

Creating Healthy Work Environments 2019

Work Schedule Characteristics and Fatigue Among Shift Nurses in Hospital Settings

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Background: Nursing work is both physically and mentally laborious, and performance decline is reported during the last hours of work shifts. Nurses who experience rotating work schedules, long work hours, and circadian rhythm adjustments to night shifts, fatigue becomes unavoidable and carrying out optimal nursing task is a challenge (Sagherian et al., 2017). Work-related fatigue is a complex multidimensional condition with emotional, physiologic, cognitive/mental, and sensory components that occur as a consequence of excessive work demands and insufficient energy restoration. The consequences of fatigue include nurse injuries and adverse health outcomes such as musculoskeletal and cardiovascular disorders, nurse satisfaction, and patient safety which is a major indicator for high care quality (Gaba & Howards, 2001; IOM, 1999; Josten, Ng, & Thierry, 2003; Lipscomb, Trinkoff, Brady, & Geiger-Brown, 2004; Taylor & Barling, 2004; Neville & Cole, 2013; Yip, 2001). The Institute of Medicine, the Joint Commission, and many professional nursing organizations emphasized the importance of reducing work-rated fatigue among nurses as a priority issue (Smith-Miller, Shaw-Kokot, Curro, & Jones, 2014). There is currently very little understanding of the impact of work schedule characteristics on the nurse fatigue among shift nurses in health care settings. In order to develop strategies to effectively address and alleviate work-related fatigue and improve nurse and patient outcomes, the work schedule characteristics of fatigue are needed to be systematically analyzed.

Objective: The aim of this systematic review was to evaluate the effect of work schedule characteristics on fatigue among shift nurses in hospital settings.

Design: This systematic review was guided by the Meta-Analysis of Observational Studies in Epidemiology (MOOSE) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.

Methods: An online search of CINAHL, Medline, PubMed, EMBASE, PsycINFO, SCOPUS, and Web of Science as well as the reference lists of selected studies or review articles was conducted for research published in English between January 2000 and June 2018. Articles with a primary focus on the relationships between work schedule characteristics and fatigue for shift nurses working in hospital setting were included. Studies were excluded if they included nursing students who are generally required to work under the supervision of a registered nurse and other healthcare professionals whose work schedules or shift patterns generally differ from those of nurses. Articles focused on simple comparison of shift and non-shift nurses were excluded. All authors independently screened and reviewed the articles as well as extracted the data. Two authors independently performed the methodological quality assessments.

Results: From the 1,699 identified records, 8 articles were included in the synthesis: Two articles were published from one study. Six studies from seven articles were a cross-sectional and one study was a longitudinal. Of these, two studies were considered to be good, fair for five studies and poor for one study in assessing the methodological quality. A total of nine work schedule characteristics were identified: total working hours per week, overtime in the past month, shift length, number of night and evening shifts per month, number of night shifts past year, number of night shift per month, working with rotating night shift and quick return, number of quick returns past year, and days called to work on day off in the past month. Six fatigue measures were identified: the Swedish Occupational Fatigue Inventory, Fatigue-Related

Symptoms Questionnaire, Fatigue Questionnaire, Chalder Fatigue Scale, Occupational Fatigue Exhaustion Recovery scale, and Standard Shift Work Index. Two studies reported a significant difference between total working hours per day or week and fatigue. One study reported a significant positive relationship between the number of night and evening shifts and fatigue, but four studies reported no significant relationship between the number of night shifts and fatigue. A longitudinal study reported a significant positive relationship between the number of quick returns and fatigue. One study reported greater fatigue in nurse who did not work on their days off compared with nurses working. Findings suggest that nurses' work schedule characteristics such as total working hours per day or month, the number of night and evening shifts, the number of quick returns, and days called to work on day off significantly affect the prevalence and intensity of fatigue among shift nurses in hospital settings.

Conclusions: The reviewed studies provided mixed results on the associations between work schedule characteristics and nurse fatigue. Therefore, more evidence is needed to make a clear conclusion of the relationships. Further research is required to examine the contributing work-related factors that may mitigate the fatigue level among shift nurses.

Title:

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Keywords:

Nurse fatigue, Shift work and Work schedule

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Abstract Summary:

This systematic review was conducted to identify and examine the work schedule characteristics that contribute to fatigue among shift nurses in hospital settings. From the 1,699 identified records, 8 articles were included. We suggested further research to consider contributing work schedule characteristics that may mitigate fatigue level among shift nurses.

Content Outline:

I. Introduction

1. Nurses who experience rotating work schedules, long work hours, and circadian rhythm adjustments to night shifts, fatigue becomes unavoidable and carrying out optimal nursing task is a challenge.
2. There is currently very little understanding of the impact of work schedule characteristics on the nurse fatigue among shift nurses in health care settings.
3. In order to develop strategies to effectively address and alleviate work-related fatigue and improve nurse and patient outcomes, the work schedule characteristics of fatigue are needed to be systematically analyzed.

II. Body

1. This systematic review aimed to evaluate the effect of work schedule characteristics on fatigue among shift nurses in hospital settings.
 - o This systematic review was guided by the Meta-Analysis of Observational Studies in Epidemiology (MOOSE) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.
 - o An online search of CINAHL, Medline, PubMed, EMBASE, PsycINFO, SCOPUS, and Web of Science as well as the reference lists of selected studies or review articles was conducted for research published in English between January 2000 and June 2018.
2. From the 1,699 identified records, 8 articles were included in the synthesis.
 - o Six studies from seven articles were a cross-sectional and one study was a longitudinal.
 - o Two studies were considered to be good, fair for five studies and poor for one study in assessing the methodological quality.
 - o A total of nine work schedule characteristics and six fatigue measures were identified.
3. Relationships between work schedule characteristics and fatigue were founded.
 - o Two studies reported a significant difference between total working hours per day or week and fatigue.
 - o One study reported a significant positive relationship between the number of night and evening shifts and fatigue, but four studies reported no significant relationship between the number of night shifts and fatigue.
 - o A longitudinal study reported a significant positive relationship between the number of quick returns and fatigue.
 - o One study reported greater fatigue in nurse who did not work on their days off compared with nurses working.

III. Conclusion

1. The reviewed studies provided mixed results on the associations between work schedule characteristics and nurse fatigue. Therefore, more evidence is needed to make a clear conclusion of the relationships.
2. Further research is required to examine the contributing work-related factors that may mitigate the fatigue level among shift nurses.

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