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Effectiveness of a Multimodal Training Program on Sleep Quality, Stress, and Resilience among Nursing Officers in Tertiary Care Hospitals: A Quasi-Experimental Study

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ABSTRACT
Background: Nurses are the most important resources of any healthcare team. They are always involved in direct patient care and encounter their family members. Nurses have inevitable variations in their working hours. These circumstances make them vulnerable to develop stress and affect their quality of sleep which in turn affects their work performance.
Methods: This study was conducted in HSK hospital and research centre Bagalkot and Shanti Hospital Bagalkot. The participants were nursing officers working in selected hospitals of Bagalkot, who do night shift duty and whose sleep quality index score is more than 5. 120 Nursing officers (60 in the experimental group and 60 in the control group) were selected by the purposive sampling technique. A structured questionnaire was used to assess baseline information. PSQI scale was used to assess sleep quality, the Perceived Stress Scale was used to assess stress and the Brief Resilience Scale was used to assess resilience among nursing officers.
Results: post-test scores comparison between experimental and control groups showed that a significant difference was found in sleep quality (p<0.001), resilience (p<0.000) and level of perceived stress (p<0.001).
Conclusion: The multimodal intervention was significantly effective in improving the quality of sleep and resilience and reducing perceived stress among nursing officers working in tertiary care hospitals.

Key-words: Multimodal training program, Nurses/Nursing officers, Perceived stress, resilience, Sleep quality.

INTRODUCTION

Throughout the world, nurses encounter some common difficulties like work-related stress and poor quality of sleep due to many factors like swift rotation, work challenges, patient temper etc. Amidst these circumstances, the consequences can be chronic physical and psychological issues.[1] Sleep is the basic need for every living organism.

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Repeated sleep deprivation and stress can have long-term drastic effects on health. Nurses need interventions that can enhance resilience among them to improve their stress-handling capacities. One such strategy is to develop Basic Life skills among Nurses and train basic Yogasanas that can increase their body's ability to handle stress and improve the quality of sleep [2]. A study conducted in a tertiary care hospital in Mumbai, Maharashtra, found that the personality trait of neuroticism was higher in nurses with poor sleep. Neuroticism is a personality trait involving a long-term tendency to be in a negative or anxious emotional state.[3]
According to a study conducted by the American Cancer Society, it has been proved that short-duration sleepers

experienced increased mortality hazards. There is mounting evidence that night shift work has a significant impact on the health and performance of medical personnel due to alteration of natural homeostatic and circadian sleep processes, which can seriously compromise the public safety of both patients and medical staff by increasing the risk of errors and workplace accidents [4].

In night-shift workers, sleep displacement leads to the so-called "circadian misalignment" Chronic partial sleep deprivation represents an important risk factor for developing various diseases among nurses, primarily cardiovascular diseases type 2 diabetes, metabolic syndrome, gastrointestinal disorders, and cancer. Additionally, the interference with regular meal routines and the reduced physical activity contribute to the worsening of these pathological conditions.[5]

Nurses being a crucial part of the healthcare service sector [6], encounter an indefinite number of difficult situations that need tactful approaches to avoid the stress generated by it [7]. Nurses are the frontline workers who are in direct contact with patients and answer their family members [8]. India is a country where convincing is more difficult than confusing. It is always a challenge for Nurses to deal with patients and their family members with different levels of understanding [9]. Such encounters of the nurses have been underrated and not considered in the scope of their work [10]. The study aimed to determine the effectiveness of a multi-modal training programme on sleep quality, stress and resilience among nursing officers working in tertiary care hospitals of Bagalkot, Karnataka.

MATERIALS AND METHODS
Study Design- The study was conducted using a quasi-experimental research design. The data was collected from nursing officers working in tertiary care hospitals.

Study Area- The study was conducted in Hanagal Shri-Kumareshwar Hospital and Research Centre, Bagalkot and Shanti Multispecialty Hospital, Navanagar Bagalkot. HSK Hospital is in Navanagar, Bagalkot. HSK Hospital is functioning under the S. Nijalingappa Medical College and Research Centre, Bagalkot. The nursing officers are posted to night shift duty for at least 10 days a month.

Study population and sample- The study participants were nursing officers working in tertiary care hospitals.

Inclusion criteria- The study includes the nursing officers, available, willing to participate in the study and have worked in the hospital as a nursing officer for at least one year.

Exclusion criteria- The study excludes the nursing officers, who were involved in the use of complementary medicines or herbal therapy that influences sleep or participating in any other study intended to determine the effectiveness of any intervention on sleep quality.

Methodology- The researcher obtained formal permission from hospital authorities. The samples were selected by purposive sampling technique. The sample included the nursing officers who do night shift duty. The researcher approached all the nurses available in HSK Hospital and Shanti Hospital and enrolled the nurses who were willing to participate and expected to be available during the period of study. The researcher screened all the nursing officers for sleep quality and the nursing officers whose sleep quality index scores were more than 5 were enrolled in the study. The nurses selected from HSK Hospital were allocated to the experiment group and the nurses from Shanti Hospital were allocated to the control group.

Sample size calculation- A total of 120 Nursing officers were enrolled in the study (60 for the experimental group and 60 for the control group).
The sample size was calculated using G*power 3.1.9.4 software. Power analysis was done for the calculation of the sample size of two samples with 1:1 ratio. Since the primary objective was the comparison of outcome variables between the experimental and control groups 't test' and 'Mann-Whitney's test' was opted for calculation. 0.3 effect size was used for power analysis, with 5 % level of significance and 80% (0.80) power of the test.
The calculated sample size was 54 for the experimental group and 54 for the control group.
The final sample size, considering 10% attritions was 118. The sample size was rounded off to 120. Hence the final sample size considered for the research study was 60 nursing officers for the experiment group and 60 nursing offices for the control group.

So over 120 nursing officers working in tertiary care hospitals of Bagalkot, Karnataka, India were enrolled in the study.

Data collection- The study obtained formal approval from hospital authorities, ethical clearance (Ref: BVVS/SIONS/IEC/2023-24/312), and CTRI registration (CTRI/2023/12/060879). After obtaining informed consent, the pretest was conducted (11-20 Jan 2024). The intervention, a multimodal training program combining life skills, yoga, and task-based activities, was administered to the experimental group (22-29 Jan 2024), while the control group received no intervention. The post-test followed (11-20 Feb 2024).

Data collection tools included:
1. **Baseline Proforma**– Developed and validated by experts.
2. **Pittsburgh Sleep Quality Index (PSQI)**– Assessed sleep quality, with permission from the University of Pittsburgh.
3. **Perceived Stress Scale (PSS)**– Measured stress levels on a 10-item scale.
4. **Brief Resilience Scale**– Assessed resilience using a 6-item scoring system.

The intervention, conducted over 30 hours in 8 days, covered 10 life skills (e.g. self-awareness, stress coping, decision-making) through interactive activities. Yoga training included Ujjayi Breath, Veerabhadrasana, Balasana, Supta Baddha Konasana, Viparita Karni, Savasana, and Pranayama. Participants were divided into two groups (morning and evening) for training.

Statistical Analysis- The data was analyzed using SPSS version 20. The data was entered in a Microsoft Excel sheet. Categorical data of baseline information was coded and the continuous data was entered as it is. The responses of PSQI were scored, the scores of all 7 components were entered separately and the global score was prepared from them. The description of data was done with frequency and percentage distribution and cross tabs. The normality of data was assessed by Shapiro Wilk test. Mann- Whitney U test was used to compare the outcome variables of experimental and control groups.

RESULTS

The mean age of participants was 28.8 ± 4.26 years, most of the respondents were females (66 %) and 44% were males, 81% of the respondents had less than 2 years of experience and 8% had more than 10 years of clinical work experience, 12% of the respondents were working in intensive care units, 73% were married and 27% were single, 68% were from nuclear family and 32% were from joint family. Only 44% of the participants were doing physical exercise at least 5 days a week, 25% of the respondents used to consume alcohol and 12% consumed tobacco (Table 1).

Table 1: Sleep quality and its component score before implementation of intervention among nurses working in tertiary care hospitals

Components of quality of sleep	Scores	Experimental groups		Control groups	
		F	%	F	%
Subjective sleep quality	Very good	0	0	0	0
	Fairly good	27	45	24	40
	Fairly bad	24	40	28	46.7
	Very bad	9	15	8	13.3
Sleep latency	0	0	0	0	0
	1–2	33	55	28	47
	3–4	20	33	24	40
	5–6	7	12	8	13

Duration of sleep	Greater than 7 h	0	0.0	0	0.0
	6–7 h	35	58.3	29	48.3
	5–6 h	17	28.3	21	35.0
	Less than 5 h	8	13.3	10	16.7
Habitual sleep efficiency	Greater than 85%	13	22.5	12	20
	75–85%	30	50	26	43.3
	65–74%	9	14.2	13	21.7
	Less than 65%	8	13.3	9	15.0
Disturbance in sleep	0	0	0	0	0
	1–9	46	76.7	38	63.3
	10–18	14	23.3	22	36.7
	19–27	0	0	0	0
Use of sleep medication	Not during the past month	42	70.0	44	73.3
	Less than once a week	14	23.3	10	16.7
	Once or twice a week	4	6.7	6	10.0
	Three or more times each week	0	0.0	0	0.0
Daytime dysfunction	Never	8	13.3	10	16.7
	Once or twice	33	55.0	27	45.0
	Once or twice each week	16	26.7	18	30.0
	3/> times each week	7	11.7	5	8.3
Global mean PQSI score	Mean±SD	7.92 ±3.21		8.01±3.88	

h: hours, F: Frequency, %: Percentage, N$_1$: experiemental group, N$_2$: Control group

Perceived level of stress and resilience among Nursing officers: before the implementation of the training program, a high level of stress was found among 56.7% of nursing officers, 25% had a moderate level and 18.3% had a low level of stress. 56.7% of nursing officers had moderate resilience. 25% had a high level of resilience and 18.3% had a low level of resilience. Comparison of quality of sleep (Table 2) shows a significant difference in post-test sleep quality component scores and Global PSQI scores between nursing officers of the experimental group and control group.

Table 2: Effectiveness of multimodal interventional program on quality of sleep

PSQI component	Experimental group		Control group		p-value
	Pretest mean±SD	Post-test mean± SD	Pretest mean±SD	Post-test mean± SD	
Subjective Sleep Quality	0.41±0.82	0.21±0.46	0.46±0.42	0.45±0.44	0.012*
Sleep Latency	1.21 ±0.98	1.01±0.76	1.46±1.16	1.48±1.22	0.141
Sleep Duration	1.54 ±1.21	1.23 ±0.98	1.38±1.08	1.36±1.12	0.032*
Habitual Sleep Efficiency	0.92 ±0.44	0.67 ±0.41	1.02±0.82	1.06±0.96	0.001*

Sleep Disturbance	1.46 ±1.11	1.26 ±1.03	1.29±0.98	1.16±1.01	0.081
Use of Sleeping Medication	0.36 ±0.28	0.21 ±0.09	0.42±0.36	0.43±0.28	0.013*
Day Time Dysfunction	1.72 ±1.46	1.31 ±1.06	1.81±1.42	1.76±1.36	0.016*
PSQI total score	7.92 ±3.21	4.87 ±2.89	8.01±3.88	7.98±4.12	0.001*

α=0.05* Significant, Mann Whitney test, SD Standard deviation, N_1: experiemental group, N_2: Control group

The global PQSI score was significantly lower (p<0.001) in the experimental after the intervention as compared to the control group. Cohen's d value of 0.81 suggests a substantial difference between the overall sleep quality of nursing officers of the experimental group and the control group. A significant difference was observed in 4 components of sleep quality. There was a significant reduction in component scores in the experimental group after the intervention whereas there was no noticeable difference in these components in the control group.

The Multimodal intervention was significantly effective in improving many components of sleep quality. The subjective sleep quality score in the experimental group reduced from 0.41±0.82 in the pretest to 0.21±0.46 in the post-test. A significant difference was found in post-test subjective sleep quality scores (p<0.012) of the experimental group and control group Subjective sleep quality (p<0.012), Sleep duration (p<0.032), Habitual sleep efficiency (p<0.013) and day time dysfunction (p<0.016).

Table 3: Effectiveness of multimodal interventional program on perceived stress and quality of sleep

Outcome variable	Experimental group		Control group		p-value
	Pretest mean±SD	Post-test mean± SD	Pretest mean±SD	Post-test mean± SD	
Stress	29.72±3.08	25.68±2.67	28.96±3.26	28.88±3.12	0.001*
Resilience	19.88±2.20	22 ±1.5	20.15 ±2.84	20.04±2.17	0.000*

α=0.05* Significant, SD Standard deviation, N_1: experimental group, N_2: Control group

The multi-modal program was effective in improving resilience and reducing stress among nursing officers (Table 3). The mean resilience post-test scores (22±1.5) were significantly higher in the experimental group as compared to the control group (20.04±2.17) showing a significant difference in resilience scores of both the groups (p<0.000*, α:0.05) Similarly, there was a significant difference (p<0.001, α:0.05) between post-test perceived stress scores of the experimental group (25.68±2.67) and control group (28.88±3.12).

DISCUSSION
The study was intended to determine the effectiveness o f multimodal training programs on the quality of sleep, stress and resilience among nursing officers working in tertiary care hospitals. It was a quais experimental study comparing two groups of nurses, with only one group receiving the intervention. The intervention was a blend of life skill training, yoga asanas and task-oriented

activities administered for 30 hours divided into 8 days. The data regarding sleep quality was assessed by the PSQI scale, Stress was assessed by the Perceived Stress scale and resilience was assessed by the brief resilience scale. Baseline data was assessed by the questionnaire prepared by the researcher himself. The researcher screened the nursing officers and the nursing officers with PSQI score 5 or above were enrolled in the study.

The experimental group showed a significant improvement in the overall sleep quality and various components of sleep quality. Before the implementation of the training program, 40% of the subjects of the experimental group and 46.7% of the subjects of the control group had fairly bad subjective sleep quality, more than 15% of subjects of the experimental group and 13.3% of subjects of the control group had very bad subjective sleep quality. All the subjects of the experimental group and control group had disturbances in sleep quality. The results were consistent with the

studies conducted to determine the sleep quality among nurses using the PSQI scale in which 43% of nurses were found with poor sleep quality in Manipur India [5], 61.9% in Istanbul[1], 63% of nurses were found with poor sleep quality in Maharashtra [3].

There was a significant improvement in the sleep quality among subjects of the experimental group after attending the training program. The post-test overall PSQI score was significantly reduced in subjects of the experimental group compared to subjects of the control group. Significant improvement was seen in the sleep quality components of subjects in the experimental group as compared to subjects of the control group. The Multimodal intervention was significantly effective in improving many components of sleep quality. The subjective sleep quality score in the experimental group reduced from 0.41±0.82 in the pretest to 0.21±0.46 in the post-test. A significant difference was found in post-test subjective sleep quality scores ($p < 0.012$) of the experimental group and control group, Sleep duration ($p < 0.032$), Habitual sleep efficiency ($p < 0.013$) and daytime dysfunction ($p < 0.016$). The results were consistent with a similar study conducted in New Delhi, where, 38.68% improvement was found in the quality of sleep after attending the training program [11]. A similar pilot randomized controlled trial was conducted in a Spanish university with a sample of 60 nursing students.[12] In a quasi-experimental study, non-pharmacological measures were found effective in improving sleep quality among elder people [13]. Contradictory results were found in a study conducted in the Netherlands in which, no differences were found in subjective sleep quality and sleep duration before and after the intervention[14]. Similarly, an experimental study was conducted to determine the effectiveness of internet-based intervention on sleep quality. The intervention was not significantly effective in improving sleep quality, because the the measure was not culturally accepted [15]. In a similar study in which the sleep quality was measured using PQSI, a significant difference was observed in subjective sleep quality, sleep latency and daytime dysfunction [16,17]. A reviewed study found that nursing interventions are effective in improving the quality of sleep [18,19].

The results were consistent with a study conducted to determine the effectiveness of sleep improvement intervention among university employees, in which compared to the pretest, a significant improvement was observed in sleep quality in the post-test.[20] The present study shows that there was a significant difference in mean stress levels before and after the intervention The results were consistent with a pre-experimental study to determine the effectiveness of stress management intervention on the level of stress among 30 nurses working in critical care units of a medical college hospital, Thiruvananthapuram, Kerala, in which the intervention was found significantly effective in reducing stress among nurses [21]. In a pre-experimental study conducted on a sample of 33 nurses, the nursing intervention was found significantly effective in reducing job-related stress.[22] Effect of life skills training program was found effective in reducing stress among adolescents.[23] The effect of a resilience training program with Health application was found effective in reducing stress among nurses working in intensive care units.[24]

In the present study, a significant improvement was observed in post-test resilience scores compared to the pretest scores of nursing officers. The results were consistent with the results obtained in a randomized controlled trial in which Significant improvements were seen in the resilience scores of nurses of the experimental group who attended the Group intervention program. Resilience intervention proved to be effective in improving resilience among nurses.[25]

CONCLUSIONS

The multimodal training program was significantly effective in improving the quality of sleep and resilience and reducing perceived stress among nursing officers working in tertiary care hospitals. The night duty shifts are inevitable for nurses or any other health care personnel hence hospitals should regularly conduct such programs that improve resilience and reduce stress among nursing officers. Good sleep is a basic physiological need of every human being hence the disturbance must be compensated by strengthening lifestyle practices among such personnel who must adapt their lifestyle to fluctuating working hours and related rest or sleep.

CONTRIBUTION OF AUTHORS

Research concept- Dr. Utalbasha N. Dhandargi

Research design- Dr. Utalbasha N. Dhandargi

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Data collection- Dr. Utalbasha N. Dhandargi

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Article editing- Dr. Utalbasha N. Dhandargi

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REFERENCES

[1] Tarhan M, Aydin A, Ersoy E, Dalar L. The sleep quality of nurses and its influencing factors. Eurasian J Pulmonol., 2018; 20(2): 78-84.

[2] Parajuli N, Pradhan B, Jat M. Effect of four weeks of integrated yoga intervention on perceived stress and sleep quality among female nursing professionals working at a tertiary care hospital: A pilot study. Ind Psychiatry J., 2021; 30(1): 136-40.

[3] Sarang SD, Shitole RB, Karnam AG. To investigate the association between sleep and happiness among nurses with different personality traits: A cross-sectional study. Indian J Occup Ther., 2019; 51: 3-7.

[4] Alfonsi V, Scarpelli S, Gorgoni M, Pazzaglia M, Giannini AM, et al. Sleep-Related Problems in Night Shift Nurses: Towards an Individualized Interventional Practice. Front Hum Neurosci., 2021; 15: 644570.

[5] Christina S, Konjengbam S. Sleep quality among nurses in a tertiary hospital in Manipur. J Med Soc., 2019: 33(3): 146-51.

[6] World Health Organization. Nursing and Midwifery. May 2024. Available at: Nursing and midwifery.Available at: https://www.who.int/news-room/fact-sheets/detail/nursing-and-midwifery.

[7] Registered Nurses. How do you handle challenging situations in Nursing? Oct-2023. Available at: How Do You Handle Challenging Situations in Nursing?-Registered Nurses.

[8] Ding S, Deng S, Zhang Y, Wang Q, Liu Z, et al. Experiences and needs of front-line nurses during the COVID-19 pandemic: A systematic review and qualitative meta-synthesis. Front Public Health, 2022; 10: 805631. doi: 10.3389/fpubh.2022.805631.

[9] Nursing Education. Nurse Insights: How Do Nurses Handle Difficult Patients and Families?. May 2024. Available at: How Do Nurses Handle Difficult Patients and Families?. Nursing Education.

[10] Paterson LA, Maritz JE. Nurses' experiences of the family's role in end-of-life care. Health SA, 2024; 29: 2565. doi: 10.4102/hsag.v29i0.2565.

[11] Pradhan B, Jat M. Effect of four weeks of integrated yoga intervention on perceived stress and sleep quality among female nursing professionals working at a tertiary care hospital: A pilot study. India Psychiatry J., 2021; 30: 136-40.

[12] Ruiz-Zaldibar C, Gal-Iglesias B, Azpeleta-Noriega C, Ruiz-López M, Pérez-Manchón D. The Effect of a Sleep Intervention on Sleep Quality in Nursing Students: Study Protocol for a Randomized Controlled Trial. Int J Environ Res Public Health, 2022; 19(21): 13886. doi: 10.3390/ijerph192113886.

[13] Gu HJ, Lee OS. Effects of Non-Pharmacological Sleep Interventions in Older Adults: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health, 2023; 20(4): 3101. doi: 10.3390/ijerph20043101.

[14] Elk FV, Holst HM, Robroek BA, Hengel K. Effects and implementation of an intervention to improve sleep, fatigue and recovery among healthcare workers with night shifts: A pre-and post-test study. Int J Nurs Study, 2024; 160: 104881. doi: 10.1016/j.ijnurstu.2024.104881.

[15] Vispute S, Mandlik R, Sanwalka N, Gondhalekar K, Khadilkar A. Dietary diversity and food variety scores and their association with nutrition and health status of Indian children and adolescents: A multicenter study. Nutr., 2023; 111: 112039. doi: 10.1016/j.nut.2023.112039.

[16] Bani IW, Hijazi H, Radwan H, Saqan R, Al-Sharman A, et al. Evaluation of the effectiveness of sleep hygiene education and FITBIT devices on quality of sleep and psychological worry: a pilot quasi-experimental study among first-year college students. Front Public Health, 2023; 11: 1182758. doi: 10.3389/fpubh.2023.1182758.

[17] Rayward AT, Plotnikoff RC, Murawski B, Vandelanotte C, Brown WJ, et al. Efficacy of an m-Health Physical Activity and Sleep Intervention to Improve Sleep Quality in Middle-Aged Adults: The Refresh Study Randomized Controlled Trial. Ann Behav Med., 2020; 54(7): 470–83, doi: 10.1093/abm/kaz064.

[18] Ashghab A, Vahedian-Azimi A, Vafadar Z. Nursing Interventions to Improve the Sleep Quality of Hospitalized Patients: A Systematic Review and Meta-analysis. Int Care Res., 2024; 4: 55–71.

[19] Mendonça SC, Martins DMS, Durão C, Teixeira JMF, da Silva R, et al. Sleep-Enhancing Nursing Interventions in Hospital Wards: A Systematic Review. Int Nurs Rev., 2025; 72, e13062. doi: 10.1111/inr.13062.

[20] Eigl E-S, Urban-Ferreira LK and Schabus M. A low-threshold sleep intervention for improving sleep quality and well-being. Front Psychiatry, 2023; 14: 1117645. doi: 10.3389/fpsyt.2023.1117645.

[21] Light Irin C, Bincy R. Effect of stress management interventions on job stress among nurses working in critical care units. Nurs J India, 2012; 103(6): 269-71.

[22] Olga QZM, Claudia FI, Maria TGR, et al. Effect of nursing interventions for stress management. Hos Pal Med Int J., 2018; 2(2): 99–105. doi: 10.15406/hpmij.2018.02.00064.

[23] Behjat B, Abbas B. Effects of Life Skills Training on Stress Reduction and Coping Style in Adolescents Living in Foster Homes. J Basic Appl Sci Res., 2012; 2(8): 7618-22.

[24] Abbasalizadeh M, Farsi Z, Sajadi SA. The effect of resilience training with mHealth application based on micro-learning method on the stress and anxiety of nurses working in intensive care units: a randomized controlled trial. BMC Med Educ., 2024; 24: 442. doi: 10.1186/s12909-024-05427-w.

[25] Zhang Y, Murphy J, Lammers-van der Holst HM, Barger LK, et al. Interventions to improve the sleep of nurses: A systematic review. Res Nurs Health, 2023; 46(5): 462-84. doi: 10.1002/nur.22337.