should take initiative in organizing continuing educational programmers on message therapy for nursing personal in hospital and community settings to gain knowledge and management of hypertension through non pharmacological therapies as the back massage.

4) Community: Each member of health team has the responsibility to educate the general public. Health care providers have to oriente This global epidemic and important of back massage in hypertension.

VII. Conclusion

The study was conducted to findout the efficacy of back massage on anxiety level heart rate and blood pressure among hospitalized hypertensive patients.

The following conclusions were drawn based on the finding of study.

- 1) The majority of the subjects in Experimental Group were 60% aged between 50-60 years and in Control Group 53% aged between 50-60 years.
- 2) Majority of subjects were females 71%
- 3) 15% of subjects were illiterate, 30% had primary education
- 4) 45% of subjects were farmers, only 11% were employed, 26% were laboring and 68% of subjects had more than Rs. 4000/- annual income and only 13% had Rs. 2000, 3000 annual income.
- 5) Majority 65% of subjects were non-veg.
- 6) Majority 50% of subjects stayed at hospital for about 5 to 10 days only 1% of subject had skin infection and 99% had no skin infections.
- 7) 95% of subjects not practicing relaxation techniques.
- 8) In Experimental Group, Post test score [16.95] higher than pre test score (8.45) it is highly significant at 0.001 level, this indicates that back massage was highly effective in reducing anxiety leave among hospitalized hypertensive patients.
- 9) The pretest score of Heart Rate is 80.77 and post test score is 78.93. It shows back massage was significantly effective in maintain hear rate of hospitalized patients.
- 10) The pretest score of systolic blood pressure is 152.8 and after back massage therapy mean post test score was 126.5 where as diastolic pressure pretest score was 90.9 and back massage mean port test was 82.9. The result showed that back massage was very effective in reducing & maintaining Blood Pressure among hospitalized hypertensive patients..
- 11) In Control group there was short significant difference between pretest scores and post score of anxiety level, heart rate & blood Pressure.
- 12) There is a significant association between pretest scores & past test scores of anxiety level, Heart Rate & Blood Pressure. with age, of the patients.
- 13) There is a significant association between pretest scores and post test score and occupational status educational status annual income of the family, duration of hospitalization of the Hypertensive patients.
- 14) There is no signifniation associations between pretest score and post test sizes and gender and marital status.

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