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## A Quasi Experimental Study to Assess the Effectiveness of Nursing Interventions and Relaxation Techniques on Sleep among the Senior Citizens Residing in Old Age Homes at Puducherry

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### **Abstract:**

Ageing is a natural, universal and an inevitable developmental phenomenon which takes place even with the best nutrition and health care. As the age progresses towards senility, they experience a number of psycho-physiological problems. As a consequence of these problems, they often suffer from sleeplessness. According to the National Sleep Foundation (2003), 44% of aged persons do not sleep well and they experience atleast one or more symptoms of sleep disturbances. Investigators' experience of working with the elderly persons revealed that those who are suffering from diabetes mellitus with burning foot and hypertension during old age reported to be suffering from sleep disturbances at night even though they were on medication. Whereas other aged persons who regularly exercise and take a daily walk, along with intake of their regular medications, do not experience any sleep disturbances. As nursing personnel, the investigator is interested in eliciting the importance of nursing care and relaxation techniques such as progressive muscle relaxation and deep breathing exercises in improving the sleep pattern of the subjects.

**Keywords:** Nursing interventions, relaxation technique, sleep, senior citizens, old age home

### **1. Introduction**

“India is currently entering the age of ageing,  
Let's add life to their years”

Demographic ageing is a global phenomenon. By the year 2025, the population of elderly is expected to exceed 830 million. As per the 1951 census, the population of the elderly people in India was 20 million and increased to 57 million in 1991, and in 2001 it was 77 million. The population of the elderly is expected to increase by 177 million by the year 2025. The number of elderly people may exceed 324 million by the year 2050 (O.P. Sharma, National Conference in Geriatrics and Gerontology, 2005).

Most of the elderly persons use medications for their physical illness. Certain medications may impair their ability to sleep and are even proved to stimulate wakefulness at night. As a consequence, the sleep pattern disturbances in the elderly persons can lead to increased risk of falls, difficulty in sustaining attention, difficulty in memory, disorientation and day-time sleepiness. Psychomotor retardation can lead to decreased performance, slowed response time, reduced quality of life, fatigue, loss of energy, depression and anxiety, waking up with dry mouth and morning headaches. An accurate diagnosis of sleep disturbances and non-pharmacological interventions may help in reducing geriatric morbidity and mortality, and this will certainly improve the quality of life of the elderly persons.

#### **1.1. Objectives**

- i. To assess the effectiveness of nursing interventions on sleep after such interventions among subjects residing in old age homes.
- ii. To determine the effectiveness of progressive muscle relaxation techniques with deep breathing exercises on sleep after such intervention among subjects residing in old age homes.
- iii. To study the comparative effectiveness of the interventions on sleep among experimental group I (nursing interventions), experimental group II (progressive muscle relaxation techniques with deep-breathing exercises) and control group III (without any intervention) residing in old age homes post-test.

### 1.2. Hypotheses

- $H_1$  : There is a significant difference in the sleep pattern among the subjects before and after the nursing interventions.
- $H_2$  : There is a significant difference in the sleep pattern among the subjects before and after administering relaxation techniques such as progressive muscle relaxation with deep breathing exercise.
- $H_3$  : There is a significant difference in the mean score of sleep pattern among the subjects exposed to nursing interventions in the experimental group I, subjects exposed to relaxation techniques in experimental group II than the subjects who were not exposed to any intervention in the control group III.

## 2. Materials and Methods

The Research was conducted in two phases:

- Phase I : Descriptive study was conducted to assess the sleep pattern, sleep disturbances, their perceived level of sleep and factors causing sleep disturbances among the subjects
- Phase II: Intervention approach was used to determine the effectiveness of nursing interventions and progressive muscle relaxation techniques with deep breathing exercises to promote sleep among the elderly The results were compared with findings of the control group III which was not exposed to any interventions.

### 2.1. Research Design

Quasi-experimental pre-test and post-test design with two experimental groups and a control group.

The study was conducted at Old age homes in functioning in and around Puducherry, The target population consists of senior citizens residing in old age homes at puducherry. Samples were the senior citizens with sleep disturbance. Convenient sampling techniques were used to select these 150 subjects. The tool used for the study Consisted of: SECTION A: Demographic data, SECTION B: Sleep pattern assessment questionnaire, SECTION C: Visual analog Scale to assess the subjects perceived level of sleep.

## 3. Data Collection Procedure

Out of seven old age homes functioning in and around Puducherry, five were selected for the study; written consent was obtained from the subjects. A pre-test was conducted for all the subjects in experimental I, II and control group III to screen the subjects for sleep pattern, sleep disturbances, perception level of sleep. The subjects selected for the experimental group I were educated on the nursing interventions. The subjects selected for the experimental group II were taught about deep breathing technique followed by progressive muscle relaxation. The control group III were not exposed to any of these interventions. A post-test was conducted by the researcher for experimental group I, II, to assess the effectiveness of interventions among the subjects with sleep disturbances with respect to sleep pattern & their perceived level of sleep. Also for the control group III post test were conducted without any interventions. A suitable statistical analysis was used to analyze the data.

## 4. Findings

### 4.1. First Objective

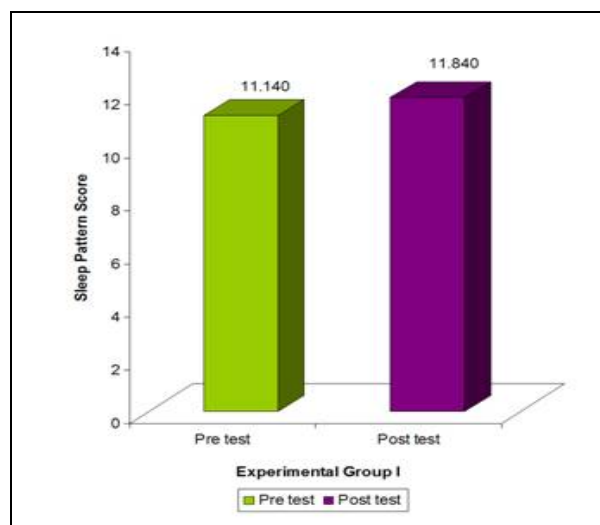


Figure 1: describes the comparison of the pre and post-test sleep pattern score for the experimental group I (Nursing interventions).

Though the mean post-test sleep pattern score of the subjects in the experimental group I (11.840) was slightly higher than the mean pre-test sleep pattern score (11.140) after giving 3 months of nursing interventions, paired 't' test results showed that the mean scores were found statistically insignificant (P Value 0.136).

#### 4.2. Second Objective

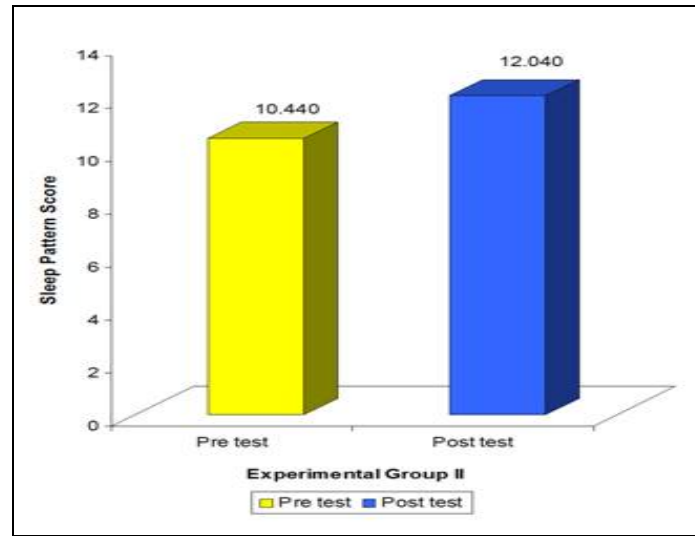


Figure 2: depicts the comparison of the pre and post-test sleep pattern score of the experimental group II (Progressive muscle relaxation with deep breathing exercise)

The mean post-test sleep pattern score of the subjects in experimental group II was (12.04) which was higher than the mean pre-test score (10.44) after giving 3 months of intervention. Paired 't' test results showed significant difference between the two mean scores which was statistically proved to be significant at  $P < 0.01$  level. Hence it is concluded that progressive muscle relaxation with deep-breathing exercises was effective in promoting sleep among the subjects residing in old age homes.

#### 4.3. Third Objective

Group	Mean Difference	Standard Error	Significant*
Control group III Vs Experimental Group I	1.63	.61	* .027 (S)
Control group III Vs Experimental II	2.07	0.62	*** 0.004 (S)
Experimental Group I Vs Experimental group II	0.447	.561	1.00 (NS)

Table 1: Bonferroni Multiple Comparison for the Control Group III

NS – Not Significant \*\*\* significant at 0.001 level

\* Significant at 0.05 level

The above Table shows the bonferroni multiple comparison test. The results inferred that the interventions had impact on the post-test sleep pattern score. While comparing the control group III with the experimental group I, it was proved that the nursing interventions was effective in promoting sleep among elderly which was found significant at  $p < 0.05$  level. While comparing the control group III with experimental group II, it was found that progressive muscle relaxation with deep-breathing exercise was effective in promoting sleep which was significant at  $P < 0.001$  level.

#### 5. Conclusions

All the senior citizens residing in old age homes at Puducherry experience sleep disturbances. Nursing interventions and progressive muscle relaxation techniques with deep breathing exercises are alternative measures to improve sleep among the elderly.

#### 6. References

- i. Adam, L., Gordon & John, R.F., Gladman. (2010). Sleep in Care Homes, <http://www.medscopecom/public>.
- ii. Benet, A. (2000). Sleep Disorders in the Elderly Epidemiology. *Reveurol.* 16-31; 30 (16), 581-6.
- iii. Christina, S., McCrae, and Kanneth, L., Lichstein, (2001). Secondary Insomnia, Diagnostic Challenges and Intervention Opportunities. Vol. 5 Issue 1, 47-61.
- iv. Foley, D., Ancoli-Israel, S., Britz, P., and Walsh, J. (2004). Sleep Disturbances and Chronic Disease in the Older Adults. Results of the 2003 National Sleep Foundation in America

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- v. National Sleep Foundation. (2003). Sleep in America Poil. [http://www.kintera.org/atf/cf/\(T6BF2668-A1B44FEB-8 DIA-AS D39340D9CB\)/2003 Sleep Poil Exec Summ Polf](http://www.kintera.org/atf/cf/(T6BF2668-A1B44FEB-8 DIA-AS D39340D9CB)/2003 Sleep Poil Exec Summ Polf). Accessed October 26, 2007.
  - vi. Roberts, RE., Shema, S.J., Kaplan, GA., Strawbridge, W.J. (2000). Sleep Complaints and Depression in an Aging Cohort. *Am J Psychiatry*, 157, 81-8.
  - vii. Sharma, O.P. (2005). Geriatric care in India, Current Scenario and Future Planning, XXIV Annual National Conference in Geriatrics and Gerontology, 3 & 4<sup>th</sup> September pp. 7-9.
  - viii. Wolkove, N., Elkholy, O., Baltzan, M., Palavew, M. (2000). Sleep Disorder Commonly Found in Older Adults. 79-86.
  - ix. Vaz Fragoso, C.A., Gill, T.M. (2007). Sleep complaints in Community – Living Older Persons a Multifactorial Geriatric Syndrome. *J Am Geriatric Soc*. 5(11), 1853-66.
  - x. Taylor, C., Lillis, C., Le Mone, P. (2006). *Fundamentals of nursing-the art and science of nursing care*. 5<sup>th</sup> edition. London: Lippincott Williams & Wilkins Publishers.