

SLEEP QUANTITY AND QUALITY OF ON-CALL FIRE AND EMERGENCY SERVICE WORKERS



Sarah Hall^{1,2}, Sally Ferguson³, Anne Turner¹, Sam Robertson⁴, Brad Aisbett¹

¹ Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Victoria ² Bushfire and Natural Hazards Cooperative Research Centre, Victoria ³ The Appleton Institute, School of Human Health and Social Sciences, Central Queensland University, South Australia ⁴ Institute of Sport, Exercise & Active Living (ISEAL), Victoria University, Victoria.

HOW DOES OPERATING ON-CALL FROM HOME IMPACT SLEEP, EVEN WHEN NO CALL OCCURS?

SYSTEMATIC REVIEW

INTRODUCTION

On-call work is an essential form of work scheduling, as it allows the balance between providing 24-h emergency response and the financial burden of full-shift coverage. While on-call work balances these priorities, the potential stress and disruption to sleep of workers needs to be considered (Figure 1) because of the health and safety implications of poor sleep and heightened stress. **This review systematically critiqued previous research investigating the effect of working on-call from home on stress physiology and sleep.**

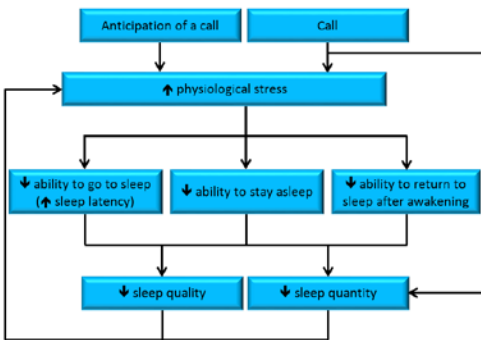


Figure 1: Proposed relationship between stress physiology and sleep when working on-call from home

METHODS

A systematic search of scientific databases was conducted using the terms *on-call*, *on call*, *standby*, *sleep*, *heart rate*, *cortisol*, *adrenaline*, *noradrenaline*, *nor-adrenaline*, *epinephrine*, *norepinephrine*, *nor-epinephrine*, *salivary alpha amylase* and *alpha amylase*.

RESULTS

- Only one study investigated the effect on stress physiology
- Eight studies investigated the effect on sleep using subjective measures
- Working on-call from home appears to adversely affect self-reported sleep quantity, and in most cases, subjective sleep quality

DISCUSSION

More studies are needed that objectively measure stress physiology and sleep.



WE STILL NEED YOUR HELP!

We need male duty officers and support personnel, aged 18-75 years, from across Australia to help us assess sleep quantity and quality and physiological stress of fire and emergency service workers when operating on-call. If interested, please take a flyer and contact Sarah – sarahjah@deakin.edu.au



“The outcomes of this specific research project will help TFS to *evaluate the potential risks of operating on-call* and will be used to *help refine agency policy, and educational materials* regarding the health and safety of our firefighters when working on-call from home.” **Robyn Pearce** – Manager People & Culture, Department of Police, Fire and Emergency Management, Tasmania.



SLEEP STUDY UPDATE

INTRODUCTION

The lives of fire and emergency service workers revolve around the concept of prepared readiness, with personnel required to be ready to respond to an emergency call at any time of the day or night. Calls that occur overnight inevitably disrupt sleep. In addition, the possibility of missing a call may also adversely affect sleep. **To date, no study has objectively measured the sleep of personnel operating on-call from home.**

METHODS

Participants were mailed a study kit containing instructions on how to complete the study, an *Actical* activity monitor, a sleep diary, a work diary and a reply paid envelope. Participants were required to wear the activity monitor and complete the daily sleep diary and work diary for two weeks.

RESULTS

Data collection is still underway, however, we have begun processing the sleep data and can present mean total sleep time data for 25 participants (Figure 2).

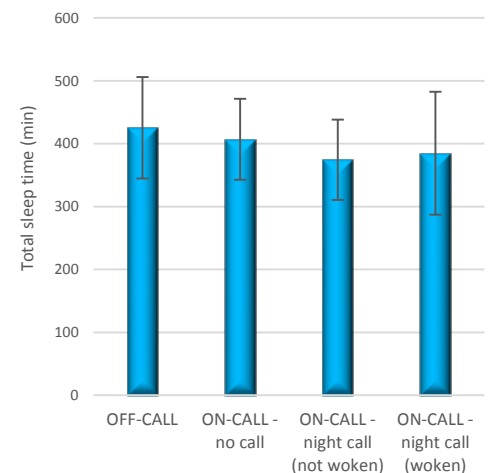


Figure 2: Preliminary results for Total Sleep Time

NEXT STEPS

- Continue to recruit personnel for study
- Process and analyse sleep and stress data
- Submit findings for peer review
- Present final outcomes to agencies

