

# Example of research paper on impact of working in night shifts

[Health & Medicine](#), [Body](#)



on the Work Performance  
of a Nurse

## **Abstract**

Shift work, meaning working in odd hours outside the daylight hours is seen to have significant impact on the health of the nurse as well her performance in the work place. Disturbances in normal circadian rhythm hampers the sleep/wake cycle, thus leading to several health issues including sleep disorders. The nurse may complain of insomnia, awakenings, and continuation of sleep. Lack of sleep and rest may lead to medical errors, a finding which has been reported by many shift workers in several studies. Nurses can help themselves stay fit and reduce the incidence of occurrence of medical errors by taking certain helpful steps like taking adequate breaks during the shift hours, simple exercising by climbing stairs, and asking a colleague to keep a check on them while on duty. In any case, any illness or bodily pain of the nurse should not be neglected.

Shift work is generally described as working outside the daylight hours. Working beyond daylight hours or working especially in the night hours can lead to a disturbed sleep pattern, while also impairing the person's alertness. Healthcare professionals like nurses who work in shifts are especially victims of sleep disorders that arise from a disturbed sleep/ wake pattern. (Haghighi, 2008) In addition to the nurse suffering from sleep disorders and other health conditions, it also hampers the professional performance of the nurse (Landrigan, 2004 & Suzuki, 2004).

## **Understanding Biological Clock**

Our daily biological clock controls the sleep/wake patterns. When this pattern is not in line with the endogenous clock, the result is a misalignment that is circadian. Such disruption in circadian rhythm is seen to be associated with several disease risk factors. The nurse working in shifts, especially night shift is at an increased risk of developing cardiovascular and metabolic diseases, in addition to certain gastrointestinal diseases; the risk can also extend to development of certain types of cancers and mental disorders. (Boivin, 2007; Foster, 2005; Scheer, 2009; Ardekani, 2008)

The nurse may have disturbed sleep which often manifests itself as difficulty in sleep initiation, maintaining sleep, awakening in early morning period, or even non restorative sleep. During the daytime one may have fatigue, irritability, difficulty in concentration, and decreased memory. (National Institute of Health, 2005)

The National Sleep Foundation (NSF) has stated that persons working in shifts experience more health problems like rise in blood pressure, colds, weight gains, and menstrual irregularities as compared to those who work in the daylight hours. (Scott, 2010)

## **What Literature Says**

According to a study published by Hughes and Stone in the American Journal of Nursing, approximately 30% of nursing population works in shifts. (Hughes and Stone, 2004) It is certainly difficult for anyone to work in shifts, yet it is preferred by many for the simple reason of flexibility in domestic life. Some others prefer it for monetary benefits they receive working in the night

hours. However, not many are aware of the fact that it can be seriously detrimental to their health. (Scott, 2010)

There is some amount of literature published on the effects of working in night shifts and the nurse's health as well as her professional performance. In a study by Drake and colleagues, symptoms of insomnia and excessive daytime sleepiness were reported by 32% of night shift workers as compared to just 18% of day shift workers. (Drake, 2004) According to Dorrian et al, one of the most important predictors of nurse error was stress. (Dorrian, 2008) Two studies have also reported that taking a nap during night shifts has proved to be effective in reducing the risk of medical errors. (Arora 2006 & Smith-Coggins, 2006) Kawachi and colleagues' study have found rotating and night shift work to be associated with a higher risk of developing coronary artery disease (CAD). (Kawachi, 1995) David Brown's latest analyses demonstrate an independent association between rotational shifts and the risk of ischemic stroke in a cohort of non-Hispanic white female nurses. (Browne, 2009)

The above literature has shown that nurses working in shifts may not be in good health and are prone to development of some type of health issue.

### **Insomnia – A unique problem with night shift workers**

Shift workers usually have a difficult time sleeping in the daytime and most suffer from insomnia. Naturally, medical errors are evident due to lack of sleep and rest to the body and mind. In view of this, a study conducted by Haghighi and colleagues was aimed to determine if a medical treatment with melatonin can help in reducing insomnia in nurses working in shifts in

hospitals. The effort was to better the night time sleep while trying to recover from the night shift schedule. The study participants were put on 5mg melatonin orally half an hour before night time sleep. The study was placebo controlled and the participants were evaluated for sleep onset (subjective), duration of sleep, and number of awakenings. It was seen that sleep onset latency (SOL) was decreased significantly in patients on melatonin as compared to those on placebo. Participants reported an increased sleep quality with melatonin; however, no evidence suggested that melatonin altered total sleep time. There were no adverse events noticed with melatonin during the treatment period. The study showed that melatonin can prove to be an effective treatment for insomnia in nurses who fail to fall asleep after a night shift. However, the results are based on subjective self-reporting by the study participants and not objective based on polysomnography or actigraphy. (Haghighi, 2008)

## **Occurrence of medical errors**

Working in shifts appears to heavily influence the performance of a nurse. Some research has shown that nurses are likely to make errors when the work timings are irregular or consist of night shifts (Landrigan, 2004 & Suzuki, 2004).

Errors usually made by the hospital nurses include mistakes in judgement; errors can be due to influence of stressful working environment. A recent study by Arakawa and colleagues was aimed at examining the relation between medical errors performed by nurses and the factors describing their lifestyle, health, and work environment. Almost 80% of the study population

reported that they had made medical errors or experienced medical incidents, while just 15% admitted to not doing any kind of medical errors working in night shifts. The group of nurses who experienced medical error and those who did not perform any kind of mistake, showed differences in numerous factors like age, marital status, workplace, frequency of overtime hours during the night shift, nurse's professional experience, workload during night shifts, number of persons working together on a night shift, number of night shifts every month and related stress, satisfaction with the daytime sleeping hours, limited normal daily life, physical and emotional role, and ability to attend social functions etc. The results also showed that the occurrence of incidents of errors slightly increased when the break times during night shift hours increased by 1 minute (Arakawa, 2011).

Akerstedt and colleagues' recent study showed that over 50% of workers who worked in shifts reported severe reduced alertness while they at work (Akerstedt, 2005).

Findings compiled by Folkard from several research studies state that the risk of performing a medical error increases with every successive off shift a nurse performs. On an average, the medical error rate increases by about 6% after the second night shift and jumps to 17% after the third successive night shift. At the fourth night shift, it may be as high as 35%. (Folkard, 2005).

## **What nurses can do to keep self well and enhance work performance during night shifts-**

Nurses who choose to work in night shifts need to first understand the physiology of sleep. Our body follows a 24 hour cycle known as the circadian

clock regulated by dark and light, during which most people long for sleep between midnight and 6 AM. According to NSF, approximately 10 to 20% of shift workers fall asleep while on the job in the night. Same problem can extend to the day hours when one can fall asleep while driving back home and losing control of the vehicles thus leading to unfortunate instances of accidents. As discussed earlier, one may even find it difficult to have a sound sleep for an adequate period of time after returning home (Scott, 2010).

Nurses need to learn to make sleep a priority. NSF recommends that nurses should wear sunglasses while they are driving back home for their bodies to be less aware of the fact that it is daytime. Some can also learn to alter their lives at home and work so that their body is most alert in the night hours.

(Berger, 2006) One can even design or redesign their bedrooms to accommodate daylight sleeping, like covering windows with thick curtains and decreasing room temperature. Earplugs to block outside noises and use of eyeshades to decrease light should be brought to use. One can even unplug the telephone cables and keep their mobiles switched off during sleep time. Guidelines can be created for their families to keep noise and interruptions to minimum or nil during sleep hours. Even a “ Do not disturb” sign on the outside of the door can prove to be helpful. (Scott, 2010)

Avoidance of caffeine a few hours prior to sleeping should be considered as caffeine interferes with sleep. A healthy nutritious food is required to avoid blood sugar fluctuations. A heavy meal and alcohol prior to bedtime is not recommended. Even exercising before sleeping has to be avoided since exercise raises the body temperature and heart rate, and gives energy to the body. NSF states that one can feel extremely sleepy at about 4 AM, so it

helps if one plans the most stressful activity at that time. The nurse need not work continuously during shifts and should consider taking short breaks. Exercise, just to freshen up a bit, can be done in a simple way of climbing a set of stairs when feeling sleepy. In any case, one must not consider self-medicating to enhance alertness. One can even try to develop a partner system that can check on you. (Scott, 2010)

### **Getting back home after a night shift**

A report by Institute of Medicine states that almost 20% of all serious vehicle accidents are associated with sleepiness. This is independent of alcohol consumption. For nurses, the NSF recommends that if possible carpooling should be done keeping a dialogue with the driver. Public transportation should be used instead of personal vehicles as far as possible. Ignoring fatigue signs can prove to be dangerous. Many nurses keep the volume of the radio high while driving back home from a night shift, but according to NSF, this does not help. These actions only signal that the nurse is too exhausted and tired or very sleepy and needs to go to bed as soon as possible. (Scott, 2010)

Thus, taking steps to understand the circadian rhythm of the body is necessary for overall health and wellbeing of the nurse and well as the patients they care for. (Scott, 2010) To prevent medical errors in the work place, it is necessary to respect and regard any illness or bodily pain that a nurse may have and give enough breaks during the night shift hours. (Arakawa 2011)



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