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The experience of sleep deprivation in intensive care patients: Findings from a larger hermeneutic phenomenological study

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Summary Sleep deprivation in critically ill patients has been well documented for more than 30 years. Despite the large body of literature, sleep deprivation remains a significant concern in critically ill patients in intensive care unit (ICU). This paper discusses sleep deprivation in critically ill patients as one of the main findings from a study that explored the lived experiences of critically ill patients in ICU with daily sedation interruption (DSI). Twelve participants aged between 20 and 76 years with an ICU stay ranging from three to 36 days were recruited from a 16 bed ICU in a large regional referral hospital in New South Wales (NSW), Australia. Participants were intubated, mechanically ventilated and subjected to daily sedation interruption during their critical illness in ICU. In-depth face to face interviews with the participants were conducted at two weeks after discharge from ICU. A second interview was conducted with eight participants six to eleven months later. Interviews were audio taped and transcribed. Data were analysed thematically. ''Longing for sleep'' and ''being tormented by nightmares'' capture the experiences and concerns of some of the participants. The findings suggest a need for models of care that seek to support restful sleep and prevent or alleviate sleep deprivation and nightmares. These models of care need to promote both quality and quantity of sleep in and beyond ICU and identify patients suffering from sleep deprivation to make appropriate referrals for treatment and support.

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Implications for Clinical Practice

- Clinicians need to recognise and promote the importance of sleep for patients in ICU.
- Practices that shield patients from witnessing death in ICU are needed.
- Models of care that seek to prevent and alleviate sleep disturbances in and beyond ICU are needed to promote both quality and quantity of sleep in and beyond ICU.

Introduction

Sleep deprivation is characterised by continued lack of restorative sleep over time that results in physical and cognitive sequlae (Fulke and Vauqhan, 2009). Sleep deprivation in critically ill patients has been well documented for more than 30 years (Hardin, 2009) and contributing factors and therapeutic approaches to alleviate sleep deprivation have been researched extensively (Friese, 2008; Hardin, 2009; Tembo and Parker, 2009).

Noise, pain and discomfort (Hardin, 2009; Pandharipande and Ely, 2006; Reishtein, 2005) as well as modes of ventilation, and many drugs used in ICU are among the possible causes of sleep deprivation in critically ill patients (Friese, 2008; Parthasarathy and Tobin, 2004; Tembo and Parker, 2009). The administration of sedatives and analgesics by a continuous infusion has been the mainstay of drug treatment for managing patients requiring mechanical ventilation in ICU for many years (Kress et al., 2002; Ogundele and Yende, 2010). Continuous sedation and analgesia are used largely for the patient's comfort, to improve patient and ventilator interactions, decrease pain and anxiety, and self-injury (Ogundele and Yende, 2010). The cumulative effects of sedation and analgesia however, may delay the patient's withdrawal from mechanical ventilation support (Kress et al., 2002). The effects of continuous sedation for ventilation is known to extend ICU stay, and increase the risk of complications associated with ventilation, delirium and post-traumatic stress disorder (PTSD) (Ogundele and Yende, 2010). Daily sedation interruption (DSI), whereby patients are administered intermittent boluses of sedatives, seeks to alleviate these problems (Kress et al., 2003), however its long term effects and the impact on the patient are largely unexplored. Debate over the use of one mode over the other in terms of the benefits to patients, is unresolved (Kress et al., 2002).

A study by Kress et al. (2003) however, provides some insight. Kress et al. (2003) conducted a comparative study of DSI and continuous infusion in order to establish whether DSI was associated with long term psychological harm and to measure outcomes such as post traumatic stress disorder (PTSD). The researchers compared psychological outcomes of ICU patients ($n = 13$) undergoing DSI (intervention) to those ($n = 19$) who underwent continuous sedation infusion (controls). Participants included patients who were admitted to ICU for sedation and mechanical ventilation. A range of measures were used including those for PTSD, health status, anxiety, depression and psychological adjustment to illness. Participants were interviewed at least six months after discharge from ICU. Findings suggested that DSI did not result in psychological harm. Patients in the intervention group fared better for PTSD than the controls. They also found that the intervention group had a shorter length of stay (LOS) in ICU as compared to the control group. However, there was no significant difference in the health related quality of life between the two groups. This study however, was a single centre study with a small number of patients. The impact of DSI on sleep however, was also not established.

Sleep deprivation is renowned for causing disorders of the mind (Germain and Zadra, 2009; Ramful, 2006; Simon, 2009), including delirium (Friese, 2008; Tembo and Parker, 2009). The consequences of sleep deprivation include impaired immunity, protein catabolism, deranged host defenses and death (Friese et al., 2009; Pandharipande and Ely, 2006; Parthasarathy and Tobin, 2004). Of concern in ICU is that sleep deprivation weakens upper airway muscles causing respiratory problems including a prolonged need for ventilator support, ICU stay and it complicates the post extubation period (Friese, 2008; Parthasarathy and Tobin, 2004).

Unfortunately, the many causes of sleep deprivation pose a challenge to its treatment, prevention and alleviation (Tembo and Parker, 2009). Whilst measures such as diurnal lighting (Honkus, 2003), noise reduction (Stracham and Brown, 2004), careful choice of mechanical ventilation modes (Friese, 2008; Tembo and Parker, 2009) and clustering of nursing care (Tamburi, 2004; Tembo and Parker, 2009), have been recommended to prevent and/or alleviate sleep deprivation in ICU, patients continue to suffer. It is argued that the causes may be the critical illness itself (Tembo and Parker, 2009) and/or the medications used for sedation and analgesia (Pandharipande and Ely, 2006).

Whilst it is well known that sleep is essential for healing, recovery and surviving critical illness (Richardson et al., 2007; Stracham and Brown, 2004; Tamburri et al., 2004) sleep deprivation in critical illness survivors continues to be a problem. Of concern, is that the experiences of sleep deprivation for the sufferers have not been explored. This paper shares the experiences of people with sleep deprivation who were participants in a study that explored the experiences of being critically ill in ICU with DSI.

Aim of the study

The aim of the study was to describe the experience of critical illness in ICU with DSI and how this impacted the participants' continued existence.