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A Literature Review of Effects of Swaddling and Safe Swaddling Practices

Erin Eckert & Anna Shumard



What We Learned

Through this literature review, we learned about the importance of parent education on proper swaddling techniques to decrease the risk of SIDs and hip dysplasia. We also learned how swaddling can increase comfort and decrease pain in newborns. This knowledge is important for nurses because nurses are often the first source of information parents have regarding safe sleep practices for their infants.

Background

Improper swaddling techniques have been shown to:

- Increase the risk of SIDs
- Increase Hip Dysplasia

Purpose & Aims

Determine the safest technique of swaddling and the proper age in which to swaddle an infant in order to

- Reduce the incidence of SIDS
- Reduce hip dysplasia
- Increase infant comfort
- Reduce infant pain

Sample

- Child health nurses
- Caregiver of infants
- Infants aged one day to four months

Methods

- Database search- CINAHL Complete
- Research articles only
- Published 2009-2014
- Three nurse authors
- Four medical journals
- Search terms: Swaddling, SIDS, Comfort infants, hip dysplasia

Results

- Swaddling can encourage parents to place infant in supine position (Oden, 2012)
- Swaddling can decrease pain perception (Morrow et al., 2010; Shu et al., 2014)
- Swaddling can increase comfort (Morrow et al., 2010; Shu et al., 2014)
- Swaddling after the infant is able to roll into a prone position (sometimes around three to four months) increases the risk for SIDs (McDonnell and Moon, 2014)
- Swaddling after the age of three to four months decreases the infant's ability to awake from sleep (Richardson et al., 2009)
- Improper swaddling can increase the risk of hip dysplasia due to the immobility of the hip joints (Guner et al, 2013)

Age	Sex	Race/ethnicity	Wrap type	Location	Position
3 d	F	Hispanic	Swaddle wrap	Bassinet	Supine
2 mo	M	White	Wearable blanket	Infant glider seat (unrestrained)	Side
3 mo	F	White	Wearable blanket	Crib	Prone
3 mo	M	White	Swaddle wrap	Car seat on floor	Sitting in seat; rolled out of seat to prone
3 mo	M	White	Unknown	Crib	Side; rolled to prone
4 mo	M	White	Swaddle wrap	Portable crib	Supine; rolled to prone
5 mo	M	White	Swaddle wrap	Crib	Supine; rolled to prone
5 mo	F	White	Swaddle wrap	Crib	Supine; rolled to prone
5.5 mo	F	White	Swaddle wrap	Portable crib	Supine; rolled to prone
6.5 mo	M	White	Swaddle wrap	Portable crib	Supine; rolled to prone

Table showing the incidence of SIDS associated with swaddling, which significantly increases once the infant can roll over (McDonnell and Moon, 2012).

Variables	n = 25 Group C Mean (SD)	n = 25 Group S Mean (SD)
	Pain reactivity before heel stick	
Increasing HR (beat/min)	12.36 (15.90)	16.72 (14.84)
Decreasing SaO ₂ (%)	2.32 (2.19)	2.56 (2.33)
Increasing NIPS	1.24 (1.36)	1.32 (1.49)
Pain reactivity after heel stick		
Increasing HR (beat/min)	21.48 (15.32)	23.04 (21.88)
Decreasing SaO ₂ (%)	3.12 (3.35)	4.64 (5.33)
Increasing NIPS	4.64 (2.02)	3.00 (2.47)
Pain recovery after heel stick		
HR (minutes)	6.76 (3.80)	7.44 (4.87)
SaO ₂ (minutes)	2.12 (2.32)	1.08 (1.53)
Crying (seconds)	113.68 (101.50)	30.20 (31.81)

Table showing recovery of infant after heel stick in control versus swaddled group. In the swaddled group crying time was significantly shorter (Shu et al., 2014).

Discussion

- The findings of the articles suggest that while swaddling is a safe and beneficial technique for encouraging parents to place their babies in a supine position to sleep, once infants reach the age of three to four months swaddling can cause greater risk to the infant. At this age, infants become more difficult to wake when swaddled which increases SIDS risk, and some infants can begin to roll over and possibly suffocate in the blanket
- Swaddling can decrease the infant's pain perception and increase feelings of comfort and security during procedures.

Next Steps

Further Research

- Swaddling with arms in versus arms out
- Assess nursing knowledge of more diverse groups of nurses

Practice implications

- Nurse education to know proper techniques
- Parent education by trained nurses

Limitations

- Studies were performed in small geographic areas
- Studies only interviewed child health nurses

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