

Effect of rotating shift work on psychological status in nurses

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Abstract

Background: Shift work is defined as “nonstandard schedules requiring that at least 50% of the work be done at a time other than between 8 am and 4 pm” (Jaffe and Smolensky, 1996). Nowadays Shift work is necessary in many industries, hospitals and information technology sectors also. Hospitals have to provide 24 hour service to patients. In order to fulfil demands, doctors and nurses has to work in shifts. This affects circadian rhythm and has harmful effects on health. **Aim and objectives:** This study aimed at to observe effects of rotating shift work on psychological health status of nurses. **Material and Method:** This study was conducted on 390 nurses in Bharati medical college, Sangli. They were divided into 3 groups based on their past shift work experience. The instrument used for data collection was the Depression Anxiety Stress Score and Happiness index questionnaire. Data were statistically analyzed. **Results:** There was statistically significant difference in score for depression, anxiety and stress and happiness index in three groups of nurses. It has been observed that nurses working in rotating shifts for long duration were having high stress, depression and anxiety score than working for less duration or not working at all. Also happiness index was lower in those nurses working in shifts for long duration. **Conclusion:** Nurses working in rotating shift are more prone to affect psychological health and develop depression, stress related disorders.

Key Word: Rotating shift work, happiness index, psychological status

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Received Date: 06/03/2019 Revised Date: 01/04/2019 Accepted Date: 15/06/2019

DOI: <https://doi.org/10.26611/1031032>

Access this article online

Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 18 June 2019

INTRODUCTION

In order to provide 24 hour service to patients and to deal with emergency, doctors and nurses has to work in rotating shift pattern in many health care sectors. Among shift workers health services related workers contribute about one third population and nurses are the largest group. Nurses have to work shift work schedules to provide health services continuously and in emergency, which can disrupt social and biological rhythms.² This

can lead to psychological changes in nurses if they work in shifts for long duration. Paola Ferri in their study highlighted that RNS work can be a stress factor with an effect on worker's health and well-being like job satisfaction, quality and quantity of sleep, and psychological and cardiovascular conditions, leading to chronic fatigue.³ However study conducted by Mohsen Shahriari *et al*¹ in cohort study on nurses working in critical care are as found out fixed work schedule nurses were having high levels of job burnout than rotating shift.⁴ This study was designed to examine the impact of rotating shift work schedule on the psychological health status in terms of depression, anxiety and stress score and happiness index in nurses in a Bharati hospital, Sangli.

MATERIAL AND METHODS

This study was a cross-sectional analysis conducted on nurses working in Bharati Vidyapeeth Medical College and Hospital, Sangli. Prior to study permission of concerned authority and written informed consent was taken. General health checkup was carried out to rule out

any major diseases. Proforma was filled up by participants.

Inclusion criteria

Nurses having age range 25 – 45 years were included in study.⁵

They were divided into 3 groups.

1. Group I (control, n = 130) – Nurses not worked in rotating shifts
2. Group II (cases, n = 130) – Nurses working in rotating shifts for 1 to 5 years
3. Group III (cases, n = 130) – Nurses working in rotating shifts for 6 to 10 years.

Nurses in Rotating shift work inworks two days in morning shift followed by two days in afternoon shift followed by two days in night shift with day off. Sample size was calculated by taking level of significance 5%, power 80%.

Exclusion criteria: Those nurses having major systemic illness, endocrine disorder, psychiatric disorder or on its treatment, those having menopausal symptoms, any other acute or chronic disease were excluded from study.

METHOD

Copy of questionnaire were given to nurses selected for this study. Attached to the questionnaire were informed consent forms and proforma including general information, information about their family members and

contact numbers. The participants were instructed to fill out the questionnaire.

Questionnaire

Depression anxiety stress scale: Depression anxiety and stress will be assessed by Depression anxiety stress scale (DASS). It is 21 item scale having validity and reliability. It is widely used screening tool to assess symptoms of depression anxiety and stress in community setting. It has three subscales

1. Depression subscale which measures hopelessness, low self-esteem and low positive effect
2. Anxiety sub scale which assesses autonomic arousal, musculoskeletal symptoms, situational anxiety and subjective experience of anxious arousal
3. Stress scale which assesses tension, agitation and negative effect It has good internal reliability and is sensitive to detect common mental disorders.⁶

Oxford Happiness Questionnaire: OHQ used to assess self-esteem, sense of purpose, social interest and kindness, sense of humor, and aesthetic appreciation. The Oxford Happiness questionnaire has 29 multiple choice items that respondents have to answer on a uniform six-point Likert scale. It has good internal consistency, reliability and good construct validity.⁷ Analysis was done by applying ANOVA.

OBSERVATIONS AND RESULTS

Table 1: Table showing comparison between Group I, II and III for Depression, anxiety and stress scores and Happiness index

	Group	N	Mean	Std. Deviation	F	Sig.
DASS Depression	1	130	3.95	3.71	10.38	0.000
	2	130	5.53	5.57		
	3	130	7.01	6.57		
	Total	390	5.50	5.54		
DASS Anxiety	1	130	3.69	3.66	9.08	0.000
	2	130	4.98	4.22		
	3	130	5.90	4.69		
	Total	390	4.86	4.30		
DASS Stress	1	130	4.75	4.06	5.88	0.003
	2	130	5.72	4.90		
	3	130	6.90	6.04		
	Total	390	5.79	5.13		
Happiness index	1	130	5.1	0.65	51.70	0.000
	2	130	4.58	0.84		
	3	130	4.08	0.88		
	Total	390	4.59	0.90		

RESULTS

From above observation table it is evident that difference in scores for depression, anxiety and stress in three groups of nurses found to be highly statistically significant. Duration of rotating shift work was associated

with symptoms of depression, stress and anxiety. Working in rotating shift work for years leads to reduced scores for happiness index.

DISCUSSION

Results in this study are in accordance with most studies which highlighted a significant positive association between rotating shift work pattern and symptoms of depression, anxiety and stress.^{3,7} As rotating shift work pattern disturbs circadian rhythm which can lead to alteration in many biological functions in body like cardiovascular system, endocrine system, appetite and sleep-wake cycle also can affect mental health.⁹ Also nurses working in rotating shifts due to their constantly changing work timings leads to social withdrawal, less friends, less interaction with family members which might lead to depression, anxiety. Shift workers are more prone to develop stress related health problems like peptic ulcer, high blood pressure, obesity, asthma and diabetes mellitus.^{9,10} Results in our study shows that there is direct relationship between RSW experience and depression score. There is link between quality of sleep and development of depression. Individuals suffering from insomnia are more likely to develop depression than individuals with normal sleep. In RSW workers there is sleep deprivation and poor quality sleep which can be cause of development of depression in nurses.^{1,11} However, some studies have also shown no relationship between shift work and mental health.¹² It can be due to variation in working hours or workload. Oxford Happiness index gives idea about individual's current level of happiness. In our study, there was negative association between RSW experience in nurses and happiness index. Rotating shift work affects family and social relationship which can affect happiness. Due to constantly changing shift work pattern nurses will not be able to spend time with their children, family members. Also they cannot take part in many sport events and religious activities.¹³ All this may affect happiness of nurses working in rotating shifts for long duration.

CONCLUSION

Thus rotating shift work for long duration may affect mental health of nurses. They are more prone to develop depression, stress related health problems and lack of interest in life and job dissatisfaction. To avoid this problems regular psychological and physical health checkup is necessary. Those who are seriously facing psychological health problems can be shifted to duties with fixed working hour. Mind body relaxation techniques, arranging inspirational lectures can help to reduce stress and severity of it.

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Source of Support: None Declared
Conflict of Interest: None Declared