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THE EFFECT OF MUSIC THERAPY ON IMPROVING SLEEP QUALITY IN CHILDREN DURING HOSPITALIZATION: LITERATURE REVIEW

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ABSTRACT

Hospitalization is a crisis situation that occurs in children when they are treated at the hospital, one of the conditions experienced by children when they are sick is the reduced need for sleep. The quality of sleep in children is very necessary when sick to boost the immune system in a child's body so that it will help in the healing process of an illness that is experienced. To explore and look for the effect of music therapy on improving the quality of sleep in children during hospitalization. This study used the literature review method with article searches conducted on the Pubmed, Science Direct and Google Scholar electronic databases. There were 1,891 articles on PubMed, Science Direct and Google Scholar, but only 10 articles met all inclusion criteria and were reviewed. There is an effect of music therapy on improving sleep quality in children during hospitalization. it can be concluded that one of the non-pharmacological therapy programs in improving the quality of sleep in children while being treated at the hospital is using music therapy. This is evidenced by the results of several studies, namely the average quality of sleep in children who underwent hospitalization in the group before and after the administration of music therapy experienced an increase in the quality of children's sleep. Giving music therapy can be given through a tape recorder, MP3 which is usually given at a certain time. Music is received by the hearing organs which are then channeled to the center of the brain called the limbic system which regulates emotions in humans.

Keywords: children; hospitalization; music therapy; sleep quality

INTRODUCTION

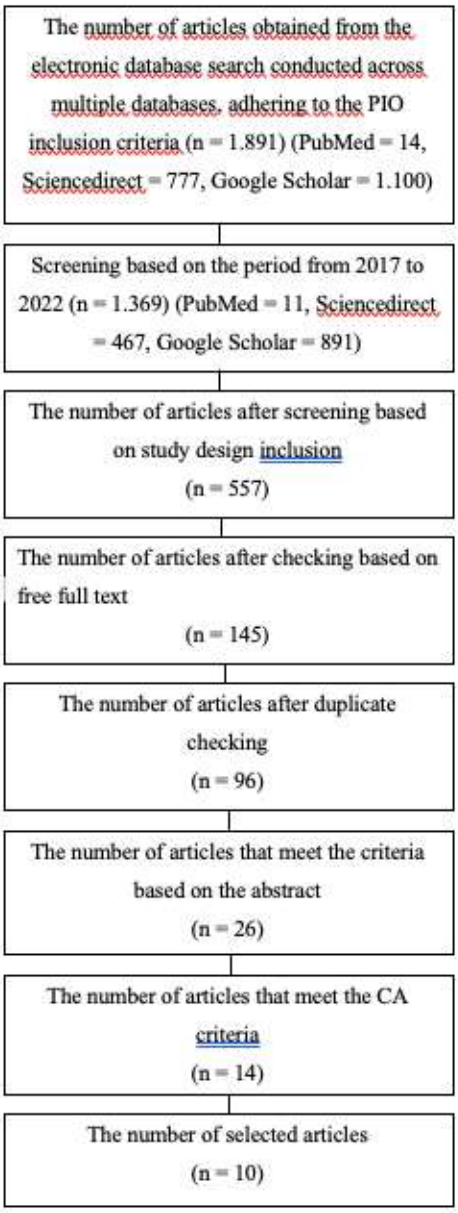
Hospitalization is a crisis situation for children when they are sick and receive treatment in the hospital. One aspect that has been lacking attention is the fulfillment of sleep needs, especially nighttime sleep (Helda et al., 2015). Children experience fear during the treatment process, and the uncomfortable hospital environment can make them irritable and have difficulty sleeping, which can affect the quality of their sleep. In a sick condition, sleep needs are crucial to improving the immune system in the body, thereby aiding the healing process of a disease. According to Sekartini (2012), the prevalence of sleep problems among children undergoing hospitalization in Indonesia is quite high, around 44.2%, such as frequent awakenings at night. Data obtained from 285 respondents with sleep disturbances showed that 51.3% experienced disrupted sleep, 42% slept less than 9 hours at night, and more than 3 nighttime awakenings lasting over 1 hour.

Sleep is a necessary process for humans in the formation of new body cells, repair of damaged cells (natural healing mechanism), allowing organs to rest and maintaining the balance of body metabolism and biochemistry. Energy is conserved during sleep, and the bones and muscles become relaxed. The sleep-wake cycle is centrally regulated in the brain and influenced by daily habits and the environment. The physiology of sleep involves the coordination of sleep-related activities, including the alternating activation and suppression of brain centers for sleep and wakefulness. There are several approaches that can be used to address sleep disturbances in children, both pharmacological and non-pharmacological. Pharmacological therapy involves the

administration of sleep-inducing medications such as benzodiazepines (sedatives). These hypnotic drugs are effective in facilitating sleep onset, prolonging sleep duration, and reducing the frequency of awakenings, but they can have negative effects. Non-pharmacological interventions can be implemented through sleep hygiene, cognitive-behavioral therapy, stimulus control therapy, and music therapy. Music therapy can enhance or improve physical, emotional, cognitive, and social conditions for individuals of all ages, and one of its benefits in sleep quality is promoting deeper sleep in children and reducing stress (Handayani et al., 2022).

METHOD

This study is a systematic review conducted using the PICO method. The researchers performed a literature search in this literature review using databases with high and medium-quality criteria, including PubMed, ScienceDirect, and Google Scholar. The search keywords used in the journal search were "child in hospital" AND "music therapy" AND "sleep quality". During the search phase, a total of 1,891 articles/journals were found (PubMed = 14, ScienceDirect = 777, Google Scholar = 1,100) after filtering from the years 2017 to 2022, with a focus on the theme (PubMed = 11, ScienceDirect = 467, Google Scholar = 891). The researchers then selected articles according to the inclusion study design, resulting in 557 articles. Among these, 145 articles had free full text availability. After checking for duplicates, there were 96 articles remaining. Based on the abstracts, 26 articles were deemed relevant, and further critical appraisal led to a final selection of 14 articles. The obtained 10 journals will be analyzed to establish a theoretical foundation that supports the research problem. Here is a flowchart illustrating the process of journal screening:



RESULTS

The selected research articles consisted of quantitative studies conducted within the past 5 years, specifically from 2018 to 2022. Out of the 10 selected articles, 1 article used a case-control approach, 6 articles employed quasi-experimental designs, and 3 articles utilized a randomized control approach. Detailed information about the articles is presented in Table 1.

No	Author	Title	Sample	Method	Result
1	(Anggerainy et al., 2019)	*Music Therapy and Story Telling: Nursing Interventions to Improve Sleep in*	31 respondents	*Quasi Experimental Studies*	($p < \alpha$; $\alpha = 0.05$), indicating that music therapy and storytelling significantly improved scores on the sleep disturbance scale in children hospitalized.

		Hospitalized Children			
2	(Nukha et al., 2020)	*Comparison of the Effectiveness of Lavender Aromatherapy and Pop Music on the Sleep Quality of Hospitalized Children*	30 respondents	Quasi Experimental Studies	(p value 0.606 > 0.05), indicating that there is no significant difference in effectiveness between the two intervention groups; both are equally effective in improving children's sleep quality.
3	(Sriasih et al., 2019)	*The Effects of the COMMASH-E Intervention on the Fatigue, Sleep Quality and Functional Status of Children with Cancer in Indonesia*	58 respondents	Quasi Experimental Studies	The results of the dependent t-test showed that the intervention group had a significant difference in fatigue scores, sleep quality, and functional status before and after the intervention ($p < 0.05$), while no differences were found in the control group ($p > 0.05$).
4	(Arista et al., 2019)	*The Effect of Classical Music Therapy on Sleep Disturbances in Hospitalized Pediatric Patients at RSI Sakinah in Mojokerto District*	30 respondents	Quasi Experimental Studies	The results of the Wilcoxon Signed Rank test with a p-value of 0.000 or < α (0.05) indicate that there is a significant effect of music therapy on sleep disturbance in children hospitalized at RSI Sakinah in Mojokerto Regency.
5	(Zhang et al., 2020)	*Music Therapy for Early Postoperative Pain, Anxiety, and Sleep in Patients after Mitral Valve Replacement*	222 respondents	*Case Control Studies*	The sleep duration in the music group was significantly longer compared to the control group (312.21 vs 256.29 minutes, $p < 0.05$).
6	(Stokes et al., 2018)	*Music exposure and maturation of late preterm sleep-wake cycles: a*	30 infants	*Randomized Controlled Studies*	The results of this study indicate that there was a change in the sleep quality of children who received music therapy from 21.07 to 21.13.

		randomised crossover trial			
7	(Gebuza et al., 2020)	*The effects of kangaroo mother care and music listening on physiological parameters, oxygen saturation, crying, awake state and sleep in infants in* NICU	100 respondents	*Randomized Controlled Studies*	During kangaroo care and music stimulation, significantly fewer children woke up ($p < 0.003$) and more children fell asleep ($p < 0.001$) compared to kangaroo care alone ($p < 0.001$). This suggests that kangaroo care and kangaroo care with music stimulation can be used to stabilize the physiological function of infants.
8	(Yang et al., 2018)	*The Effect of Pop Music Therapy on the Sleep Quality of School-Aged Children (6-12 years old) Undergoing Treatment at RSUD Ambarawa*	35 children	*Quasy Experiment al*	With a p-value of $0.002 < 0.05$, it can be concluded that there is a significant difference between the sleep quality before and after the administration of music therapy.
9	(Anggraini, 2018)	*Comparison of Sleep Duration in Infants Exposed to Classical Music and Those Not Exposed, Aged 0-28 Days*	30 respondents	*Quasi eksperiment al Studies*	The mean value for infants not exposed to classical music was 15.46, while the mean value for infants exposed to classical music was 18.00, indicating an increase of 2.54. This indicates that classical music therapy is effective in increasing the duration of sleep in infants.
10	(Liu et al., 2019)	*Effects of mindfulness-based stress reduction combined with music therapy on*	101 respondents	*Randomized Controlled Trials*	The research results indicate an improvement in sleep quality before and after the intervention, from an initial value of t=0.165 to t=6.181.

	pain, anxiety, and sleep quality in patients with osteosarcoma

DISCUSSION

From the reviewed 10 articles, the results of the respondent characteristics based on age showed that the majority of respondents were children in the age range of 0-15 years. Based on the theory (Anggerainy et al., 2019), it was revealed that sleep problems affect approximately 14-45% of children aged 2-4 years, as children in this age group have difficulties adapting and controlling their emotions. Sleep disturbances in hospitalized children can be associated with pain, discomfort, noise, light, delayed bedtime, unfamiliar environment, and homesickness. After reviewing the 10 articles, the researchers found several facts about non-pharmacological therapies that can improve sleep quality in hospitalized children, such as using music as a therapy. The research results showed a significant difference in the sleep quality of children before and after music therapy. After receiving music therapy, there was an improvement in sleep quality ($p<0.05$) (Anggerainy et al., 2019; Liu et al., 2019; Arista et al., 2019; Sriasih et al., 2019; Zhang et al., 2020). Additionally, there was a significant improvement in sleep quality in children who received a combination of music therapy with other therapies such as storytelling therapy, aromatherapy, sleep hygiene, and kangaroo care. The findings indicated that there was no difference in effectiveness between the two interventions; both had a positive impact on improving sleep quality in children (Yang et al., 2018). There was an improvement in sleep cycles in hospitalized children who received interventions compared to those without interventions, and a longer sleep cycle was observed (Stokes et al., 2018; Gebuza et al., 2020; Zhang et al., 2020).

CONCLUSION

Based on the 10 articles reviewed by the author in the previous chapter, it can be concluded that one of the non-pharmacological therapies to improve sleep quality in hospitalized children is the use of music therapy, specifically instrumental and classical music.

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