Shift Work and Nurses’ Health: Understanding the Consequences to Take Action

Letha Joseph, MSN, RN, AGPCNP BC
Sigma Theta tau International : The Honor Society of Nursing
43rd Biennial Convention
7-11 November 2015, Las Vegas, USA
Disclosure Statement

- Speaker Letha Joseph, MSN,RN, AGPCNP-BC declares:
  - No commercial support has influenced the planning of the educational objectives and content of the activity.
  - This presentation does not endorse any specific product; Does not discuss any off-label use.

Objective of this activity - After attending the session and associated activities, the learner will be able to appreciate the effects of shift work on nurses' health and enumerate measures to minimize harmful effects of shift work.
How significant is the problem?

**Shift Work**

What is shift work

- 20% of workers in industrialized countries (15% in the USA) are shift workers (US Dept. of labor, 2005)

- In US, 25% nursing positions require shift work (400,000 nurses)

- ~10% of shift workers have shift work disorder

(Thorpy, 2011)
What do Nurses say?

- Did you choose to do shift work?
- Why did you choose shift work?
- Why didn’t you choose shift work?
Advantages of Night Shift

(Pakieser-Reed, 2013)

- Fewer interruption
- More satisfying relationship with patients
- Improved team work
- More opportunities to learn and improve skills
- Family life / Lifestyle
- Increased autonomy & responsibility
- Financial Advantage
Challenges of night work

- Patient safety
- Lack of resources
- Fatigue
- Invisibility
- Staff safety
- Nurse turn over
- Health Concerns
Have you / some one known to you ever experienced any health related problems which could be a result of shift work?
Figure 1. A schematic diagram of the sleep-wake cycle. When transitioning into sleep, an individual begins in non-rapid eye movement (NREM) and remains in this stage for approximately 85 minutes. After this initial stage of NREM, the brain switches to rapid eye movement (REM) for approximately 5 to 10 minutes before switching back to NREM. This 90-minute pattern continues throughout the night, with REM intervals becoming longer and NREM intervals becoming shorter until wakefulness occurs. Disruptions in this defined pattern of sleep and wakefulness result in disturbances in sleep. Adapted from Rogers and Holmes, 2012.
Hypotheses for mechanisms linking shiftwork and Health Problems (Fritschi, et al., 2012).

- Circadian rhythm disruption
- Depression of immune function
- Suppression of melatonin secretion by light at night
- Long-term sleep disruption and deprivation
- Changes in hormonal, immunological, and metabolic parameters
- Melatonin has indirect effects on the neuroendocrine reproductive axis & acts as a selective estrogen receptor modulator and a selective estrogen enzyme modulator
- Decreased production of vitamin D
- Unhealthy lifestyle
Health Problems (Stokowski, 2012; WHO, 2007).

- Mental health
- Insomnia
- Stress/Depression
- Metabolic
- Obesity
- Metabolic syndrome
- DM
- Malignancies
- Breast
- Prostate
- Colorectal
- Cardiovascular
- MI
- Stroke
- Gastro Intestinal
- Peptic ulcer
- Anorexia
- Reproductive
Patient & Staff Safety  (Rogers, 2008)

Struggling to stay awake @ work
  Partial sleep deprivation
Struggle to regulate sleep patterns/shift work sleep disorder

Leads to

Medical errors & near misses
Reduced job performance
Traffic accidents

Patient safety
Staff safety
Alert!

24 hours without sleep/ a week of sleeping 4 or 5 hrs a night induces an impairment equivalent to a blood alcohol level of 0.01%( Rogers,2008)
How to reduce the Harm? (Pakieser-Reed, 2013)

Prevention of health issues
- Know your ‘numbers’
- Pay attention to the body
- Routine screenings
- Be physically active
- Maintain healthy weight
- Manage stress
- Seek support

Limit sleep deprivation
- Caffeine only in moderation
- Stop caffeine before 3hrs of sleep time
- Sleep quality decreases with alcohol use / smoking
- Melatonin
- Prescription help
- Technology- sleep assisting apps

Healthy eating
- Protein foods- increase alertness
- No huge meal at the end of the shift
- Do not skip meals
- Time your meal
- Main meal before shift starts, small portions throughout
Workplace Solutions - may need policy revisions  
(ANA, 2006; NANN, 2008; Rogers, 2008)

**Keep circadian rhythms**
- Permanent night shifts
- Clockwise rotation of shifts - if at all rotates
- Shifts which avoid bright light exposure

**Help to stay awake @ work**
- Power nap, onsite exercise facilities
- Encourage breaks
- Large light boxes at nurses’ station

**Foster healthy environment**
- Educate on sleep hygiene, managing stress, health promotion
- Decrease feeling of isolation - staff meetings, education opportunities, social activities
- Flexible scheduling, appropriate staffing, adequate pay,
  foster collegiality, celebrations, support education
Non-pharmacologic

- Sleep hygiene
- Timed light exposure
- Planned napping

(Morgenthaler et al., 2007)
Sleep Hygiene (Pakieser-Reed, 2013)

- Enough sleep to feel rested. Min 6 hrs. (National sleep foundation, 2011)

- Set a permanent 4-hour sleep anchor time, add 3-4 hours before & after that anchor time.

- Dark sunglasses – ‘blue blocker’ when driving back from work

- Make the room dark; Put the electronics away; White – noise machine / ear plug; Room temp. 65-72F

- Not falling asleep in 15 min? - Get up and try again later

- Expose to light when you wake up
Personal Strategies (ANA, 2006; NANN, 2008; Pakieser-Reed, 2013)

Survive Night Shift

- 30-90 minutes nap before work
- Quick nap after the shift, before you leave for home can keep you alert while driving. (Be aware of sleep inertia)
- Feeling drowsy while driving? Pull over, drink a caffeinated beverage, rest for 20 minutes (National sleep foundation, 2011a)
Personal Strategies (ANA,2006; NANN,2008; Pakieser- Reed,2013)

Work life balance

- Find a routine
- Find time for yourself
- Pet, hobby, vacations
- Eat right, Exercise
- Financial planning
- Stay connected with family & friends
- Identify important dimensions in your life & set priority
Personal Strategies (ANA, 2006; NANN, 2008; Pakieser-Reed, 2013)

Keep your career on track

- Professional appearance
- Advance education
- Continuing education
- Certifications
- Stay visible @ work- projects, committees
- Professional organization membership & activities
Night Shift is Going to Stay!

- What worked for you?
Evidence based Resources

- American Nurses Association's Healthy Nurse
  www.nursingworld.org/MainMenuCategories/WorkplaceSafety/Healthy-Nurse
- Work schedules: Shiftwork and long work hours" at www.cdc.gov/niosh/topics/workschedules/.
- Patient Safety and Quality: An Evidence-Based Handbook for Nurses:  www.ahrq.gov/qual/nurseshdbk/. Chapter 40
Reference

American Nurses Association. (2006a, December). Assuring patient safety: Registered nurses’ responsibility in all roles and settings to guard against working when fatigued.


Reference


