



A STUDY TO ASSESS THE RISK OF SHIFT WORK DISORDERS AMONG NURSING STAFF WORKING IN SELECTED HOSPITALS OF JABALPUR CITY, M.P. WITH A VIEW TO DEVELOP AN INFORMATION BOOKLET

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ABSTRACT:

This study has been undertaken to assess the risk of shift work disorders among nursing staff working in selected hospitals of Jabalpur city, Madhya Pradesh (M.P). with a view to develop an information booklet. The objectives of the study were to Assess the risk of shift work disorders among nursing staff working in selected hospitals of Jabalpur city, to determine the association between risk of shift work disorders among nursing staff with their selected socio-demographic variables and to determine the association between risk of shift work disorders among nursing staff with their selected clinical variable. The conceptual framework adopted for this study was developed on the basis of Ludwig von Bertalanffy's (1968) general system theory. In the present study, investigator has adopted a Descriptive Non-Experimental research design. The samples were staff nurses who are working in Marble City Hospital & Research Centre (P) Ltd, Jabalpur. The size of samples were 100 staff Nurses. Samples were selected through Convenient sampling technique. Data was collected by using "Modified Questionnaire to screen for risk of shift work disorders" during the month of April and May. Information Booklet was given after data collection. Data collected was analyzed and interpreted using descriptive and inferential statistics. The result obtained from the study shows that Out of 100 staff nurses, the majority 64 (64 %) were having low risk of shift work disorder, 22 (22%) were having moderate risk and only 14 (14%) were having high risk of Shift work disorder.

KEY WORDS:

Assess, Risk, Shift work, Shift work disorder, Nursing Staff, Information Booklet.

I. INTRODUCTION

"Everyday day, the nurse confronts stark suffering, grief and death as few people do. Many nursing tasks are mundane and unrewarding. Many are, by normal standards, distasteful. Others are often degrading; some are frightening". (Hingley, 1984).

Shift work is common in many sectors. Hospitals, the biggest employer in the health care field, employ more night shift workers than any other industry. It can therefore be inferred that in medical domain high percentage of workforce may be affected by the problems related to shift work. Shift work is associated with sleep disruption, impaired quality of life, and is a risk factor for several health conditions. Nurses in hospitals across the world work shifts in order to provide patient care across 24 hours of the day. Shift work, which for nurses often includes practicing overnight, causes the disruption of several natural processes, leading to circadian misalignment, disturbed sleep, and light induced suppression of melatonin levels at night.

For both healthcare workers (HCWs) employed in hospital wards and healthcare organizations Shift work disorder (SWD) is a major concern. Increased service costs and lower standards of care are the consequences of Shift work disorders. Shift work is associated with sleep disruption, impaired quality of life, and is a risk factor for several health conditions. Shiftwork comes with many inherent risks caused by sleep disturbance leading to excessive sleepiness and fatigue in the workplace. This can lead to poor concentration, absenteeism, accidents, errors, injuries, illnesses and fatalities. Shift work disorder (SWD), which is characterized by insomnia and excessive sleepiness related with shift work, is one of the most common health problems in shift workers. Shift work

disorder causes insomnia, fatigue, worse work performance, an increased likelihood of accidents and a poor quality of life. In addition, SWD is associated with decreased productivity and increased economic costs.

Most people who live with shift work disorder lose one to four hours of sleep during each 24-hour period. Since most adults need seven to nine hours of rest every day, this amount of sleep deprivation can incur significant sleep debt. Insomnia symptoms are common for people with shift work disorder. These symptoms manifest in different ways depending on the nature of a person's work schedule. For example, employees who begin their shifts between 4 and 7 a.m. often experience problems with sleep onset, while those who work evening shifts typically have trouble with sleep maintenance. In addition to insomnia symptoms, many people with shift work disorder also experience excessive sleepiness while they are awake. The inability to stay alert and focused at your job site can also have a detrimental effect on your work performance and safety, as well as your abilities to communicate with coworkers and handle stressful situations. Additionally, excessive sleepiness increases your risk of being involved in a vehicular accident due to drowsy driving during your work commute.

(Sleep Foundation, April 18, 2022)

The prevention of shift work disorder (SWD) In health-care workers (HCWs) is a special challenge for both health-care organizations and HCWs, trough the world. Following the definition made by Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM V), SWD is a type of circadian rhythm sleep disorder and is characterized by complaints of insomnia and/or excessive sleepiness that occurs in relation to work hours being scheduled during the usual sleep period. Bøggild and Knutsson (1999) reported that shift workers are more likely than regular day workers to be smokers. Finally, shift work may disrupt social and family relationships, by putting the worker's daily pattern of work and rest out of phase with that of family, friends and the social life of the community. This social disruption can also contribute to stress and thereby to adverse health outcomes. (Institute for work & Health, 2010)

Nursing is a lifesaving profession and nurses play a pivotal role in the health-care industry. If nurses who are the "*Symbol of service and humanity*" are troubled by their own ill health or other stressful circumstances, then they will not be able to give their full attention to this demanding task. No hospital can function effectively if there is high incidence of ill health among nurses. Quality of care for hospital patients is strongly linked to the performance of the nursing staff. In line with this, creating a healthy work environment for nurses is crucial to maintaining an adequate nursing workforce.

(South African Department of Health, 2003)

Not many studies have been published on assessing the risk of Shift Work Disorder (SWD) and its related health problems among nurses especially in India. This study will help to assess the risk of Shift Work Disorders and its associated factors in a typical tertiary care setting. Thereafter, interventions can be planned to improve the quality of work life of nurses that in turn improves the quality of patient care, thereby beneficial for the management. Nurses' turnover could be minimized which is a major problem in the discontinuity of the patient care. This study would give an opportunity for the nursing staff to express their difficulty in professional life especially during the shift work.

If untreated, shift work disorder can lead to major health concerns. The condition may also negatively impact the worker's professional performance and put them at a higher risk of committing an error or being involved in a workplace accident. When compared with other professionals, health care personnel's especially nurses would exert a direct effect on their physical health and mental depression, which in turn would then affect other aspects of the nurses' lives. So, the present study is an attempt to assess the risk of shift work disorders among nursing staff and create awareness by distributing an information booklet regarding shift work disorders and its coping strategies, which will help the nurses to change their attitude towards their health. This study would give an opportunity for the nursing staff to express their difficulty in professional life especially during the shift work.

OBJECTIVES OF THE STUDY

The objectives of the study were to

- Assess the risk of shift work disorders among nursing staff working in selected hospitals of Jabalpur city.
- Determine the association between risk of shift work disorders among nursing staff with their selected socio-demographic variable.
- Determine the association between risk of shift work disorders among nursing staff with their selected clinical variable.

II. REVIEW OF LITERATURE

Jorgensen J T (2021) conducted a Cohort study to assess Shift work and incidence of psychiatric disorders among on 19,964 female nurses (≥ 44 years). The result showed that there is a significant association between night shift work with mood disorders (HR = 1.31; 95%CI = 1.17-1.47) and neurotic disorders (1.29; 1.17-1.42), compared to day work. Associations were enhanced in nurses with persistent night shift work (1.85; 1.43-2.39 and 1.62; 1.26-2.09 for mood and neurotic disorders, respectively) and in nurses with specialist confirmed mood (1.69; 1.24-2.29) and neurotic (1.72; 1.22-2.44) disorders. Nurses with preexisting psychiatric disorders and full-time work seemed most susceptible. The study concluded that the night shift work is associated with increased risk of major psychiatric disorders.

Vaishali T (2020) conducted a study to assess the Impact of shift work on excessive daytime sleepiness among health care professionals. Result showed that the overall ESS score was statistically similar between both the physicians, whereas, the ESS score was nearly 11 or more in private physicians as they were more prone to the higher rate. Furthermore, the working hours per week were higher in surgery attending physicians that are around 72 h than those with primary care physicians who worked nearly 62 h. The risk of Excessive Daytime Sleepiness among health-care professionals, especially in night shift workers and all this happens due to inappropriate sleep patterns. Besides, the nurses and physicians who were attending a higher number of on-call/overnight work were at higher risk of an increased ESS score. The study concluded that the long working hours or shift work

is a major problem in health-care settings. It increases the risk of EDS (Excessive Daytime Sleepiness) among health-care professionals, especially in night shift workers and all this happens due to inappropriate sleep patterns. Besides, the nurses and physicians who were attending a higher number of on-call/overnight work were at higher risk of an increased ESS (Epworth Sleepiness Scale) score.

Jayanth J (2019) conducted a Cross-Sectional Hospital-based study to assess the prevalence of Shift Work Disorder and related health problems among nurses in a tertiary care hospital, Chennai, South India. The study population comprised of 129 nurses. The study finds that headache (46%), gastrointestinal and digestive problems, such as indigestion, heartburn, stomach ache and loss of appetite, were (43%) and mild cardiovascular problems such as palpitation, tight chest were found to be (38%) and sleep problems were found more common during their morning shifts. It is also found that older individuals tend to have a higher chance of SWD due to increased workload. The study concluded that the shift work and related health problems pose a negative impact on the health of the health care individual and society. Awareness against SWD is very much important as most of the health care individual work in shift basis, hence health education, awareness among workers regarding their work schedules, shifts, holidays, and treatment plays a major role in treating SWD.

III. RESEARCH METHODOLOGY:

Research Approach: The research approach for the study was Quantitative Evaluative Research Approach.

Research Design: The research design adopted for the study was Descriptive Non-Experimental Research Design.

Population: The target population was Staff Nurses working in Marble City Hospital and Research Centre (P) Ltd, Jabalpur.

Sample: The samples of the study were staff Nurses working in Staff Nurses working in Marble City Hospital and Research Centre (P) Ltd, Jabalpur.

Sample size: Total sample size were 100 staff Nurses. The sampling technique used in this study were Purposive sampling technique.

Sampling technique: The sampling technique used in this study were Convenient sampling technique.

Sample Selection Criteria: The sample selection criteria used by the researcher included the following criteria. Inclusion criteria for samples includes Staff nurses who were willing to participate and both male and female Staff Nurses. Exclusion criteria for sampling includes staff nurses who was not available at the time of data collection.

Data collection Method and Tools: Tools in this study consists of three parts; Section A: Socio demographic data, Section B: Clinical Variables and Section C: Modified Structured Questionnaire to assess the risk of shift work disorders among staff Nurses.

Data Analysis: The socio demographic data is analyzed using descriptive statistics i.e., frequency distribution and percentage. The data related to assessment of risk of shift work disorders among nursing staff is analyzed by Mean and Chi square test.

IV. DATA ANALYSIS

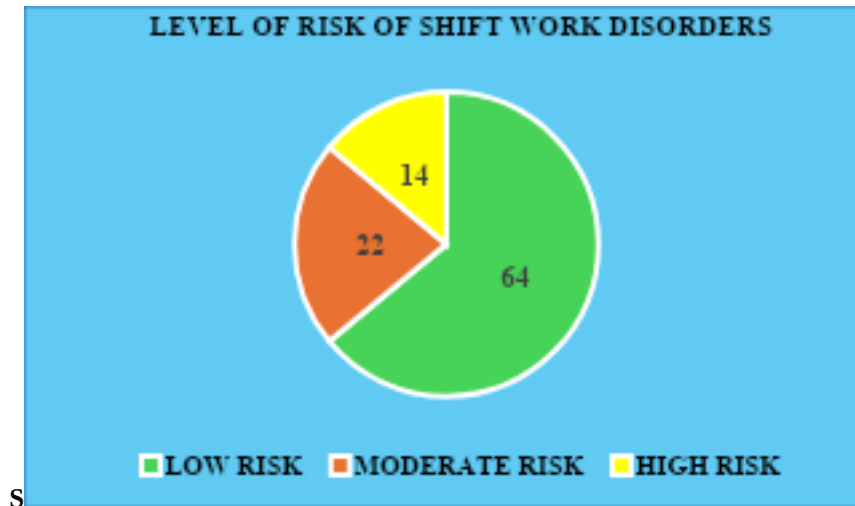
The association between risk of shift work disorders among nursing staff with their selected Socio demographic variable is statistically tested by applying chi-square test and the 8 variables Type of family, Monthly income of the family, place of residence, educational qualification, period of work experience, frequency of getting night shifts, department of work, hours of working in a single shift were found significant and 6 variables Age (in years), marital status, duration of night shift days, workload of the job, number of staff in a single shift, special certification programme related to posted unit were found not significant.

The association between risk of shift work disorders among nursing staff with their selected Clinical variable is statistically tested by applying chi-square test and 9 variables history of hypertension, history of diabetes mellitus, history of thyroid problems, history of arthritis, history of fibromyalgia, use of sleeping pills/ Over The Counter medicines, presence of job stress, menstrual history, dietary pattern were found significant and 4 variables body mass index, other musculoskeletal problems, recent surgical treatment and family history of sleep disorders were found not significant.

V. RESULTS AND DISCUSSION

Table 5.1

Analysis of risk of shift work disorders among Nursing staff.s



Findings related to analysis of risk of shift work disorders among nursing staff: Table 5.1 shows that out of 100 staff nurses, the majority 64 (64 %) were having low risk of shift work disorder, 22 (22%) were having moderate risk and only 14 (14%) were having high risk of Shift work disorder.

Table 5.2

Analysis of association between risk of shift work disorders among nursing staff with their selected socio demographic variable

S.No.	Demographic Variables	Low Risk	Moderate Risk	High Risk	Total	df	Chi-square	P value	Inference
1.	Type of Family								
	Nuclear	38	10	6	54	4	13.18	9.49	Significant
	Joint	21	6	6	33				
	Extended	5	6	2	13				
2.	Monthly Income of the family								
	< 20,000/ month	52	16	8	76	2	48.01	5.99	Significant
	> 20,000/ month	12	6	6	24				
3.	Place of Residence								
	Rural area	11	9	7	27	2	9.024	5.99	Significant
	Urban area	53	13	7	73				
4.	Educational Qualification								
	Undergraduates (GNM)	34	12	10	56	6	12.683	12.59	Significant
	Graduates (B.Sc.(N))	22	5	2	29				
	Post – graduate (M. Sc (N))	6	3	1	10				
	Ph. D Scholar	2	2	1	5				
5.	Period of work experience								
	Less than 1 year	9	3	6	18	8	21.907	15.51	Significant
	1-5 years	22	6	3	31				

	6-10 years	22	10	2	34				
	11-15 years	7	2	2	11				
	16 yrs & above	4	1	1	6				
6.	Frequency of getting night shifts								
	Every 7 days	12	5	6	23				
	Every 14 days	22	6	3	31				
	Every 28 days	26	8	3	37	6	15.44	12.59	Significant
	Every one month	4	3	2	9				
7.	Department of work								
	Operation Theatre (OT)	9	4	3	16				
	Intensive Care Units (ICU)	15	6	5	26	6	15.878	12.59	Significant
	Specialized Ward (CTVS, Dialysis unit, Cath lab)	16	9	4	29				
	General Ward	24	3	2	29				
8.	Hours of working in a single shift								
	6 hours	12	6	2	20				
	7 hours	29	9	6	44				
	8 hours	14	4	4	22	6	22.075	12.59	Significant
	More than 8 hours	9	3	2	14				

Findings related to analysis of association between risk of shift work disorders among nursing staff with their selected Socio-demographic variable: Table 5.2 deals with the analysis of association between risk of shift work disorders among nursing staff with their selected Socio demographic variable is statistically tested by applying chi- square test and the 8 variables including Type of family, Monthly income of the family, place of residence, educational qualification, period of work experience, frequency of getting night shifts, department of work, hours of working in a single shift were found significant and 6 variables such as Age (in years), marital status, duration of night shift days, workload of the job, number of staff in a single shift, special certification programme related to posted unit were found not significant.

Table 5. 3

Analysis of association between risk of shift work disorders among nursing staff with their selected Clinical variable.

S.No.	Clinical Variables	Low Risk	Moderate Risk	High Risk	Total	df	Chi-square	P value	Inference
1.	History of Hypertension								
	Yes	8	7	6	21	2			
	No	56	15	8	79		8.367	5.99	Significant
2.	History of Diabetes Mellitus								
	Yes	5	8	6	19		14.685	5.99	Significant
	No	59	14	8	81	2			
3.	History of Thyroid Problems								
	Yes	9	11	7	27	2	15.094	5.99	Significant

	No	55	11	7	73				
4.	History of other ailments								
	A) Arthritis								
	Yes	1	1	0	2	2	8.031	5.99	Significant
	No	63	21	14	98				
5.	B) Fibromyalgia								
	Yes	1	1	0	2	2	8.031	5.99	Significant
	No	63	21	14	98				
6.	Use of Sleeping pills/ OTC (Over the Counter) medicine								
	Yes	3	1	2	6	2	7.623	5.99	Significant
	No	61	21	12	94				
7.	Presence of job Stress								
	Yes	44	16	10	70	2	14.426	5.99	Significant
	No	20	6	4	30				
8.	Menstrual History								
	In Menstrual Phase	46	8	8	62	4	17.313	9.49	Significant
	Peri menopausal Phase	14	13	5	32				
	Menopausal Phase	4	1	1	6				
9.	Dietary Pattern								
	Vegetarian	24	10	7	41	4	18.485	9.49	Significant
	Non vegetarian	29	10	4	43				
	Eggetarian	11	2	3	16				

Findings related to analysis of association between risk of shift work disorders among nursing staff with their selected

Clinical variable: Table 5.3 deals with the analysis of association between risk of shift work disorders among nursing staff with their selected Clinical variable is statistically tested by applying chi- square test and the 9 variables, including history of hypertension, history of diabetes mellitus, history of thyroid problems, history of arthritis, history of fibromyalgia, use of sleeping pills/ OTC (Over the Counter) medicines, presence of job stress, menstrual history, dietary pattern were found significant and 4 variables such as body mass index, other musculoskeletal problems, recent surgical treatment and family history of sleep disorders were found not significant.

VI. CONCLUSION

The present study was undertaken to assess the risk of shift work disorders among nursing staff working in selected hospitals of Jabalpur city, M. P. with a view to develop an Information booklet. The review of literature in this study is organized as follows: first, Review of literature related o prevalence of shift work disorders and Second, Review of literature related to shift work disorders among nursing staff. The content validity of the tool was established with the help of experts from the nursing and medical field. From the data analysis, the majority 64 (64 %) were having low risk of shift work disorder, 22 (22%) were having moderate risk and only 14 (14%) were having high risk of Shift work disorder. This study results shows the importance to conduct studies on shift work and shift work disorders.

VII. IMPLICATIONS OF THE STUDY

NURSING PRACTICE: The need of assessing the risk of shift work disorders among nursing staff in the hospital and community settings is very important to provide a holistic nursing care. This study provides evidence of presence of shift work disorders among nursing staff. Early identification and prevention of complications of shift work disorder is necessary.

NURSING EDUCATION: This study enhances the nursing students to gain knowledge about the condition of person with shift work disorder and can apply this knowledge in practical settings, and a unit on shift work disorder can be included in the nursing curriculum.

NURSING RESEARCH: Studies can be conducted in this area in order to improve the knowledge of staff nurses through the implementation of evidence-based practice and strengthen the expanded role of nurse. Nurses should come forward to carry out studies on impact of shift work disorders in different aspects and publish them for the benefit of public. The public and private agencies should also encourage research in this field through materials and funds.

NURSING ADMINISTRATION: Nurse administrator should plan in service education programs among the health professionals regarding shift work and shift work disorders and thereby, they can understand the physical, functional, emotional and social problems of person. The nurse administrator can take part in developing protocols, regarding the health education programme regarding impact of shift work disorders on nursing care.

VIII. LIMITATIONS

The study was delimited to:

1. Nurses who are available at the time of the study.
2. There were limitations due to duty schedule of the nurses.
3. The study was limited to few samples only (n = 100).

IX. RECOMMENDATIONS

The finding of the study helps to develop further recommendations as follows:

1. Similar study can be conducted with large sample to generalize the findings.
2. Study can be conducted to assess the effectiveness of informational booklet among nursing staff.
3. Study can be conducted to evaluate the knowledge and attitude of nurses regarding the prevention of shift work disorders.

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REFERENCES

1. Hungler & Polit (2005). Textbook of nursing research: principles and methods. 6th edition; Elsevier Publisher, New Delhi; pp. 269-287.
2. A Guideline Booklet (2003). South African Department of Health. OH, Services for health care workers in the national health service of South Africa. pp.1–72.
3. Centers for Disease Control and Prevention (April 27, 2012). "Short sleep duration among workers - United States, 2010". MMWR. 61 (16): pp.281–285.
4. Jørgensen JT, Rosing MP, Westendorp RGJ, Hansen J, Stayner LT, Simonsen MK, Andersen ZJ. (2021). Shift work and incidence of psychiatric disorders: The Danish Nurse Cohort study. J Psychiatr Res. Jul; 139: pp.132-138. Epub 2021 May 23. PMID: 34058652. [Google Scholar]
5. Redeker, N., Caruso, C., Hashmi, S., Mullington, J., Grandner, M., & Morganthaler, T. (2019). Workplace Interventions to Promote Sleep Health and an Alert, Healthy Workforce. Journal of Clinical Sleep Medicine, 15(4). Retrieved from <https://doi.org/10.5664/jcsm.7734>