



## Shift Work Disorder and Related Health Problems Among Nurses in a Tertiary Care Hospital: A Comparative Study

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### Abstract

**Introduction:** Shift Work Disorder (SWD) is a sleep disorder characterized by sleepiness and insomnia, attributed to work schedules. Understanding the mechanisms behind shift work-related health problems is crucial for managing schedules, employment, treatment, and employee selection. **Objective:** To assess SWD prevalence and related health problems among nurses in a tertiary care hospital. **Materials and Methods:** A descriptive cross-sectional study was conducted in a tertiary care hospital. Simple random sampling selected 130 nurses. Written consent was obtained, and structured interviews using the Standard Shift Work Index and Bergen Shift Work Sleep Questionnaire (BSWSQ) were conducted. **Results:** The mean age of the nurses was  $27.4 \pm 2.64$  years. SWD prevalence was 43.07%. Common complaints included headache (60.0%), back pain (57.6%), gastritis (32.3%), and menstrual disorders (30.0%). Anxiety and depression were found in 17.6% and 23.8% of participants, respectively. SWD was significantly associated with increasing age, more nights worked per year, and longer working hours. 53.8% of nurses had sleep problems according to the BSWSQ. **Conclusion:** The study highlights a high prevalence of SWD and associated health problems among nurses, emphasizing the need for interventions such as behavioral changes, rotating shifts, and treatment.

**Keywords:** Health problems among nurses, nurses, shift work disorder

### INTRODUCTION

Nursing is a critical profession in the healthcare industry, with nurses playing a central role in patient care. The quality of care provided to hospital patients is strongly influenced by the performance and well-being of nursing staff. Therefore, creating a healthy work environment for nurses is essential to ensure the effectiveness of healthcare services. (Tankha, 2006)

Shift work is common among nurses in tertiary care hospitals, as they often work round-the-clock to provide continuous care to patients. However, shift work has been associated with various health problems such as cardiovascular disease, digestive issues, fatigue, cancer, depression, anxiety, and sleep disturbances. The American Academy of Sleep Medicine (AASM)'s International Classification of Sleep Disorders-2 (ICSD-2) defines Shift Work Disorder (SWD) as complaints of insomnia or excessive sleepiness related to recurring work schedules overlapping with normal sleep times, persisting for at least one month, and not attributed to other sleep, mental, medical, or substance use disorders. (Parent-Thirion et al., 2007)

There is a lack of studies on the prevalence of SWD and its associated health problems among nurses in India. This study aims to fill this gap by identifying the prevalence of SWD and its contributing factors in a typical tertiary care hospital setting. Understanding these issues can lead to targeted interventions to improve nurses' work-life quality, enhance patient care, and reduce nurse turnover.

## **MATERIALS AND METHODS**

A cross-sectional study was conducted among staff nurses in a tertiary care hospital. The study included staff nurses with at least 12 months of service in the hospital, excluding those not assigned to shift duties. The sample size of 130 nurses was determined based on previous study prevalences.

Nurses were selected through simple random sampling from a list obtained from the Nursing Superintendent's office. Contact details were gathered from the hospital's Personnel Department, ensuring no disruption to daily routines. Informed consent was obtained from participants, who were then interviewed for demographic information, work-related details, and health status, including chronic illnesses.

The structured interview included:

1. Demographic details and study variables: Age, gender, marital status, religion, duration of work, etc.
2. Work schedule details: Shift timings, average daily working hours, sleep difficulties, excessive sleepiness.
3. Standard Shift Work Index Questionnaire: Assessing shift work-related problems.
4. Bergen Shift Work Sleep Questionnaire (BSWSQ): Evaluating sleep problems.

The study was approved by the Institutional Ethical Committee. After explaining the study's purpose and procedure, written consent was obtained. Data were analyzed using SPSS version 16, with measures of central tendency, dispersion, and Chi-square tests for associations. Fisher's exact test was used when appropriate.

Statistical significance was considered at  $p < 0.05$ , with Fisher's exact test applied when more than 20% of cells in tables had values less than 5.

## **RESULTS**

The study included 130 female nurses, with approximately 68% aged less than 30 years and a mean age of  $27.4 \pm 2.64$  years. About half of the nurses had 1-2 years of work experience. The majority (84.6%) had worked around 50-100 night shifts in the last 12 months, and 54.6% had 1-2 years of experience in shift duties.

The prevalence of Shift Work Disorder (SWD) among nurses was 43.07%. Notably, 31.5% of those with SWD were less than 30 years old, and 26.9% had 1-2 years of work experience. Common complaints related to shift work included headache, back pain, gastritis, menstrual disorders, anxiety, and depression. Additionally, 53.8% of nurses had sleep problems according to the Bergen Shift Work Sleep Questionnaire (BSWSQ). Furthermore, 45.3% reported consuming more beverages with caffeine during shift work.

Statistical analysis revealed a significant association between SWD and age, as well as the number of night shifts worked per year. However, no significant associations were found between SWD and marital status, place of stay, duration of work, years of shift duties, or sleep problems in the multivariate analysis.

## **DISCUSSION**

The prevalence of Shift Work Disorder (SWD) among nurses in our study was 43%, which aligns with findings from previous studies. Young nurses aged less than 30 years and those with 1-2 years of experience were more likely to experience SWD, possibly due to their adaptation to shift work mechanisms. This highlights the importance of education and counseling before assigning shift duties to nurses. (Härmä & Kecklund, 2010)

A study in Norway also reported a high prevalence of SWD among nurses, particularly in schedules involving night shifts. They found a positive relationship between the number of night shifts worked and SWD, similar to our findings. Further research is needed to understand the specific reasons for this phenomenon and to develop targeted interventions. (American Academy of Sleep Medicine, 2005)

Studies, such as one conducted in Rajasthan, have shown similar health problems among nurses in rotating shift schedules, including gastrointestinal issues and sleep problems. These health issues may be related to

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disruptions in the biological clock under stressful conditions, emphasizing the need for addressing these challenges in shift work environments. (Flo et al., 2012)

Our study had limitations, such as potential confounding variables and recall biases. Nonetheless, awareness of the impact of shift work on health is crucial for scheduling, treatment, and employee selection in healthcare settings. (Saksvik et al., 2011)

Shift work is common in healthcare professions, and SWD and related health problems are significant concerns. More research is needed to differentiate between sleep issues related to shift work and those unrelated, and to explore interventions to alleviate health problems associated with work schedules. (Sack et al., 2007)

### **CONCLUSION**

While nurses cannot be exempted from shift duties, interventions such as behavioral changes for better sleep hygiene, forward rotating shifts, treatment options like sleep medicine, counseling, and regular screening can improve their quality of life and ability to cope with shift work. Incorporating these measures into induction training programs for nurses and reinforcing them periodically can contribute to better occupational health outcomes.

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