

A DIFFERENT APPROACH TO SLEEP PROBLEMS OF INFANCY: SWADDLING ABOVE THE WAIST*

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SUMMARY: Çağlayan S, Yaprak I, Seçkin E, Kansoy S, Aydınlioğlu H. (Department of Pediatrics, Tepecik Social Security Teaching Hospital, Izmir, Turkey). A different approach to sleep problems of infancy: swaddling above the waist. Turk J Pediatr 33: 116-119, 1991.

Daytime sleep and wake periods of ten swaddled infants were periodically recorded by their mothers. The babies were swaddled above the waist for the first four days of the second, third and fourth months of life. During the next four days of the same months, the same infants were monitored with no swaddling. Comparison of the two sleep situations (swaddled and unswaddled) demonstrated that the increase in the total daytime sleep was statistically significant when the baby was loosely swaddled above the waist. *Key words:* sleep, problems, swaddling.

Sleep disorders are considered important complaints in the first four months of life. Several studies have documented the sleep problems in infants¹⁻³ and children^{4, 5}. Temperament^{5, 6}, perinatal complications⁷, neonatal irritability², and daytime separation from the mother⁴ were all cited as causes of frequent waking or sleep problems of infants.

During the first few months of postnatal life, any internal or external stimulus during sleep can activate the Moro reflex, resulting in the waking of the infant. If the arms of the infant are loosely swaddled in front of the body, the action involved in the Moro reflex will be suppressed by external compression, and the infant will remain asleep. Additionally, a loose wrapping may provide confidence for the sleeping infant by preventing disturbing, and perhaps mentally traumatizing, Moro reflex activity.

The ancient custom of swaddling the infant during the first year of life is a common practice in rural Turkey and is believed to increase the sleeping periods of babies. In a population health survey conducted in Turkey⁸, it was found that the practice of swaddling was quite common throughout the country and that 93.1% of mothers swaddled their infants. In the same study, it was also found that there was an inverse relationship between the practice of swaddling and the

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educational level of mothers; the more educated, the less likely they were to swaddle their infants, but still the percentage of swaddling was high (74.2 %).

There are multiple risks involved in tightly swaddling the entire body; some of the dangerous ones being an increased tendency for hip dislocation, suffocation, and aspiration of vomited materials. Bearing this in mind, loosely swaddling the infant above the waist might prolong the infant's sleep periods.

This study was designed in an out-patient setting among breastfed infants to determine whether swaddling an infant above the waist contributes to the prolongation of sleep durations.

Material and Methods

From February 1988 to January 1989, ten infants were periodically monitored by their mothers. During the first four days of the second month (31st - 34th day), third month (61st - 64th day), and fourth month (91st - 94th day) of life, the babies were monitored with swaddling clothes. During the next four days of the same months (35th to 38th; 65th to 68th, and 95th to 98th day, respectively) the babies were not swaddled for comparisons. In both groups, the sleep and wake periods of the babies were recorded by the mothers in the daytime from 06 a.m. to 18 p.m.

To be eligible for the study the mothers had to be a minimum of 20 years of age, cooperative, had to care for their infants on a full-time basis during the observation period, and had to breast feed their babies without giving them any supplementary food feedings. While the infants could not have colic, could not be the first-born infant in a family, or have insufficient records of sleep periods, the socioeconomic status of the families had to be similar. If an infant-mother pair did not conform with the above criteria, they were excluded from the study at the very outset.

A sleep episode was defined as a period of at least 15-minutes of quiet sleep with closed eyelids, delimited by at least 15-minutes of an awake period. For uniformity, all the mothers were given instructions on how to swaddle their infants above the waist. Before going to sleep, the infants were loosely swaddled with their hands meeting in front of their body. The legs were not wrapped (Fig. 1).

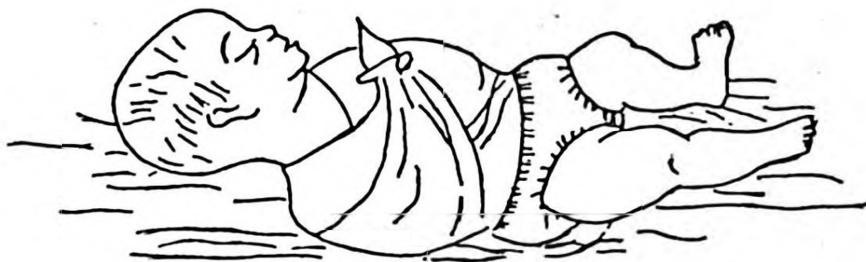


Fig. 1: Swaddling above the waist.

Results

Table I shows the average values of total daytime sleep during observation periods in the second, third and fourth months of life. Statistical analysis revealed significant differences between the average daytime sleep of the swaddled and unswaddled infant groups (P values for the second, third and fourth months are < 0.05 , < 0.01 , and < 0.05 , respectively). Statistically significant differences ($P < 0.05$) were also found between total daytime sleep of the swaddled and unswaddled infant groups.

TABLE I: Comparison of Average Daytime Sleep Periods in Both Groups

N S		S		P Values
SLD	ADS	SLD	ADS	
31-34	7.96	35-38	8.46	$P < 0.05$
61-64	7.70	65-68	9.94	$P < 0.01$
91-94	5.60	95-98	6.29	$P < 0.05$

N S : unswaddled group.

S : swaddled group.

SLD : sleep recording (days of life).

ADS : average daytime sleep (in hours).

Discussion

Complete body swaddling is an inconvenient procedure for the infant, since it may create orthopedic problems such as unstable hip joints, and by preventing the infant's protective movements may result in life-threatening aspiration of vomited material. The face of a swaddled infant is also covered with a piece of cloth, which increases the risk of suffocation. Swaddling is an extremely popular practice in Turkey⁸. It is known that the piece of cloth that is placed over the infant's face while asleep increases the risk of expected infant death, even though there is no available data in this regard.

Sleep disorders are not only problems of infancy but occur in children of all age groups. Although many etiologic factors have been described¹⁻⁷, attempts at finding solutions for these problems have not met with success. In our study, the infants were swaddled above the waist for the first four months of life to provide a quiet, long sleep. We observed that if the infant's arms were loosely wrapped in front of the body, it could help the infant prolong daytime sleep episodes and, therefore, increase the total sleep duration.

Two factors can be mentioned regarding the cause for the increase in the total sleep period. The first is neurological; external stimuli, such as touching or speaking loudly can activate the Moro reflex during the first few months of life. Swaddling probably restrains the extension of the arms and prevents waking of the infant. The second is psychological; the infant's feeling of separation from the mother can be exaggerated with free, unwrapped hands. From this point of view, swaddling may support the infant's feeling of confidence.

Even though we did not evaluate night sleep patterns of swaddled infants, the daytime records convinced us that swaddling above the waist can prolong the total daily sleep of the infant.

REFERENCES

1. Lozoff B, Zuckerman B. Sleep problems in children. *Pediatr Rev* 10:17, 1988.
2. Bernal JF. Night waking in infants during the first 14 months. *Dev Med Child Neurol* 15:760, 1973.
3. Elias MF, Nicolson NA, Bora C, Johnston J. Sleep/wake patterns of breast-fed infants in the first 2 years of life. *Pediatrics* 77:322, 1986.
4. Lozoff B, Wolf AW, Davis NS. Sleep problems seen in pediatric practice. *Pediatrics* 75:477, 1985.
5. Weissbluth M. Sleep duration and infant temperament. *J Pediatr* 99:817, 1982.
6. Carey WB. Night waking and temperament in infancy. *J Pediatr* 84:756, 1974.
7. Blurton Jones N, Rosetti Ferrelra MC, Farquar Brown M, Macdonald L. The association between perinatal factors and later night waking. *Dev Med Child Neurol* 20:427, 1978.
8. Turkish Population and Health Survey. Publication of the Hacettepe University Institute of Population Studies, Ankara, 1983, pp 78, 82, 114.