

ROLE OF AYURVEDA IN OCCUPATIONAL HEALTH OF NIGHT SHIFT WORKERS

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ABSTRACT

Occupational health is an important aspect in all occupations to promote and maintain the physical, psychological and social well-being of all the workers. It is very important to provide occupational health services to night shift workers as they are predisposed to several health problems like sleepiness/wakefulness, gastrointestinal disorders, metabolic disorders and psychosocial issues. Ayurveda emphasizes the importance of sleep and is explained as one of the three supporting pillars of life. The shift work disorders can be explained under *nidravegavarodha janya vikaras* and *nidranasha*. Acharyas have mentioned the management for the disorders resulting from the suppression of sleep and sleep deprivation which can be used to help the night shift workers to promote and maintain their health. Yoga and relaxation which promotes physical, mental and emotional health is yet another important technique to help the workers to cope with the conditions. Ayurveda and Yoga along with appropriate organisation of shift schedules can promote the occupational health of the night shift workers.

Keywords: Occupational health, Night shift, Shift work sleep disorder, Ayurveda

INTRODUCTION

Occupation is an integral part of people's life which has significant impacts on quality of life. People spend about one-third of their lifetime in their working environment. Different occupations and working conditions produce varied effects on the health of the worker. It is important to promote health, prevent diseases and maintain working capacity of the workers.

Occupational health is the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations by preventing departures from health, controlling risks and the adaptation of work to people, and people to their jobs¹.

Occupational health services should be provided in all the occupations. Maintaining and restoring work effi-

ciency is an important aspect of health services. This is an essential prerequisite for household income, productivity and economic development.

Night working is increasing so as to provide basic services to the society and due to the globalisation. It is common in various industries and fields like health care, law enforcement, media, transportation etc. Night shift working can negatively impact the health status of an individual in various aspects. They are at more risk of getting health issues due to the misalignment of circadian rhythm.

Ayurveda considers *Nidra*/Sleep as one among the three supporting pillars of life, though the science does not insist 6-8 hours of sleep. The natural sleep

that occurs at night is considered as *bhutadhatri* as it nourishes the living beings². *Nidra* is also mentioned as a non-suppressible urge. Suppression of sleep leads to physical and mental illness. Proper sleep imparts happiness, nourishment, strength, virility, knowledge and life whereas improper sleep causes misery, emaciation, weakness, sterility, ignorance and death³. Ayurveda explained about the problems arising out from suppression of sleep and the treatment for those problems. Ayurveda can help the night shift workers to cope and lead a healthy life.

Aim and Objective

To review the impacts of night shift work on health.
To identify the Ayurvedic interventions to minimise the adverse health effects of night shift working on the workers.

Methodology

A thorough review was carried out from various databases like Scopus, PubMed, Google Scholar using the keywords like night shift work, shift work sleep disorder, occupational health, Ayurveda etc. Ayurveda classic literatures, medical textbooks and websites were also reviewed.

DISCUSSION

EFFECTS OF NIGHT WORKING ON HEALTH AND WELLBEING

Night shift works have become highly prevalent in our societies due to globalisation, social and economic needs. The changes in sleep/wake cycle, feeding behaviours and other internal rhythms due to shift works lead to misalignment of circadian rhythm, the cycle of physiological and chemical processes that happen in the body over the course of twenty-four hour period. The individual is forced to work when circadian rhythm drives the physiology towards deactivation and that sleep is displaced to a time of day when circadian rhythm drives the physiology towards activation. Continuous circadian misalignment and sleep deprivation causes severe consequences on human health like metabolic disorders, gastric disturbances,

insomnia, sleepiness, increased accidents or errors and psychosocial issues.

Sleep Problems

In night shift working, the natural urge of sleep is being suppressed which causes misalignment of circadian rhythm with respect to sleep/wake cycle. Disturbed sleep and wakefulness are the dominant problems reported by the workers which results in decreased alertness and performance thereby leading to accidents and safety issues at work.

Sleep/wake cycles in shift work lead to Shift work sleep disorder, which can be defined as report of difficulty staying asleep, falling asleep, or non-restorative sleep for at least 1 month and it must be associated with a work period that occurs during the habitual sleep phase⁴.

According to Ayurveda, Shift work disorders can be explained under *nidra veganirodhajanya rogas* and *nidranasha*.

Forcible suppression of sleep leads to *moha*, *murdhagourava*, *akshi gourava*, *alasya*, *jrumbha*, and *anagamarda*⁵. Remaining awake in the night (*ratrijagarana*) leads to *vata prakopa* which promotes *rukshata* and *vataja vikaras*.

Acharya have mentioned the treatment of disorders of suppression of sleep as sleep itself and *samvahana* (soothing massages). It is important to compensate the lost night sleep by sleeping for a definite time on the very next morning. The norms of such sleep have also been mentioned. The person is allowed to sleep on the next day without taking food for a duration which is half of the time he was awake in the night. This day sleep helps to maintain the equilibrium of *dhatus* and strength and the kapha nourishes organs and ensures longevity⁶.

The persons suffering from shift work sleep disorders can be managed with the treatments explained under *nidranasha*.

Ksheera, *dadhi*, *shalyanna*, *godhuma*, *pishtanna*, *mamsarasa*, *madya*, *ikshu vikaras*, *draksha*, *sita* and *ikshu* at night, *madhura-snigdha* predominant food-stuffs, etc. are beneficial in *nidranasha*.

Therapeutic measures include *Abhyanga*, *Udhwartana*, *Utsadana*, *Samvahana*, *Snana*, *Moordha Tailam*, *Karnapooranam*, *Akshi Tarpanam*, *Shirolepa*, *Mukhalepa* etc. Daily *abhyanga* helps to get rid of fatigue, pacify aggravated *vata* and overcome sleeplessness. *Samvahana* (mild massage) helps to pacify *vata* and *kapha*, removes fatigue and soothes the body.

Gastrointestinal Problems

Night shift workers change the timing and frequency of eating which results in disruption of normal circadian phase of gastrointestinal functions. The intestinal enzymes and intestinal mobility will not synchronise with the sleep/wake pattern. Thus they are more vulnerable to digestive disorders like flatulence, reflux, ulcers, inflammatory bowel issues etc. Surveys show that gastrointestinal problems are more prevalent in shift workers than in day workers⁷⁻⁸.

The suppression of night sleep and irregular intake of food leads to disturbances in *koshta* and *agni*. As night awakening increases *vata dosha*, the night shift workers should take *vata* pacifying foods. Light foods and drinks can be taken during the work shift to compensate the energy loss and improve alertness. Regular intake of ghee can help in reducing the *rukshata* in the body.

Performance Efficiency and Errors

Studies report that night shift work is associated with decreased worker performance, errors, work accidents and injuries⁹. These arise due to chronic fatigue, fluctuation in alertness, sleepiness as a result of sleep deprivation. Several studies found that a planned and brief nap of 20 to 30 minutes before starting a night shift and during breaks can help improve alertness and performance thereby improve occupational safety¹⁰.

Metabolic Disorders

Metabolic syndromes are the most prevalent public health risk factors due to their association with cardiovascular diseases and type 2 diabetes. Disrupted sleep pattern, shifted food intake, change in lifestyle, increased stress etc in night shift workers leads to loss of internal synchronisation, disturbance of several

hormones including melatonin and cortisol and results in adverse effects on metabolism. Various studies report that obesity¹¹, type 2 diabetes mellitus¹², and hypertension¹³ are more prevalent among night shift workers. Diet and lifestyle modifications according to the nature of work along with the organisation of work schedules help to overcome the metabolic syndrome.

Mental Health

Night shift workers complain about irritability, nervousness, anxiety, mood disorders. This is due to the disruption of circadian rhythm and sleep deficits. Night shift interferes on family and social life which results in psychological stress and psychosomatic disorders¹⁴.

Satvavajaya chikitsa and yoga helps in coping up with the psychological ill-effects arising out of shift disorder.

Role of Yoga

Yoga can act as a preventive and therapeutic system to overcome health problems due to night shift working. It helps to tone abdominal organs, balance endocrine system, stimulate nervous and circulatory systems and reduce stress. Yoga helps in improving the alertness and overall health of the workers. Small stretches and short meditations in between the work can help overcome drowsiness, fatigue, physical strains which especially occurs during night works thereby preventing errors and accidents. Yoga Nidra is a guided meditation-relaxation technique that provides physical, mental and emotional relaxation much higher than ordinary sleep.

CONCLUSION

Night shift working has become an unavoidable part of many occupations due to various reasons. As it disturbs the normal circadian rhythm, the worker suffers from various physical, mental and social problems. Thus it is important to maintain health and prevent disorders in such group of workers. Organisation of night shift schedules is very important in prevention of disorders. As continuous night shifts can affect the

body and mind, the employer should take necessary arrangements to avoid the continuous shifts.

As the tolerance of working capacity, diet and behaviour depends upon the *prakriti* of an individual, following appropriate lifestyle, diet and regimen suitable to particular environmental conditions help in preventing adverse health effects of night shift work. Administration of Rasayana helps in improving the immunity, enhance working capacity and to prevent the ill effects due to working. Ayurveda can help night shift workers in two ways i.e., preventing the adverse health effects by adopting personal coping strategies including sleep hygiene, diet and lifestyle; and in the treatment of disorders arising out of it.

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