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Combination of Baby Massage and Ear Shenmen to Enhance Infant Sleep Quality: Quasi-Experimental

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ABSTRACT

One of the determinants of expansion and progression is seen from how well you sleep. According to WHO, in the world babies experience poor sleep quality more than 33%, in Indonesia more than 44%. More than 70% of parents do not consider it a problem at 2022. Non-pharmacological therapies, such as baby massage, Ear Shenmen acupressure to calm down the baby's body to ensure the infant can sleep soundly. The goal was intended to evaluate the combined efficacy of newborn massage and ear shenmen regarding the content of infants' sleep. Design quasi-experimental pre-tests with additional control groups. Baby Nad Kids And Mom's Spa: Population of Infants Aged 3-12 Months. A sample of 36 babies with purposive sampling, divided into 3 groups. The first group is baby massage and ear shenmen, the second group is baby massage and the third group is ear shenmen. Each group was given treatment for 3 weeks with 1 intervention per week, duration of 30 minutes, BISQ instrument with 15 question items. Bivariate data with paired t-test and multivariate with post-hoc bonferroni anova test. The results of infants' sleep quality in the pre test showed the combined vs baby massage value $p=0.921$, Combined vs Ear Shenmen value $p=1,000$, Baby Massage vs Ear Shenmen value $p=0,464$, whereas for in the combined group of delta values (124.50), infant massage group (72.80), ear shenmen group (48.50) and confidence value $p=0.001$ ($p<0.05$). Each group showed an average post value of >200 , indicating that all groups were equally effective in raising the caliber of infants' sleep. But, the combined group with a delta value of 124.50 showed a higher increase, Consequently, it may be said that combining infant massage utilizing ear shenmen is more efficacious in enhancing the quality of infants' sleep.

Keywords: Baby Massage; Baby Sleep Quality; Combination, Ear Shenmen

Introduction

Sleeping in babies is not just to meet basic needs but there are many benefits that are important for the expansion and progression of infants. This is important because in the process of sleep the brain and all parts of the body will relax from activities before bedtime, but there are several other important parts of the body that work when the baby sleeps[1].

One of the determinants of a baby's expansion and progression is to assess the calibre of a baby's sleep. According to WHO, more than 33% experience poor sleep quality, while in Indonesia more than 44%. More than 72% of parents do not have a problem with the quality of their baby's sleep [2][3][4][5]

Causes of poor baby sleep quality that can be overcome with massage include health factors, uncomfortable environments, physical activity, nutrition, and inappropriate beds. Baby massage can improve sleep quality because it helps release the hormone serotonin which produces melatonin, so babies sleep easier and sleep longer [6]. At birth, the baby's sleep pattern has been formed, even according to some experts it has been formed when the baby is still in the mother's womb, so this problem has a significant

influence on the infant's condition related to expansion and progression, diet that can lead to other problems such as stunting[7], disruptive behavior (ADHD) and low learning achievement in old age [8][9]. The consequences of this problem can affect the baby, but it can also cause family anxiety and maternal anxiety [10][11].

It is very important to meet the infant's slumber needs because it is essential in order to facilitate their progress and development. To treat sleep disorders, a wide variety of medications and non-medications have been developed. The drug melatonin is one example of pharmacological therapy that has attracted the interest of experts today due to its great inert-free therapeutic accuracy[12].

Baby massage has many benefits, not only triggering good baby sleep quality, but also triggering an increase in body scales, increased self-focus, and maximizing the immune system. A way that can bring happiness and lower anxiety, especially in babies, is massage. The baby becomes calm and restful after his muscles are relaxed with a gentle massage. Babies build a beautiful relationship with their parents through their gentle touch [13]. Clinical research has shown that gentle massage and touch help babies sleep better and become stronger[14].

Increased serotonin secretion during massage makes babies sleep better or longer. Serotonin, the main transmitter, suppresses the activity of the reticular activating system and other brain activities, which contribute to the formation of sleep. Melatonin is produced more when light enters the eye is reduced, which causes it to sleep more and be more restful at night[15][16].

One acupressure point, Ear Shenmen, can be used to treat sleep disorders[17]. Acupressure is a massage technique at a specific point in the body that helps the body repair itself naturally. However, acupoints that fall under the category of ear acupressure are ear shenmen points, also known as auricular shenmen items. The point of Ear Shenmen is referred to as the sedation point because it can strengthen the heart pathways and improve blood flow [18][19].

Efforts to maintain good baby sleep quality can be carried out jointly between health workers and parents. Additional insight to parents, especially new parents, needs to be given, starting from paying attention to the health status of the baby, cleanliness, environmental calmness and affection in the form of touch through massage.

Assessing or evaluating the combined effectiveness of baby massage and ear shenmen on infants' sleep quality is the goal of this study. The provision of appropriate and comprehensive education is anticipated to be capable of resolving issues such a interfere with the quality of baby sleep.

Methods

Methodology of quasi-experiment Pre-test-post and terminal test analysis including the addition of a group in charge. The population is Babies 3-12 Months of Age at Baby Nad Kids And Mom's Spa in February - March 2024. The sampling technique is purposive sampling consisting of 36 babies in three groups. The combined group was given baby massage and ear shenmen intervention, the baby massage control group was given baby massage intervention and the ear shenmen control group was given ear shenmen intervention. Each group was given treatment for 3 weeks with 1 intervention per week, duration of 30 minutes, Short Infant Sleep Questionnaire (BISQ) instrument before and after intervention with 15 question items and normal category, normaly if the child sleeps more than or equal to 14 hours per day. Filling is done before and after the intervention.

Sleep quality measurements were carried out on day 7 after the intervention with monitoring through the baby's parents to not be given any other therapy other than the intervention. The researcher submits an application for permission to the respondent, the content of the approval in the form of the purpose of the research activity, benefits for the health sector, the researcher and of course for the respondent, maintaining the confidentiality of the respondent's data with no 011/I/2024. Univariate, bivariate data analysis is a paired t-test and multivariate test to evaluate differences between groups using the anova post hoc bonferroni test.

Results and Discussion

Table 1.
Age and gender of the baby

No	Category	Respondent Group						P Value
		Combination		Baby Massage		Ear Shenmen		
		n	%	n	%	n	%	
1.	Baby's age (months)							
	1-4	2	16,7	1	8,3	3	25	0,965
	5-8	7	58,3	7	58,3	6	50	
	9-12	3	25	4	33,3	3	25	
	Total	12	100	12	100	12	100	
2.	Gender							
	Male	9	25	9	75	4	33,3	0,643
	Female	3	75	3	25	8	67	
	Total	12	100	12	100	12	100	

Table 2.
Infant Massage and Its Effects on Sleep Quality: Combined Group Ear Shenmen, Baby Massage Group Control Baby Massage And Ear Shenmen Group Control Ear Shenmen

No	Group	Sleep Quality		Delta	P Value
		Mean SD±Pre	Mean SD±Post		
1.	Combination	115,17±15,27	239,7±11,41	124,5	0,001
2.	Baby Massage	162,83±44,95	234,9±13,31	72,8	0,001
3.	Ear Shenmen	193,08±23,87	241,6±8,35	48,5	0,001

Table 3.
Differences In Average Before And After Baby Massage: Sleep Quality Ear Shenmen Treatment In The Combined Collective, Baby Massage In The Baby Massage Control Group And Ear Shenmen In The Ear Shenmen Control Group.

Variable	Valuation	Group	Mean±SD	P value
Sleep quality	Preliminary Test	Combination	115,17±15,27	0,337
		Baby massage	162,83±44,95	
		Ear shenmen	193,08±23,87	
		Combined vs Baby Massage		0,921
		Combined vs Ear Shenmen		1,000
		Baby Massage vs Ear Shenmen		0,464
	Terminal Test	Combination	239,7±11,41	0,001
		Baby massage	234,9±13,31	
		Ear shenmen	241,6±8,35	
		Combined vs Baby Massage		0,002
		Combined vs Ear Shenmen		0,001
		Baby Massage vs Ear Shenmen		0,064
	Delta	Combination	124,5	0,001
		Baby massage	72,8	
		Ear shenmen	48,5	
		Combined vs Baby Massage		0,001
		Combined vs Ear Shenmen		0,001
		Baby Massage vs Ear Shenmen		0,101

Table 1, the frequency distribution data of respondent characteristics showed that the age of the infant in the highest age category was 5-8 months as many as 7 respondents (58.3%) and the lowest age was 1-4 months as much as 1 (8.3%) and showed no difference in each group with a value of $p=0.965$.

Table 2, the average pre-sleep quality results in the combined group were 115.17 ± 15.27 , the baby massage control group was 162.83 ± 44.95 and the ear shenmen control group was 193.08 ± 23.87 . The average post sleep quality in the combined group was 239.7 ± 11.41 , the baby massage control group was 234.9 ± 13.31 , and the ear shenmen control group was 241.6 ± 8.35 .

Findings from the paired t-test of sleep quality in the combined collective obtained significant values in each of the three collective with a p value of 0.0001 (<0.005), in order to ascertain that there is a combined impact of baby massaging and ear shenmen on sleep quality in babies between one and twelve months old.

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The assessment of the difference in each group (combined and 2 control groups) using the anova post hoc bonferroni statistical test by looking at the delta value of sleep quality showed a difference amidst the combined collective and the 2 control groups having a substantial value of $p=0.001$. The merged group with the baby massage group with a significant value of $p=0.001$. The combined group with the ear shenmen group demonstrated a considerable difference. of $p=0.001$, while the baby massage group with ear shenmen showed no difference with a noteworthy value of $p=0.101$. Each group showed an average post value of >200 , indicating that all groups were equally effective in raising the caliber of infants' sleep. But, the combined group with a delta value of 124.50 showed a higher increase, Consequently, it may be said that combining infant massage utilizing ear shenmen is more efficacious in enhancing the quality of infants' sleep.

After intervention with a synthesis of infant massage and ear shenmen in the combined or combined group, the administration of infants massage in the baby massage group under control and ear shenmen in the ear shenmen control group had an rise in the mean value of sleep quality.

This research is supported by research by [20] that respondents underwent an enhancement in the quality of slumber by 73%. In line with the opinion [21] which states that a gentle massage on babies can provide good motor stimulation and have a relaxing effect. Baby massage can also be defined as a gentle and gentle stimulation or stimulation over the face of the body that affects the respiratory system, blood circulation, and muscle nerves[12].

Massage is a tactile language associated with babies. By massaging it, a mother can calm and make her baby feel comfortable, and massage is also a way to communicate with her baby and build a stronger relationship between the two of them [3][22][23].

Ear Shenmen, the waypoint that facilitates the flow of blood from the heart, can transmit power and play an important function in sleep. Suppression or acupressure in this area activates the nervous system and the analgesic system or pain reduction, which leads to the release of serotonin, which can lead to sleep. Serotonin, or 5-hydroxytryptamine (5-HT), performs a significant role in the brain system that regulates sleep, feelings, and emotions[3] [17] Having a task in circadian frequency, the pineal gland is activated by the secreted serotonin to secrete more of the hormone melatonin (wake-wake cycle) of a person [24].

Baby massage combined with ear shenmen point pressure or acupressure has the same way of producing serotonin and melatonin. One of the advantages of ear shenmen point suppression is that it produces endorphin hormones through the transmission of neurotransmitters to the spinal medulla, mesencephalon, and the pituitary complex of the hypothalamus, which results in the production of endorphins that trigger muscles to relax, decrease pain, and meningitis [18][25].

By emphasizing specific parts of the body (acupoints), acupressure is a traditional method that aims to relieve and reduce pain. To improve health, acupressure is used to help harmonize life force (chi). In addition, acupressure has other functions in blood circulation, maintaining yin and yang balance, maintaining normal body functions/functions, and increasing body relaxation. In addition, the effect improves sleep quality [26].

In the third of the earlobe fossa, this study performed acupressure. The cranial and spinal nerves are divided into areas that function for motor and sensation, according to the anatomical structure of the earlobe.

The motor branch of the facial nerve (CN VII) controls the muscles of the outer ear. The sensation region is associated with The vagus nerve's auricular branch (ABVN), which performs acupressure during physiological sleep. With ear stimulation, ABVN signals are sent related to the medulla's Nucleus of the Solitary Tract (NTS) oblongata via the jugular ganglion. The NTS also functions to coordinate various reflexes, such as the carotid sinus reflex, aorta, vomiting, and cough, and is also the position where serotonin receptors are bound[16][27].

Acupressure in the Ear Shenmen also triggers the production of endorphins, with a relaxation function. Thus, a combination of infant massage and acupressure on the Ear Shenmen points can contribute to improved how well sleep. Therefore, the amalgamation of infant massage and ear shenmen can be an adequate combination of complementary therapies in getting babies to sleep better.

Conclusion

The combination of infant massage and ear shenmen is more influential in enhancing the quality of infant sleep. The mean of each group showed an improvement above the normal limit or more than 200, which indicates that all groups were equally effective in making things better infants' sleep. The group with a delta value of 124.50 showed the largest increase..

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