

## EFFECTIVENESS OF NURSE LED INTERVENTIONS ON SLEEP QUALITY AMONG ELDERLY AT SELECTED OLD AGE HOME

### Nursing

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| <b>Rajalakshmi. K</b> | Lecturer, Mohamed Sathak A J College of Nursing Affiliated to The Tamil Nadu DR. M G R Medical University Chennai, India. |
| <b>Priya.C</b>        | Professor, Venkateswara Nursing College Affiliated to The Tamil Nadu DR. M G R Medical University Chennai, India.         |
| <b>Jayanthi P</b>     | Vice Principal, Venkateswara Nursing College Affiliated to The Tamil Nadu DR. M G R Medical University Chennai, India.    |
| <b>Ciby Jose</b>      | Principal, Venkateswara Nursing College Affiliated to The Tamil Nadu DR. M G R Medical University Chennai, India.         |

### ABSTRACT

**Background:** Sleep is one of the components of mental and physical health in old age. The quality of sleep has been decreasing among most of the elderly. Chronic illness, physical disabilities, mental illnesses and other co morbidities are more prevalent among the elderly leading to poor sleep quality. Nurse led intervention like sleep hygiene, white noise and back massage can be used as a simple non- pharmacological therapy to improve the quality of sleep. **Aim and objective:** To evaluate the effectiveness of Nurse led interventions on sleep quality among elderly. **Methodology:** Quantitative research approach, Pre experimental research design was used. 77 elderly were selected using total enumeration sampling technique. one group pre-test-post- test. The study was conducted at Bhagavatha Uthamargal old age home, Marakkanam. **Results:** The pretest mean score of overall sleep quality was  $16.03 \pm 1.57$  and the post-test mean score was  $0.97 \pm 1.95$ . The mean difference was 15.06. The calculated paired 't' test value for subjective sleep quality ( $t=31.255$ ,  $p=0.0001$ ), sleep latency ( $t=41.871$ ,  $p=0.0001$ ), sleep duration ( $t=47.788$ ,  $p=0.0001$ ), habitual sleep efficiency ( $t=16.088$ ,  $p=0.0001$ ), sleep disturbances ( $t=44.211$ ,  $p=0.0001$ ), daytime dysfunction ( $t=35.754$ ,  $p=0.0001$ ) and the overall sleep quality ( $t=50.898$ ,  $p=0.0001$ ) was found to be statistically significant at  $p<0.001$  level. **Conclusion:** This clearly infers that nurse led interventions administered to the elderly was found to be effective in reducing the sleep difficulty among elderly.

### KEYWORDS

Nurse Led Interventions, Sleep Quality, Back Massage, White Noise Therapy, elderly

### INTRODUCTION

Old age homes are a second choice when older people start to become dependent and family members are unable to care for them. A typical old age home is a place for elderly people who have no one to care for them or who have been kicked out of their houses by their offspring. The standard of living for older people living in nursing homes is very different from that of senior people living with their family. The physical, psychological, social, and environmental factors that influence elderly people's quality of life are numerous. (Manpreet Kaur, Amandeep Kaur Bajwal and Gurjeet Kaur, 2019)

Chronic sleep disturbances are a prevalent issue among elderly. Insomnia in the elderly is often mistakenly considered a physiological process of aging but it is a subjective report of insufficient or non-restorative sleep despite adequate opportunity to sleep. Elderly is often perceived as difficult to treat, yet they are among the groups with the greatest need of treatment.

Varied non pharmacological approaches such as reducing environmental factors, mental imagery, gradual and progressive relaxation, auditory masking, music therapy, and massage are used to improve the quality of life.

### Statement Of The Problem

A pre experimental study to assess the effectiveness of nurse led interventions on sleep quality among elderly at selected old age home, Marakkanam.

### Objectives

1. To assess and compare the pre test and post test level of sleep quality among elderly.
2. To evaluate the effectiveness of Nurse Led Interventions on the level of sleep quality among elderly.
3. To associate the selected demographic variables with the post test level of sleep quality among elderly.

### Hypothesis

NH<sub>1</sub>- There is no significant effect of Nurse Led Interventions on sleep quality among elderly.

NH<sub>2</sub> - There is a no significant association of selected demographic variables with the post test level of sleep quality among elderly.

### MATERIALS AND METHODS

A quantitative approach of pre-experimental one group pre-test and post-test design was selected for this study. A total of 77 elderly were included by using total enumeration sampling technique. The elderly were divided into 4 groups. 3 groups consisted of 20 elderly and one group consisted of 17 elderly. The tool consisted of demographic variables such as Age, gender, marital status, number of children, religion educational status and family monthly income, clinical variables like perceived physical activity, number of years, in old age home, habits of day time sleep and hobbies and the Pittsburgh Sleep Quality Index (PSQI). The Pittsburgh Sleep Quality Index (PSQI) contained 19 self-rated questions and 5 questions were rated by the room mate (if one is available). Only self-rated questions were included in the scoring. The 19 self-rated items were combined to form seven component scores, each of which has a range of 0-3 points. A score of '0' indicates no sleep difficulty, while a score of '3' indicates severe sleep difficulty.

The seven components (subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, use of sleep medications and day time dysfunction) scores were then added to yield one "global" score, with a range of 0-21 points, "0" indicating no sleep difficulty and "21" indicating severe sleep difficulties in all areas. Pre-test level of sleep quality was assessed by using Pittsburgh Sleep Quality Index on the first day, followed by this the elderly were educated about sleep hygiene by using PPT for 20 minutes. Back massage performed by using the steps of effleurage, petrissage, tapotment, kneading to all the elderly twice daily (morning and at bed time) for 7 days for 10 minutes from day one and white noise played through a bluetooth speaker for 1 hour at bed time for a group of 17-20 elderly in the dormitory room daily for 7 days starting from day 1 onwards. Post-test level of sleep quality was assessed on the 8<sup>th</sup> day using the same PSQI scale.

### Plan For Data Analysis

The collected data were tabulated and analysed by using descriptive and inferential statistical methods. Frequency and percentage is used to describe the demographic variables. Mean and standard deviation is used to assess the pre-test and post-test level of sleep quality among elderly. Paired "t" test is used to find out difference between pre-test and post-test level of sleep quality among elderly. Chi-square test was used to find out the association between post-test score of sleep quality among elderly with their selected demographic variables.

## RESULTS & DISCUSSION

In the group, most of the elderly 43(55.8%) were aged between 66 – 70 years, 41(53.2%) were female, 57(74%) were married, 44(57.1%) had 3 – 4 children, 43(55.8%) were Hindus, 42(54.5%) had middle school education, 47(61.0%) had a family monthly income of rupees 5001 – 10,000, 74(96.1%) had normal / mild level of perceived physical activity, 41(53.2%) were staying at old age home for 3 – 6 years, 47(61%) had no habit of day time sleep and 35(45.5%) had the hobby of reading books.

In the pretest, 65(84.4%) had severe sleep difficulty and 12(15.6%) had moderate level of sleep difficulty whereas in the post test 60(77.9%) had no sleep difficulty and 17(22.1%) had mild level of sleep difficulty.

**Table 1: Effectiveness Of Nurse Led Intervention On Sleep Quality among Elderly**  
N – 77

| Component wise sleep quality | Pretest |      | Post Test |      | Mean Difference Score | Paired 't' test value      |
|------------------------------|---------|------|-----------|------|-----------------------|----------------------------|
|                              | Mean    | S.D  | Mean      | S.D  |                       |                            |
| Subjective sleep quality     | 2.74    | 0.44 | 0.25      | 0.54 | 2.49                  | t=31.255<br>p=0.0001, S*** |
| Sleep latency                | 2.70    | 0.46 | 0.10      | 0.31 | 2.60                  | t=41.871<br>p=0.002, S***  |
| Sleep duration               | 2.78    | 0.42 | 0.09      | 0.33 | 2.69                  | t=47.788<br>p=0.0001, S*** |
| Habitual sleep efficiency    | 2.08    | 0.89 | 0.16      | 0.37 | 1.92                  | t=16.088<br>p=0.0001, S*** |
| Sleep disturbances           | 2.87    | 0.34 | 0.21      | 0.44 | 2.66                  | t=44.211<br>p=0.0001, S*** |
| Use of sleep medication      | 0.00    | 0.00 | 0.00      | 0.00 | -                     | -                          |
| Daytime dysfunction          | 2.84    | 0.39 | 0.21      | 0.57 | 2.63                  | t=35.754<br>p=0.0001, S*** |
| Overall                      | 16.03   | 1.57 | 0.97      | 1.95 | 15.06                 | t=50.898<br>p=0.0001, S*** |

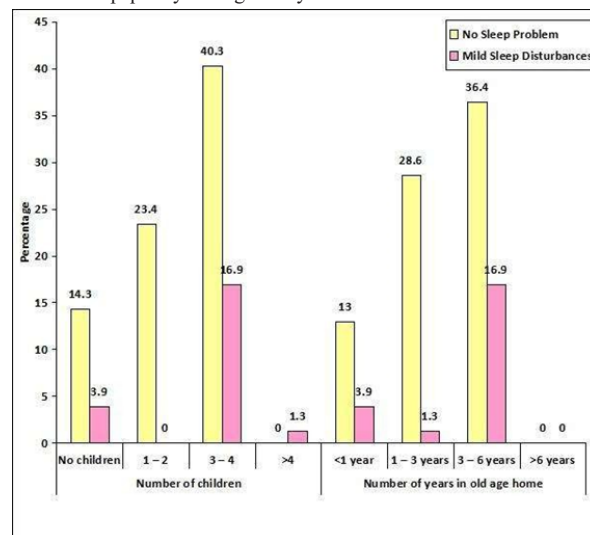
\*\*\*p<0.001, S – Significant

In the pre-test mean score of subjective sleep quality was  $2.74 \pm 0.44$  and the post-test mean score was  $0.25 \pm 0.54$ . The mean difference score was 2.49. The pretest mean score of sleep latency was  $2.70 \pm 0.46$  and the post-test mean score was  $0.10 \pm 0.31$ . The mean difference score was 2.60. The pre-test mean score of sleep duration was  $2.78 \pm 0.42$  and the post-test mean score was  $0.09 \pm 0.33$ . The mean difference was 2.69. The pre-test mean score of habitual sleep efficiency was  $2.08 \pm 0.89$  and the post- test mean score was  $0.16 \pm 0.37$ . The mean difference was 1.92. The pretest mean score of habitual sleep disturbances was  $2.87 \pm 0.34$  and the post-test mean score was  $0.21 \pm 0.44$ . The mean difference was 2.66. The pretest mean score of daytime dysfunction was  $2.84 \pm 0.39$  and the post-test mean score was  $0.21 \pm 0.57$ . The mean difference was 2.63. The pretest mean score of overall sleep quality was  $16.03 \pm 1.57$  and the post-test mean score was  $0.97 \pm 1.95$ . The mean difference was 15.06.

The study results were consistent with the study conducted by **Sharma K and Srivastava S (2018)** on effectiveness of sleep hygiene program on sleep quality and stress level in elderly population in New Delhi. The sample consists of 70 elderly aged over 85 years. Convenient sampling technique was used. The data was collected by Pittsburgh Sleep Quality Index Scale. The findings indicated that the study's Sleep Hygiene Program was successful in enhancing older participants sleep quality (M SD=pre-1.41 .496, post-2.64 0.742,  $t=-9.772$ ,  $p=0.001$ ). The study came to the conclusion that the sleep hygiene program is a crucial tool for enhancing elderly people's sleep quality and stress levels.

The calculated paired 't' test value for subjective sleep quality ( $t=31.255$ ,  $p=0.001$ ), sleep latency ( $t=41.871$ ,  $p=0.001$ ), sleep duration ( $t=47.788$ ,  $p=0.001$ ), habitual sleep efficiency ( $t=16.088$ ,  $p=0.0001$ ), sleep disturbances ( $t=44.211$ ,  $p=0.001$ ), daytime dysfunction

( $t=35.754$ ,  $p=0.001$ ) and the overall sleep quality ( $t=50.898$ ,  $p=0.001$ ) was found to be statistically significant at  $p<0.001$  level. These findings clearly infer that the nurse led interventions on sleep quality administered among elderly was found to be effective in improving the level of sleep quality among elderly.



**Fig. 1:** Association of number of children and number of years in old age home with post- test level of sleep quality among elderly

The study result was supported by Thichumpa W, Howteerakul N, Suwannapong N and Tantrakul V (2018) conducted a cross-sectional study on sleep quality and associated factors among the elderly living in rural Chiang Rai, Northern Thailand. Around 266 elderly were included in the sample. The technique of random sampling was applied. The Pittsburgh Sleep Quality Index Scale was used to get the data. According to the findings, factors that were significantly linked to poor sleep quality included being female (odds ratio [OR], 1.74; 95% confidence interval [CI], 1.10 to 3.02), having a higher education level (OR, 3.03; 95% CI, 1.34 to 6.86 for primary school; OR, 2.48; 95% CI, 1.31 to 5.44 for higher than primary school), mild depression (OR, 2.65; 95% CI, 1.11 to 6.36) and having strained family. The study came to the conclusion that healthcare professionals should frequently assess patients for depression and sleep quality, as well as offer sleep health education and conduct interventions to promote family participation in activities, dispute resolution, idea exchange, and compromise.

### Acknowledgement

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