

# Implications of interrupted sleep subsequent to hospitalisation for older adults: A systematic review and meta-analysis



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## Introduction:

Sleep is a vital and necessary biological function. It is restorative and crucial for health and wellbeing and vital for optimal brain functioning<sup>1</sup>. Poor sleep quality or insufficient sleep has been linked to cardiac disease and immune system disorders as well as higher mortality rates. In older adults it can result in decreased response times, falls, depression, and impaired memory, concentration and decision making<sup>2</sup>.

Sleep patterns may be disturbed when people go to hospital due to: (1) the nature of the illness or surgery that necessitated the admission, (2) environmental factors (i.e., lighting, noise, staff activity, or care routines), or (3) the effects of medications commenced while in hospital. The impact of each of these factors is unknown. It is possible once sleep patterns are disturbed that they may not readily return to premorbid patterns post-discharge. This misalignment can impact on a person's everyday functioning and their quality of life<sup>3</sup>.

The degree to which sleep quality is impaired amongst older adults during and after hospitalisation and how long it takes for these impairments to resolve following discharge is currently unclear. The aim of the review was therefore to describe the available evidence about sleep interruptions for older adults subsequent to hospitalisation.

## Method:

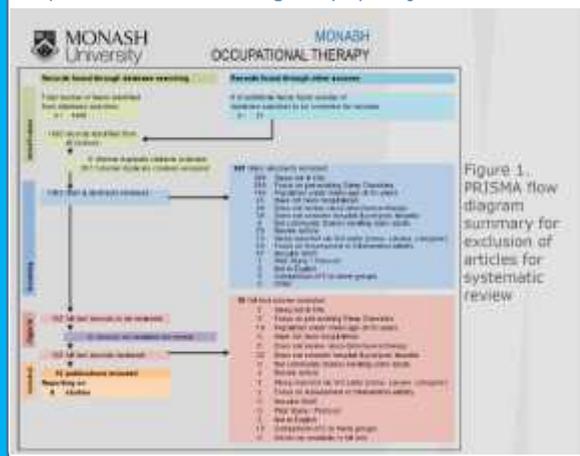
A comprehensive systematic review, across seven databases and secondary sources, was conducted of current literature on the implications of sleep interruptions of older adults due to hospitalisation. Publications were searched between 1998-2015 and limited to English text and human studies. Search terms included: 'sleep' AND 'hospital' AND 'older adult' (or 'elder' or 'retire' or 'senior' or 'aged') AND 'interrupt' (or 'disrupt' or 'disturb' or 'fragment' or 'change'). All study designs were considered for inclusion with eligibility based on the following criteria:

1. Sleep was assessed as primary aspect of design and 'sleep' was in title of paper
2. Sample had mean age of 65 years or older
3. Older adults who had been hospitalised and returning to community-dwelling
4. Subjective sleep quality was reported on at least two time points (before, during, or after hospital)
5. Participants had no known pre-existing sleep disorders
6. Subjective sleep quality was self-reported by the participants

Table 1 outlines the Assessment of Risk of Bias approach utilised in this review. Qualitative analysis of each paper included in this review is reported in Table 2. A meta-analysis of standardised effect sizes was conducted using continuous outcome data.

## Results:

Figure 1 shows the flow of articles for inclusion in the systematic review. Ten papers of eight studies met inclusion criteria. Seven compared sleep quality before versus during hospital, and a meta-analysis conducted on three (refer to Figure 2). Meta-analysis indicated hospitalisation was detrimental to older adult's sleep quality when compared to pre-hospital sleep. One study compared sleep quality during versus post-hospitalisation and suggested sleep quality improves following discharge. Potential causative factors for sleep disturbance in hospital included pain, cognition, routines, environment, symptom management, and emotional response. Figure 3 represents the conceptualisation of the interactions between the reported factors affecting sleep quality of older adults.



## Conclusion:

Allied health professionals are involved in increasingly complex discharge planning for older adults following hospitalisation. Sleep is an important aspect of this planning process due to the impact that it can have on the everyday functioning of an individual, their physical and psychological health and wellbeing and occupational performance.

Sleep quality is disturbed during hospitalisation and improves to some extent post discharge to home for older adults. Internal and external factors associated with sleep disturbance were largely consistent with studies examining disturbed sleep within the hospital environment only. These factors could be targets for interventions by allied health professionals to minimise disruptions to sleep quality in this population.

Further research is required to consider the impact of sleep interruptions on the health and wellbeing of older adults when they transition home.

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Acknowledgements: The author would like to acknowledge:  
 • Project funding from a beyondblue National Priority Driven Research Program grant  
 • PhD candidature funding from Australian Postgraduate Award  
 • Professor Terry Haines (Principal Supervisor)  
 • Associate Professor Ted Brown (Associate Supervisor)

