CIÊNCIAS DA VIDA E DA SAÚDE
LIFE AND HEALTH SCIENCES
CIENCIAS DE LA VIDA Y LA SALUD

millenium

Millenium, 2(Edição Especial Nº18)

en

INTERVENÇÕES NÃO FARMACOLÓGICAS PROMOTORAS DE SONO NA PREVENÇÃO DO DELIRIUM NA PESSOA EM SITUAÇÃO CRÍTICA: SCOPING REVIEW

SLEEP-PROMOTING NON-PHARMACOLOGICAL INTERVENTIONS TO PREVENT DELIRIUM IN THE CRITICALLY ILL: SCOPING REVIEW

INTERVENCIONES NO FARMACOLÓGICAS PARA PROMOVER EL SUEÑO EN LA PREVENCIÓN DEL DELIRIO EN PERSONAS EN SITUACIÓN CRÍTICA: SCOPING REVIEW

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RECEIVED: 15th November, 2024
REVIEWED: 11th March, 2025
ACCEPTED: 04th June, 2025
PUBLISHED: 21st July, 2025

DOI: https://doi.org/10.29352/mill0218e.38916

RESUMO

Introdução: O delirium é uma síndrome caracterizada por um início agudo, com sinais de disfunção cerebral aguda com flutuação do estado de consciência. A abordagem inicial baseia-se na utilização de medidas não farmacológicas para prevenir o início de sintomatologia. O sono prejudicado é reconhecido como fator de risco potencialmente modificável, tendo influência sobre a recuperação da pessoa em situação crítica.
Objetivo: Mapear intervenções não farmacológicas promotoras de sono na prevenção de delirium na pessoa em situação crítica.
Métodos: O estudo consiste numa Scoping Review que inclui a pessoa adulta e idosa em situação crítica e intervenções não farmacológicas promotoras de sono na prevenção de delirium. Pretende-se responder à questão: "Quais as intervenções não farmacológicas promotoras de sono na prevenção de delirium na pessoa adulta e idosa em situação crítica?". Incluídos estudos quantitativos, qualitativos ou mistos, revisões sistemáticas, literatura cinzenta, textos e artigos de opinião com autoria na área de saúde, disponibilizados em texto integral, em português, espanhol ou inglês.
Resultados: Os resultados foram obtidos a partir da inclusão de catorze artigos e dividem-se em duas categorias: controlo ambiental (controlo de luminosidade e controlo de ruído), e planeamento e gestão do cuidado. O uso de intervenções multicomponentes demonstra-se como uma estratégia eficaz na promoção de sono para a prevenção de *delirium* na pessoa adulta e idosa em situação crítica.
Conclusão: A implementação de um protocolo de melhoria de sono reduz a incidência do *delirium*. Identifica-se a necessidade de investigação primária para a compreensão do efeito das intervenções a curto e longo prazo e a relação direta entre o sono e o delirium.

Palavras-chave: *delirium*; sono; intervenções não farmacológicas; doente crítico

ABSTRACT

Introduction: Delirium is a syndrome characterised by an acute onset, with signs of acute brain dysfunction and fluctuations in the state of consciousness. The initial approach is based on the use of non-pharmacological measures to prevent the onset of symptoms. Impaired sleep is recognised as a potentially modifiable risk factor, influencing the recovery of the person in critical condition.
Objective: To map sleep-promoting non-pharmacological interventions in the prevention of delirium in the critically ill.
Methods: The study consists of a Scoping Review that includes adult and elderly people in critical condition and non-pharmacological interventions that promote sleep in the prevention of delirium. The aim is to answer the question: "What are the non-pharmacological interventions that promote sleep in the prevention of delirium in adults and the elderly in critical condition?". Included were quantitative, qualitative, or mixed studies, systematic reviews, grey literature, texts, and opinion articles authored in the health field, available in full text, in Portuguese, Spanish, or English.
Results: The results were obtained from fourteen articles and are divided into two categories: environmental control (light control and noise control) and care planning and management. The use of multicomponent interventions has been shown to be an effective strategy in promoting sleep for the prevention of delirium in adults and elderly people in critical situations.
Conclusion: The implementation of a sleep improvement protocol reduces the incidence of delirium. There is a need for primary research to understand the effect of short- and long-term interventions and the direct relationship between sleep and delirium.

Keywords: delirium; sleep; non-pharmacological interventions; critically ill

RESUMEN

Introducción: El delirium es un síndrome caracterizado por un inicio agudo, con signos de disfunción cerebral aguda y fluctuaciones en el estado de conciencia. El abordaje inicial se basa en el uso de medidas no farmacológicas para prevenir la aparición de los síntomas. La alteración del sueño se reconoce como un factor de riesgo potencialmente modificable, que influye en la recuperación de la persona en estado crítico.
Objetivo: Mapear intervenciones no farmacológicas que promuevan el sueño en la prevención del delirio en personas en situación crítica.
Métodos: El estudio consiste en una Scoping Review que incluye personas adultas y ancianas en estado crítico e intervenciones no farmacológicas promotoras del sueño en la prevención del delirium. El objetivo es responder a la pregunta: "¿Cuáles son las intervenciones no farmacológicas que promueven el sueño en la prevención del delirium en adultos y ancianos en estado crítico?". Se incluyeron estudios cuantitativos, cualitativos o mixtos, revisiones sistemáticas, literatura gris, textos y artículos de opinión de autoría en el área de la salud, disponibles a texto completo, en portugués, español o inglés.
Resultados: Los resultados se obtuvieron a partir de la inclusión de catorce artículos y se dividen en dos categorías: control ambiental (control de la luminosidad y control del ruido) y planificación y gestión de los cuidados. El uso de intervenciones multicomponentes se demuestra como una estrategia eficaz en la promoción del sueño para la prevención del delirio en personas adultas y ancianas en situación crítica.
Conclusión: La aplicación de un protocolo de mejora del sueño reduce la incidencia de delirium. Es necesaria la investigación primaria para conocer el efecto de las intervenciones a corto y largo plazo y la relación directa entre sueño y delirium.

Palabras clave: delirio; sueño; intervenciones no farmacológicas; enfermos críticos

DOI: https://doi.org/10.29352/mill0218e.38916

INTRODUCTION

Delirium is a neurocognitive disorder characterised by a disturbance of consciousness or attention, with altered cognition that cannot be explained by a pre-existing or developing disorder of the same origin, occurring in a short period of time and fluctuating during the day (American Psychiatric Association, 2023). It represents a frequent complication and a predictive factor of poor prognosis for people in critical condition, constituting a public health problem due to the negative impact it has on quality of life, requiring an approach that reduces its prevalence in intensive care settings (Pinho, 2020).

Disturbance of sleep-wake cycles and oscillation between irritability, anxiety, depression, euphoria, and apathy are characteristics associated with delirium, and it is essential to understand which risk factors are potentially modifiable so that a multidisciplinary team can intervene individually and, in turn, reduce the number and/or duration of risk factors. The first intervention in dealing with delirium is prevention. Establishing a prevention protocol aimed at changing predisposing and precipitating factors has been described as an effective strategy that reduces the incidence of delirium (American Psychiatric Association, 2023; Pinho, 2020). Non-pharmacological interventions begin with an initial approach and are based on preventing the principal of avoidable factors responsible for the development of delirium (Lôbo et al., 2010; Pinho, 2020).

In 2018, the Society of Critical Care Medicine updated its clinical practice guidelines on the prevention and management of pain, agitation/sedation, delirium, immobility, and sleep disturbance (PADIS). The most significant change from the 2013 guidelines was the inclusion of two more topics, the management of immobility and sleep disturbance (Devlin et al., 2018). These international guidelines allow nurses to take an autonomous approach to the issue in question.

There are essentially three precipitating factors for the development of delirium in intensive care units (ICUs): sedation, immobilization, and sleep deprivation. Reducing the incidence of sleep deprivation is part of the non-pharmacological approach to preventing delirium (Pinho, 2020). According to PADIS, sleep has been recognised as a potentially modifiable risk factor that influences the recovery of the critically ill person, so the implementation of interventions that promote sleep in ICUs is essential to improve health outcomes (Devlin et al., 2018).

ICUs are highly differentiated services, with standardised working rules and dynamics, focused on uninterrupted surveillance and monitoring, prioritising fundamentally physical and technical aspects of the person's care, to the detriment of the humanisation of care (Pinho, 2020). An ICU tends to be a stressful environment and is a factor that disrupts sleep patterns (Devlin et al., 2018). It is highly aggressive and stimulating due to the presence of noise and constant bright light, the need to carry out clinical procedures (almost permanently), and the presence of optical and sound alarms, creating an uncomfortable environment. In this context, the person admitted to the ICU has insufficient sleep in quantity and quality, fragmented with incomplete cycles, with an increase in light sleep and a decrease in slow-wave sleep and REM (Rapid Eye Movement) sleep (Devlin et al., 2018; Pinho, 2020). Delirium is associated with a greater disturbance of the circadian sleep cycle and an increase in daytime sleepiness. Although a cause-effect relationship between delirium and sleep is not yet well established, it is known that the amount of REM sleep is significantly lower in the presence of delirium (Devlin et al., 2018). However, changes in sleep patterns lead to physiological and psychological dysfunctions and, consequently, increase morbidity and mortality, with repercussions for the recovery of the person in critical condition (Devlin et al., 2018; Pinho, 2020).

The main reasons that led the group to draw up this review were their shared interest in the area, as well as the prevalence of delirium in people in critical condition and the repercussions on their clinical state, which is considered an underdiagnosed reality with important prognostic implications (Faria & Moreno, 2013). The driving force behind the selection of the phenomenon was precisely its relevance and the need to map the existing knowledge in the literature, which led to the following research question: 'What are the non-pharmacological sleep-promoting interventions in the prevention of delirium in critically ill adults and elderly people?'.

1. METHODS

To answer the research question, a Scoping Review was carried out, which is the type of review that makes it possible to clarify research phenomena and formulate future research questions (Peters et al., 2015). The research carried out takes into account the starting question, according to the PCC mnemonic, to define the inclusion criteria, in which: P (population) - adult and elderly people; C (concept or phenomenon of interest) - non-pharmacological sleep-promoting interventions in the prevention of delirium; C (context) – critical care. After the initial search, the search strategy was structured to identify studies on the subject, with the following keywords 'Delirium', 'Sleep', 'Non Pharmacologic*, "Critical Care", combined with Boolean operators (AND, OR) and truncation operator (*), from 14 to 20 July 2023, in the following databases: CINAHL (via EBSCO Host), Medline (via PubMed and EBSCO Host), Cochrane, Scopus, Web of Science, BASE, ProQuest and RCAAP (via B-On). The reference lists of the selected articles were scrutinised to detect other articles. Thus, the inclusion criteria were: quantitative, qualitative, or mixed studies, systematic reviews, grey literature, texts, and opinion articles authored by the health sector and freely available in full text. During the search, the publication dates of the studies were not limited, as this is an area that has not yet been explored, in order to cover a greater number of available studies. We included studies in Portuguese, Spanish, or English, as these are the languages in

DOI: https://doi.org/10.29352/mill0218e.38916

which the researchers are fluent, and which addressed non-pharmacological sleep-promoting interventions associated with delirium in critically ill adults and elderly people (over 18) in ICUs. The data was extracted by two independent reviewers. Potentially relevant articles were retrieved in full, full-text studies that did not fulfil the inclusion criteria were excluded and the reasons for their exclusion are shown in Figure 1 - PRISMA Diagram. Any disagreements that arose between the reviewers were resolved through discussion.

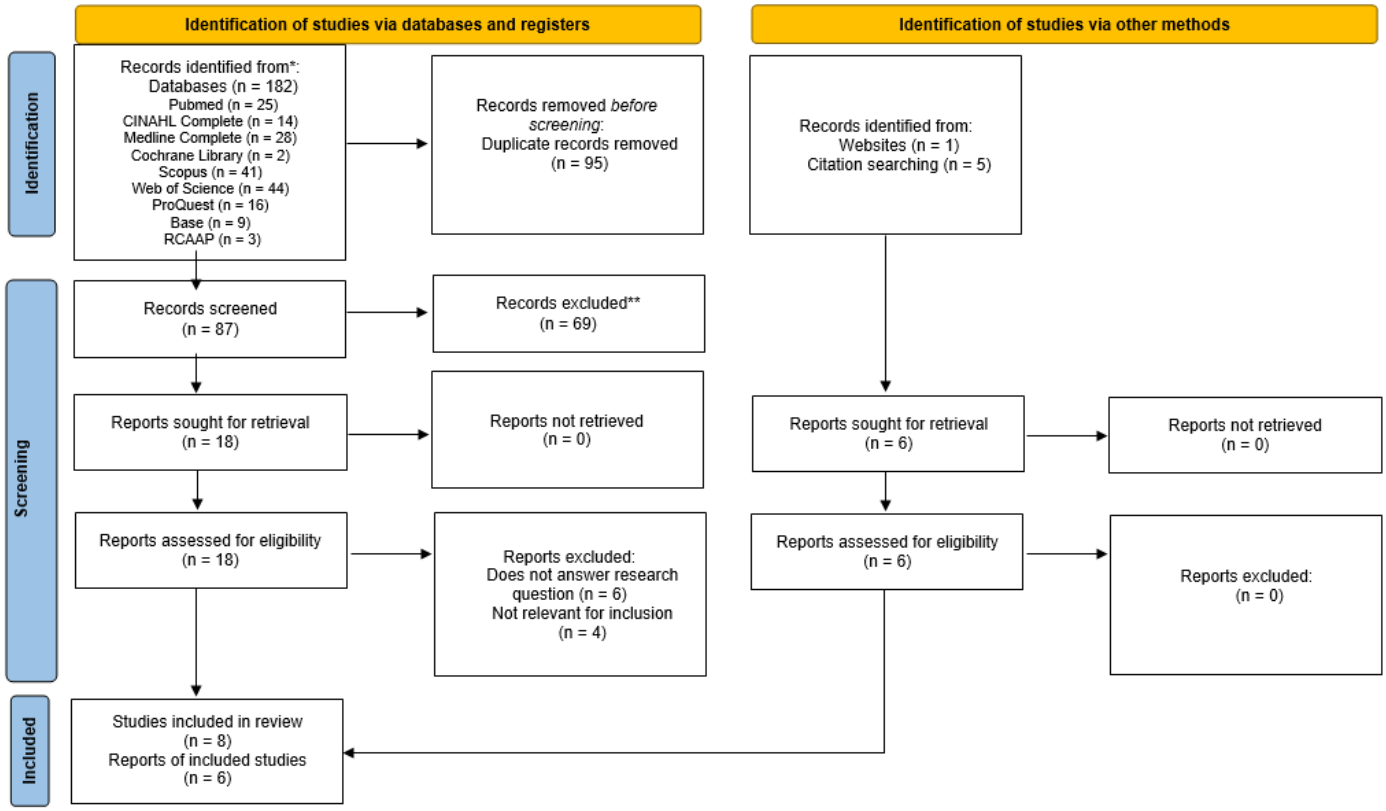

Figure 1 – PRISMA diagram (Joanna Briggs Institute, 2020)

The PRISMA diagram (Figure 1) shows that 182 articles were identified in the databases mentioned. Next, duplicate articles were removed, leaving a total of 87 articles. After this stage, the titles and abstracts were read, and 69 articles were removed, leaving a total of 18 articles. Of these 18, all were available in full text free of charge. After a detailed reading of the full text, 6 articles were excluded for not answering the research question, and 4 for not meeting the pre-defined inclusion criteria. Regarding the identification of other studies using other methods, 1 was obtained from a website, and 5 from the bibliographical references of the articles in the databases. On initially reading the title and abstract, all 6 articles met the criteria for inclusion in the Scoping Review, so the full text was read and confirmed that they answered the research question. Therefore, a total of 14 articles were obtained: 8 through the database and 6 through other methods.

3. RESULTS

After analysing the articles, we obtained two main categories: environmental control (light control and noise control) and care planning and management. In summary, within the environmental light control, we highlight interventions such as optimising the environment with natural light, promoting daytime wakefulness cycles, promoting the circadian cycle, using night eye masks, and adjusting lighting at night. In terms of environmental noise control, we highlight interventions such as reducing external noise (alarms, voices, and procedures) in the hospitalised person's unit, and using earplugs at night. In the last category of care planning and management, the evidence shows the following interventions: cognitive stimulation during the day, particularly visual and auditory acuity; mobilisation during the day; guidance for the person in all aspects; organisation of procedures in groups at night; restriction of care/procedures at night; promotion of a minimum period of 4-8 hours of sleep; implementation of the hospitalised person's preferences regarding bedtime, ritual and sleeping position; and use of aromatherapy, relaxing massage or music therapy.

With regard to the studies included in this scoping review, a table (Table 1) was drawn up to summarise all the information and is structured as follows: Title, Author, Year, Type of Study, Scope of the study, Results, and Conclusions.

DOI: https://doi.org/10.29352/mill0218e.38916

Table 1 – Characteristics and results of the studies

Title/Author/Year	Type of Study/Scope of the study	*Results and conclusions*
1. Non-Pharmacological Nursing Interventions to Prevent Delirium in ICU Patients—An Umbrella Review with Implications for Evidence-Based Practice Lange et al. (2022)	Umbrella Review. Identification of effective non-pharmacological interventions in preventing delirium in people admitted to the ICU.	Non-pharmacological interventions could be effective in preventing and reducing the duration of delirium in ICU patients.
2. Effects of non-pharmacologic prevention on delirium in critically ill patients: A network meta-analysis Matsuura et al. (2022)	Systematic review and meta-analysis. Evaluate the efficacy of non-pharmacological interventions and determine which combination of them is effective in preventing delirium in ICU patients	Combination of sleep-promoting interventions such as adjusting ambient noise, light and night-time care.
3. Effectiveness of combined non-pharmacological interventions in the prevention of delirium in critically ill patients: A randomized clinical trial Faustino et al. (2022)	Randomised Experimental Study. Evaluation of the effectiveness of combined non-pharmacological interventions in the prevention of delirium in the critically ill.	The implementation of a package of non-pharmacological measures significantly reduced the incidence of delirium in the critically ill. Respectively, sleep-promoting measures are the use of an eye mask, earplugs and night-time care management.
4. Effect of the use of earplugs and eye mask on the quality of sleep in intensive care patients: a systematic review Locihová et al. (2018)	Literature Review. Evaluation of the efficacy of non-pharmacological interventions on sleep quality/quantity.	Positive effect of using an eye mask and earplugs on sleep quality in people admitted to an ICU.
5. Assessment of analgesia, sedation, delirium and sleep disturbance in the intensive therapy unit and description of nonpharmacological interventions Petrun (2021)	Narrative Review. Describe the validated scoring systems frequently used to assess delirium, sleep disturbances, pain and sedation, with a description of the non-pharmacological approach.	The implementation of more than one measure, such as maintaining the circadian rhythm by adjusting light and noise, offering earplugs and an eye mask.
6. Effect of nocturnal sound reduction on the incidence of delirium in intensive care unit patients Van De Pol et al. (2017)	Interrupted Time Series. Exploring the effect of a night-time noise reduction protocol on the incidence of delirium and sleep quality in the critically ill.	Implementing a night-time noise reduction protocol reduces the incidence of delirium, although it does not improve sleep quality.
7. Non-pharmacological interventions in the prevention of delirium in intensive care unit patients - a systematic review Varejão & Coelho (2022)	Literature Review. To identify recommendations in the scientific literature for non-pharmacological interventions to prevent delirium in ICU patients.	Main interventions: minimising noise, reducing artificial lighting, presence of natural daylight, use of earplugs, encouraging daytime surveillance and reducing interventions to those that are strictly necessary.
8. Protecting Sleep to Reduce Delirium in an Adult Intensive Care Thomas (2021)	Literature Review. Explore the prevention of delirium through the application of a sleep improvement protocol based on non-pharmacological interventions.	Environmental optimisation, reorientation and group care. Although the data set is small and not proven to be statistically significant, a 50% reduction in delirium cases was observed.
9. The effect of a quality improvement intervention on sleep and delirium in critically ill patients in a Surgical ICU Tonna et al. (2021)	Quasi-experimental study. Understand the effect of a multicomponent intervention on delirium and sleep quality aimed at improving sleep-wake disturbances in the ICU.	Application of the multicomponent intervention results in a significant reduction in the duration of delirium incidence.
10. The effect of earplugs during the night on the onset of delirium and sleep perception: a randomized controlled trial in intensive care patients Van Rompaey et al. (2012)	Randomized Clinical Trial. Understand the efficacy of using earplugs in preventing delirium in ICU.	The use of earplugs is useful in preventing delirium and the beneficial effects are strongest in the first 48 hours after admission to the ICU. People who used earplugs developed delirium later compared to the control group.
11. The Effect of the Sleep Promotion Interventions on Incidence of Delirium in Intensive Care Patients – Integrative Literature Review Lee (2022)	Integrative Review. Explore the effectiveness of sleep-promoting interventions in reducing the incidence of delirium in critically ill patients.	Reducing light, optimising alarms, using eye masks, earplugs, promoting daytime wake cycles and adjusting care. The effectiveness of implementing sleep-promoting interventions to reduce the prevalence of delirium is inconclusive, but the application of a bundle of interventions is useful in improving sleep quality
12. The nurse's role in preventing delirium in critically ill adult/elderly patients Oliveira et al. (2022)	Integrative Review. Get to know the nursing interventions in the identification, prevention and control of delirium in the adult/elderly person in a critical situation.	Sleep-promoting actions such as aromatherapy, relaxing massages, light appropriate to the circadian cycle, not interrupting sleep, and noise reduction. Carry out procedures during the day, providing a comfortable and preferred position for the person. More fragile people, place them in an environment with less noise.
13. Prevention of acute confusion in adults hospitalized in intensive care: Autonomous nurse interventions Sousa et al. (2019)	Integrative Review. Identify the autonomous nursing interventions that prevent acute confusion in adults admitted to the ICU.	Control of lighting and noise at night, calm and serene tone of voice, use of eye mask and earplugs, music therapy, managing the person's periods of activity and rest during the day, performing relaxation techniques
14. The effect of a multicomponent multidisciplinary bundle of interventions on sleep and delirium in medical and surgical intensive care patients Patel et al. (2014)	Cohort study. Reduce the incidence of sleep deprivation and delirium by collectively addressing risk factors through a new set of non-pharmacological interventions.	Use of a bundle of multicomponent interventions encompassing noise reduction, light reduction and person-centred care

DOI: https://doi.org/10.29352/mill0218e.38916

The fourteen studies describe that altered or deprived sleep delays the patient's recovery process and significantly increases the risk of developing delirium. One study mentions that sleep promotion should be a priority in the provision of care (Sousa et al, 2019). Five studies report that ICU patients suffer changes in their sleep pattern as a result of the stimuli present, so there should be an environmental optimisation protocol in terms of noise, light and all the various interventions to which they are subjected (Locichová et al, 2018; Oliveira et al, 2022; Thomas, 2021; Van de Pol et al, 2017; Varejão, 2022). Twelve studies report that sleep-promoting interventions include light control measures (Faustino et al, 2022; Lange et al, 2022; Lee, 2022; Locihová et al, 2018; Matsuura et al, 2022; Oliveira et al, 2022; Patel et al., 2014; Petrun, 2021; Thomas, 2021; Tonna et al., 2021; Van de Pol et al., 2017; Varejão et al., 2022). One study developed a bundle of multicomponent multidisciplinary interventions (Patel et al, 2014).

4. DISCUSSION

Delirium affects cognitive function and the prognosis of the critically ill. As a result of the surrounding environment, the person suffers changes in their sleep pattern, so the nurse's role proves to be fundamental, minimising disturbance factors through interventions that promote sleep. (Lange et al., 2022; Oliveira et al., 2022).

Petrun (2021) explains the importance of preventing the incidence of delirium according to the precipitating risk factors present in the environment in which the person is exposed, so it is important to recognise and intervene to minimise them. Non-pharmacological interventions require professionals to be properly trained and motivated to apply them, and most of them are low-cost and require no additional equipment. These interventions form the basis for delirium prevention, and it is recommended that they be implemented together rather than in isolation (Petrun, 2021).

The non-pharmacological sleep-promoting interventions that prevent delirium in adult/elderly people in critical condition identified in this review, based on the results found and in agreement with Patel et al. (2014), are related to light, noise and the care provided, and sleep promotion is assumed to be the most common strategy implemented to prevent delirium. Based on the results obtained, the group constructed two categories (Environmental Control, Care Planning and Management) in which specific evidence-based interventions that answer the original research question are grouped.

Environmental control: Lighting

Light control is effective in promoting people's psychological well-being, as they describe a feeling of security, with a pleasant outcome and a positive effect on mood (Lange et al., 2022). In agreement, reducing the intensity of light or using a bedside lamp during typical sleep hours works as a non-pharmacological intervention to improve sleep (Lee, 2022; Matsuura et al., 2022; Patel et al., 2014). During the day, it is recommended to switch on the lights in dimly lit rooms to promote wakefulness, although the presence of natural light should be chosen and maintained in the person's environment to support circadian rhythms (Lange et al., 2022; Tonna et al., 2021; Varejão & Coelho, 2022). At night: dimming the lights or using a bedside lamp during typical sleep hours and wearing an eye mask has been described as a comfortable and convenient measure by participants in several studies (Faustino et al., 2022; Lange et al., 2022; Lee, 2022; Locihová et al., 2018; Patel et al., 2014; Petrun, 2021; Sousa et al., 2019; Tonna et al., 2021). Patel et al. (2014) implemented a set of interventions to reduce light levels, such as providing eye masks to all people with a score > -4 on the Richmond Agitation-Sedation Scale (RASS).

Environmental control: Noise control

According to Lee (2022), noise in the ICU is one of the most unfavourable factors for people's sleep. The World Health Organisation recommends a maximum level of 45 decibels (dB) during the day and 35 dB at night, but the average sound level in an ICU over a 24-hour period is between 55 dB and 65 dB. A night-time noise reduction protocol encompasses a set of interventions that reduce the incidence of delirium in ICU patients (Lee, 2022).

The following interventions have been described as promoting noise control: optimising alarms in night mode, in the hours between 11 pm and 7 am (Lee, 2022; Oliveira et al., 2022; Patel et al., 2014; Tonna et al., 2021), reducing the sound volume of telephones (Patel et al., 2014), reducing the tone of voice of healthcare professionals and visitors (Patel et al., 2014; Sousa et al., 2019), reducing the number of interruptions to the sleep pattern by external stimuli (Matsuura et al, 2022; Oliveira et al., 2022; Van De Pol et al., 2017), closing the unit doors when not in use (Patel et al., 2014) and the use of earplugs (Faustino et al., 2022; Lange et al., 2022; Lee, 2022; Locihová et al., 2018; Oliveira et al., 2022; Patel et al., 2014; Petrun, 2021; Sousa et al., 2019; Van De Pol et al., 2017; Van Rompaey et al., 2012; Varejão & Coelho, 2022). Patel et al. (2014) included in their study the provision of earplugs in people with a score > -4 on the RASS scale as an intervention, proving to be an effective intervention that promotes sleep quality.

Van Rompaey et al. (2012) concluded in their randomised experimental study that there was an improvement in participants' reported perception of sleep with the use of earplugs after the first night in the ICU, although with stronger beneficial effects in the first 48 hours after admission, also showing that people developed delirium later than those who slept without earplugs. Lange et al. (2022) concluded that the use of earplugs as an intervention promotes sleep quality and reduces the risk of delirium, although

DOI: https://doi.org/10.29352/mill0218e.38916

other authors of studies in the review identified that the application of the same intervention only promoted the delay in the occurrence of delirium. Van De Pol et al. (2017) describe that the noise reduction protocol implemented in the study reduced the incidence of delirium, although there was no improvement in sleep quality. He also mentions that in future research, the protocol applied should cover a larger number of participants over a longer period of time, but this was not the case, and the limitation of the study was the fact that the sleep assessment instrument was only applied to conscious and orientated people. Its use is mentioned as a useful, economical, and easy-to-apply tool, without the need to introduce organisational changes (Lange et al., 2022). It is possible to conclude that there is a positive effect of using earplugs together with an eye mask, although Lee (2022) includes a study that describes the latter as invasive, especially for people who are unable to remove it without help. However, these interventions are mostly assumed by studies to be comfortable methods (Locihová et al., 2018), whose interventions can be applied safely, as they improve sleep quality and reduce the incidence of delirium. Adjusting the environment by reducing noise and light and minimising care during the night are interventions that are easy to implement and their implementation rate tends to be high (Faustino et al, 2022; Lange et al, 2022; Lee, 2022; Locihová et al, 2018; Matsuura et al, 2022; Oliveira et al, 2022; Patel et al, 2014; Petrun, 2021; Sousa et al, 2019; Thomas, 2021; Van De Pol et al, 2017; Van Rompaey et al, 2012; Varejão & Coelho, 2022).

Care planning and management

Locihová et al. (2018) and Patel et al. (2014) agree on the positive effect of multicomponent interventions on subjective sleep quality and a significant reduction in the incidence of delirium, confirming the positive outcome of a multicomponent protocol emphasising sleep promotion. Based on the above, the interventions to be integrated into care planning consist of promoting daytime waking cycles (Lee, 2022; Thomas, 2021; Varejão & Coelho, 2022) with periods of daytime mobility or sitting in an armchair during this period (Sousa et al., 2019; Tonna et al., 2021). There is a consensus that the person should be orientated in all aspects (using calendars, clocks, whiteboards and family involvement when permitted) (Faustino et al., 2022; Lange et al., 2022; Patel et al., 2014; Thomas, 2021), with combined cognitive stimulation during the day, with care to help stimulate auditory and visual acuity, word association games (Matsuura et al., 2022). Questioning the person about their desired time of sleep and promoting a period of sleep at night (Thomas, 2021), providing a preferred comfortable position, using aromatherapy, giving relaxing massages (Oliveira et al., 2022), or providing other relaxation techniques such as musicotherapy (Lange et al., 2022; Sousa et al., 2019).

Interventions that allow for adequate care management are: organising care and grouping procedures whenever possible (Lee, 2022; Patel et al., 2014; Thomas, 2021; Tonna et al., 2021), limiting/restricting the provision of non-urgent care during the night (Lee, 2022; Matsuura et al., 2022) and completing interventions before 11 pm, or postponing their completion until after 8 am (Patel et al., 2014), with the aim of minimising sleep interruptions (Lee, 2022; Matsuura et al., 2022; Oliveira et al., 2022). In addition, the use of signs on the door of the rooms/units with the "STOP" sign is a reminder not to disturb the person during the night (Tonna et al., 2021).

Non-pharmacological sleep-promoting interventions are inconsistent during the night, lacking guidelines and rules regarding work dynamics and sleep-promoting activities in the care of ICU patients (Lee, 2022). The process of implementing interventions or strategies to prevent the incidence of delirium can be guided by adequate care management and the practice of action protocols (Faustino et al., 2022). The use of multicomponent interventions has been shown to be statistically significant in reducing the incidence and duration of delirium, length of hospital stays, and mortality, supporting the hypothesis that their combination may produce a more effective outcome compared to single-component interventions and standard care (Faustino et al., 2022). Matsuura et al. (2022) report that the condition of insufficient sleep leads the person to experience an imbalance between activity and rest, inducing delirium. It also reinforces that, due to barriers such as high workload, lack of time, and the complexity of the skills necessary to implement multicomponent interventions in the specific ICU environment, sleep promotion is accepted as the most effective set of interventions among the combinations of multicomponent pharmacological non-interventions (Matsuura et al., 2022).

Patel et al. (2014) confirmed that a set of multidisciplinary multicompetent interventions, in bundles, are safe, effective, and practical for the ICU. The results of the cohort study were reflected in sleep questionnaires completed by inpatients, who reported significantly better average sleep quality after implementing interventions related to noise, light, and staff activities, leading to a reduced incidence of delirium. However, it emphasizes that the possibility of broader implementation of the set of multidisciplinary interventions must be considered and that research in this area deserves greater emphasis to better analyse the effects of the results. He emphasizes that there should be a universal program to raise awareness among professionals about the importance of screening for delirium in all ICU patients (Patel et al., 2014). Thomas (2021) shows that the use of a night protocol at the initiative of nurses can have a positive financial impact for the institution, since the increase in financial costs with the development of delirium is around 39%. In his study, he promoted a practice change project to reduce the incidence of delirium through a sleep improvement protocol, with day and night interventions to control noise, light, and reduce stimuli.

DOI: https://doi.org/10.29352/mill0218e.38916

To conclude, it is important to highlight the role of the nurse as the professional who can most contribute to preventing the incidence of delirium, as they spend more time with the person than other health professionals (Oliveira et al., 2022; Varejão & Coelho, 2022).

CONCLUSION

Non-pharmacological sleep-promoting interventions to prevent delirium in the critically ill are more effective when applied together in the form of a multicomponent intervention. Systematised non-pharmacological interventions were identified in two categories - Environmental Control (Light Control and Noise Control) and Care Planning and Management. The implementation of various sleep-promoting non-pharmacological interventions is an economical and effective tool for improving sleep quality and preventing delirium.
The evidence shows that the implementation of a sleep improvement protocol by nurses improves the care provided to the person and reduces the incidence of delirium, and its use in all people as a standard of care is advocated.
A limitation of this study is the lack of research into this phenomenon and the lack of studies with short- and long-term results to assess the effectiveness of implementing non-pharmacological sleep-promoting interventions.
In general, most of the articles included in this review mention that more studies should be carried out into the effect of applying non-pharmacological interventions, preferably with a larger sample of participants and over a longer period, using appropriate sleep assessment instruments. There is a need for more research studies, particularly primary studies that make it possible to understand the effects of these interventions on people's short and long-term outcomes, as well as more research into the direct relationship between non-pharmacological sleep-promoting interventions and the prevention of delirium.
Nurses play a leading role in adopting strategies with beneficial effects on the person's clinical situation, more specifically in identifying modifiable risk factors, with the aim of improving comfort and faster, safer, more reassuring recovery, with the lowest risk of developing cognitive disorders. The nurse is also responsible for in-service training in the promotion of behavioural changes through health education, updating the team in light of the most up-to-date evidence of good practice in the care of critically ill people.

AUTHORS' CONTRIBUTION

Conceptualization, C.B., M.A., S.D. and F.V.; data curation, C.B. and M.A.; formal analysis, C.B. and M.A.; funding acquisition, C.B., M.A., S.D. and F.V.; investigation, C.B., M.A., S.D. and F.V.; methodology, C.B., M.A., S.D. and F.V.; project administration, C.B. and M.A.; resources, C.B. and M.A.; software, C.B. and M.A.; supervision, C.B., M.A., S.D. and F.V.; validation, C.B., M.A., S.D. and F.V.; visualization, C.B., M.A., S.D. and F.V.; writing-original draft, C.B. and M.A.; writing-review and editing, C.B., M.A., S.D. and F.V.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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