

Effectiveness of Music Therapy on Quality of Sleep among Elderly People in Selected Old Age Homes at Kanpur

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Abstract: Sleep is essential for a person's health and wellbeing. Sleep plays a vital role in maintaining good health and well being throughout a person's life. However, most of the patients are suffering from sleep related disorders when they are either diseased or hospitalized. A number of nursing measures as well as relaxing techniques has been improving the sleep pattern of the patient as per the research evidences. Hence in this study the investigator tried to provide music therapy for the patients in purpose of reducing the disturbed sleeping pattern and improving the quality of life. The main objective of this study were to assess the effectiveness of music therapy on the quality of sleep in experimental group by comparing with the control group and to find out the association of the results of the study with selected demographic variable. A non randomized quasi experimental control group research design was used for this study and the selected sampling technique for this study were a non probability purposive sampling. With this same technique the investigator has selected 30 samples in each experimental group and control group. A modified Pittsburgh sleep quality index was used to collect data. Results of the study shows that 73.33% elderly people are not having any significant insomnia followed by the intervention of musical therapy. However, there was no significant difference in pre test and post test sleep score value in control group. Hypothesis testing revealed that highly significant ($p < 0.05$) difference was found between post test sleep score and pre test sleep score among elderly people in experimental group.

Keywords: Music therapy. Quality of sleep, elderly people, Old age homes

1. INTRODUCTION

Sleep is a naturally recurring state of mind characterized by altered consciousness relatively inhibited sensory activity, inhibition of nearly all voluntary muscles and reduced interactions with surroundings. It is distinguished from wakefulness by a decreased ability to react to stimuli but is more easily reversed than the state of hibernation or being comatose.^[1]

Sleep plays a vital role in maintaining good health and well being throughout your life. Getting enough quality

sleep at right time can help to protect your mental health, physical health, quality of life and safety. In contrast studies States that sleep deficiency affects activity in some parts of brain. If you are sleep deficient, you may have trouble in making decision, solving problems, controlling your emotions and behavior with change.^[2]

Sleep helps your brain to work properly. While you're sleeping, your brain is preparing for the next day. It's forming new pathways to help you learn and remember information. The damage from sleep deficiency can occur in an instant (such as a car crash), or it can harm you over time. For example, ongoing sleep deficiency can raise your risk for some chronic health problems. It also can affect how well you think, react, work, learn, and get along with others.^[3]

Studies show that a good night's sleep improves learning. Whether you're learning math, how to play the piano, how to perfect your golf swing, or how to drive a car, sleep helps to enhance your learning and problem-solving skills. Sleep also helps you pay attention, make decisions, and be creative. Sleep deficiency alters activity in some parts of the brain. Sleep deficiency also has been linked to depression, suicide, and risk-taking behavior. Sleep is one of the strangest things we do each day. The average adult will spend 36 percent of his or her life asleep.^[4]

Music is one of the alternative form of therapeutic treatment for sleep disorders. It helps in achieving relaxation by soothing the central nervous system and attaining peace and stillness of mind. Studies recommend that the music therapy for geriatric helps to reduce the individual perception of tranquilizing medication, reduces the use of hypnotics on the hospital ward and helps in overall rehabilitation.^[5]

Music therapy uses music to promote good cognitive functioning of the brain. Through music therapy, elderly adults can express emotions, improve their listening, comprehension, promote good memory and improve their verbal and social skills. Listening to music is a big part of music therapy. During music therapy, elderly adults are encouraged to sing, play

instruments, write songs, and even learn how to play new instruments.^[6]

Globally, the proportion of people aged 60 years and over is growing faster than any other age group. By the year 2025, people in this age group will reach a total of 1.2 billion and this will rise to 2 billion in the year 2050 with 80 % of them living in developing country.^[7]

Surveys have estimated that more than 50% of community living people aged 65 or older experience sleep disturbance. Sleep disorder can result due to tiredness, depression, greater anxiety, irritability, pain sensitivity, muscle tremors and lack of day time alertness. The main goal of music therapy is to reduce psycho- physiological stress, pain and anxiety.^[8]

Music therapy also provides avenues for communication that can be helpful to those who find it difficult to express themselves in words. Research in music therapy supports its effectiveness in many areas such as: overall physical rehabilitation and facilitating movement, increasing people's motivation to become engaged in their treatment, providing emotional support for clients and their families, and providing an outlet for expression of feelings.^[9]

1.1 STATEMENTS OF PROBLEM:

"A study to Assess the Effectiveness of Music therapy on the Quality of sleep among Elderly people in selected old age homes at Kanpur".

1.2 OBJECTIVES OF THE STUDY:

1. To assess the quality of sleep among elderly people before music therapy in experimental group.
2. To Assess the quality of sleep among elderly people before music therapy in control group.
3. Assess the effectiveness of music therapy on the quality of sleep in experimental group by comparing with the control group.
4. To find out the association of quality of sleep among experimental and control group after post test with selected demographic variables.

HYPOTHESIS:

H₀. There is no significant differences in the level of quality of sleep before and after music therapy among elderly people in control group in old age homes.

H₁. There is a significant differences in the level of quality of sleep before and after music therapy among elderly people in experimental group in old age homes.

H₂. There is a significant association between the level of quality of sleep after post test among elderly people in experimental group with their selected demographic variables.

H₃. There is a significant association between the level of quality of sleep after post test among elderly people in control group with their selected demographic variables.

2. MATERIAL AND METHODS

2.1 RESEARCH DESIGN:

The research approach adopted for this study was evaluative approach and the design will be **quasi-experimental one experimental and control group**.

Setting of the study: The study was conducted in Swaraj vridhrashram near panki power house, Kanpur.

2.2 VARIABLES:

Independent Variable

In this study Music therapy is the independent variable.

Dependent Variable

In this study dependent variables refers to the quality of sleep of elderly people.

Demographic Variables

Age, Gender, Education Status, Occupation, Years of institutionalization, Family history of disease, alcohol and tobacco.

2.3 POPULATION:

The population for the study were elderly residents in swaraj Vridhrashram near panki power house, Kanpur.

2.4 SAMPLE:

The sample of the study were 60 elderly of Swaraj Vridhashram who fulfilled the sampling criteria.

2.5 SAMPLING TECHNIQUE:

With the help of purposive sampling technique, 60 elderly people were selected as sample for the study.

2.6 DEVELOPMENT AND DESCRIPTION OF THE TOOL USED IN THE STUDY:

The tool to assess the quality of sleep was developed by the investigator with the modification of Pittsburgh sleep quality index. Validity and reliability of tool was checked. The tool consists of 2 sections. The tool used for the study include:

SECTION A:

Baseline proforma which include the socio-demographic data like Age, Gender, Sex, years of institutionalization, Educational Qualification, type of occupation, socio-economic status.

SECTION B:

A modified pittsburgh sleep quality index for the assessment of sleep was prepared and utilized as a tool to collect the data from elderly peoples. This Modified Pittsburgh sleep quality index consist of 34 questions.

The elderly people has to pick out one statement in each group that best describes the way he /she have been feeling the past months including the day of inventory. In all cases, a score of "0" indicates no difficulty . While a score of "3" indicates severe difficulty. The "global" score, with a range of 0-102 points.

The tool was prepared by the investigator under the guidance of experts from the field of nursing and medicine.

2.7. DATA COLLECTION PROCEDURE:

The main study was planned for a period of 4 weeks in the Month of July 10th to August 7th 2017. Sixty samples were collected through purposive sampling technique. After taking the consent from the concerned samples the data were collected from the samples.

Phase I:

With prior informed consent, pretest was conducted through modified Pittsburgh sleep quality index to assess the sleep quality.

Phase II:

The investigator administered instrumental music therapy as intervention.

Phase III:

After 28 days post test was conducted to the same elderly people by using the same modified Pittsburgh sleep quality index.

3. RESULT

The data thus obtained were analyzed and presented under the following sections.

3.1. DESCRIPTION OF DEMOGRAPHIC VARIABLES

1. Age : Among the total sample the highest percentage of samples were belongs to the category of 60-65 years both in the control group as well as in the experimental group 46.67 and 33.3% respectively.

2. Sex: Majority of the samples were male in the experimental group(60%), but it is the other way round in control group where the prominent sex was female(63%).

3. Level of education: In both control and experimental group majority of the samples were completed their lower and upper primary education, 46.7% and 33% respectively.

4. Type of occupation : As per the type of occupation, most of the samples were self employers (40% in each) in both groups.

5. Years of institutionalization: In both groups the highest percentage 12(40%) and 14(46.7%) respectively were living from 2 to 5 years.

6. Alcohol Consumption and tobacco chewing : As per the findings majority of the selected samples were not consuming either any alcohol products or tobacco products in both group .

3.2 ASSESSMENT OF LEVEL OF QUALITY OF SLEEP AMONG ELDERLY PEOPLE BEFORE IMPLEMENTATION OF MUSIC THERAPY IN CONTROL AND EXPERIMENTAL GROUP

Table 3.1. Distribution of elderly people according to quality of sleep before implementation of music therapy

| Level of quality of sleep | Experimental Group | | Control Group | |
|----------------------------------|--------------------|-------|---------------|-------|
| | NO. | % | NO. | % |
| No clinical significant Insomnia | 00 | 00 | 12 | 40 |
| Sub threshold Insomnia | 10 | 33.34 | 11 | 36.66 |
| Clinical insomnia(moderate) | 18 | 60 | 5 | 17 |
| Clinical insomnia(Severe) | 2 | 6.66 | 2 | 6.66 |

3.3 ASSESSMENT OF LEVEL OF QUALITY OF SLEEP AMONG ELDERLY PEOPLE AFTER IMPLEMENTATION OF MUSIC THERAPY AMONG ELDERLY PEOPLE IN CONTROL AND EXPERIMENTAL GROUP

Table 3.2. Distribution of elderly people according to quality of sleep after the implementation of music therapy

| Level of quality of sleep | Experimental Group | | Control Group | |
|----------------------------------|--------------------|-------|---------------|-------|
| | No. | % | No. | % |
| No clinical significant Insomnia | 22 | 73.33 | 5 | 16.66 |
| Sub threshold Insomnia | 8 | 26.67 | 14 | 46.68 |
| Clinical insomnia(moderate) | 00 | 00 | 5 | 16.66 |
| Clinical insomnia(Severe) | 00 | 00 | 6 | 20 |

3.4 EFFECTIVENESS OF MUSIC THERAPY ON QUALITY OF SLEEP

Table 3.3 Comparison of post test level of quality of sleep among elderly people

| Aspect | EXPERIMENTAL GROUP | | | | CONTROL GROUP | | | |
|----------------------------------|--------------------|-------|------|---------|---------------|-------|------|---------|
| | No | Mean | SD | Mean % | No | Mean | SD | Mean % |
| Level of quality of sleep | | | | | | | | |
| No clinical significant Insomnia | 22 | 14.73 | 5.49 | 43.32 % | 5 | 3.76 | 7.74 | 12.53 % |
| Sub threshold | 8 | 9.5 | 13.9 | 27.94 % | 14 | 17.16 | 13.9 | 50.29 % |

| | | | | | | | | |
|--------------------------------------|----|----|----|----|---|-------|-------|--------|
| Insomnia | | | | | | | | |
| Clinical insomnia(moderate severity) | 00 | 00 | 00 | 00 | 5 | 10.63 | 21.87 | 31.26% |
| Clinical insomnia (Severe) | 00 | 00 | 00 | 00 | 6 | 15.2 | 25.01 | 44.70% |

n=60

3.4.1 Significance of difference between pre-test and post test sleep score

H₁.There is a significant differences in the level of quality of sleep before and after music therapy among elderly people in experimental group in old age homes.

Table. 4. Significance of differences between pre-test and post-test sleep scores.

| Experimental Group | | | | | Control Group | | | | |
|--------------------|------|-----------|------|-------|---------------|-------|-----------|-------|------|
| Pre-test | | Post-test | | "t" | Pre-test | | Post-test | | "t" |
| Me an | SD | Me an | SD | 17.37 | Mean | | SD | | 1.79 |
| 55 | 12.8 | 24 | 8.05 | | 37.16 | 19.43 | 47.2 | 20.55 | |

(df 29), (table value = 2.045)

P < 0.05

The above mention table revealed paired't' test, which was calculated to assess the significant difference between pre and post test sleep scores value, among experimental group shows highly significant difference .The calculated "t" value (26.370) is more than the table value at 0.05 level of significance. Hence the hypothesis (H₁) is accepted.

The paired't' test of control group show no significance difference between pre test and post test sleep score value. The calculated "t" value (1.79) is less than the table value at 0.05 level of significance. Hence the hypothesis (H₀) is accepted.

4. ASSOCIATION BETWEEN POST TEST SLEEP SCORE AND SOCIO DEMOGRAPHIC VARIABLES

Among the selected demographic variables : Age, Sex, Status, Occupation, Years of institutionalization, Family history of disease, Alcohol and Tobacco, Only education status and type of occupation has shown an association with post test sleep score of samples in experimental group.

However among the selected demographic variables like Age, Sex, Status, Occupation, Years of institutionalization, Family history of disease, Alcohol and Tobacco, nothing has shown an association with the post test sleep score of control group samples.

5. DISCUSSION

The first objective of the study was to assess the quality of sleep among elderly people before music therapy in experimental group. As per the data collected from the samples it is evident that 34% of elderly people had sub threshold insomnia, 60% elderly people had clinical insomnia (moderate severity) where as 2 elderly people had severe clinical insomnia (severe) in experimental group. Similarly it is the same way round in the case of control group too. The results of this study is supported by the study conducted by Fadiloğlu et al. (2006) . In his study also he has found out that 63% of the elderly patients slept between 22:00 and 23:00, 23% had difficulty falling sleep, 38% woke up between 06:00 and 07:00 in the morning, and 47% frequently woke up after falling sleep[10]. Similarly in another study which is conducted by Mr. Babacan Gümüş et al. (2009) in a nursing home reported that 47.8% of the samples (elderly people) had difficulties falling sleep, and 58.3% of them woke up after falling sleep[11].

The second main objective of the study was to assess the effectiveness of music therapy on the quality of sleep in experimental group by comparing with the control group. After the intervention of music therapy in the experimental group most of the elderly people 22(73.33%) were not having any sleep . This reveals that the music therapy was effective for the experimental group of elderly people.Distribution of overall mean ,SD and mean percentage of post test quality of sleep score of control and experimental group elderly people shows that among control group the highest mean of sleep score was 17.1±13.96 which is 54.5% for sub threshold insomnia and the lowest mean of sleep score was 15.2±25.01 which is 12.53 for no clinical significant insomnia. Similarly in experimental group the highest mean quality of sleep score was 14.73± 5.49 which is 43.32% for no clinical significant insomnia and the lowest mean of sleep score was 9.5±13.9 which is 27.94 % for sub threshold insomnia. However the overall mean score was 27± 5.62 and 55 ±12.8 for both group respectively. This result is supported by a pilot study conducted in United States on the effectiveness of music for sleep disturbance in 25 elderly people shows that 24(96%) of the participant reported improved sleep after listening to the music. These result demonstrated that music therapy procedure is effective in sleep disturbance.

6. CONCLUSION

Based on the findings of the study it is quite evident that music therapy is effective to improve the sleep quality of elderly people. Also, the investigator is recommended to provide music therapy to all patients especially to the elderly who are suffering from sleep disorders.

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