

# Infant Sleep Practice and Sleep Environment in Erbil City

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## ABSTRACT:

### BACKGROUND:

Sudden infant death syndrome is a common cause of infant mortality below age of one year, and it is of unknown cause, but simple protective measures in the infant sleep practice and sleep environment can dramatically reduce its occurrence.

### OBJECTIVE:

To study infants sleep environment and sleep practice in Erbil city.

### METHODS:

This was an observational cross sectional study, random sample of 100 mother-infant pairs aged between 1 and 8 months were interviewed face to face using a questioner about infant sleep practice and sleep environment in relation to SIDS risk factors.

### RESULTS:

In this study most Risky infant sleep practice detected were: lateral sleep position 39%,face covering 22%,bed sharing 42%,soft mattress 68%,bottle feeding 40% and smoke exposure 47%,the mothers had little knowledge about SIDS and no recommendations was given to them about safe infant sleep.

### CONCLUSION:

There is a need to increase mothers' awareness about SIDS by public education by the health personnel at the neonatal care units and the primary health centers about SIDS and its risk factors and safe sleep recommendations to decrease its occurrence.

**KEY WORDS:** sleep practice, environment.

## INTRODUCTION:

Sudden infant death syndrome defined as: "the sudden unexpected death of an infant <1 year of age, with onset of the fatal episode apparently occurring during sleep, that remains unexplained after a thorough investigation, including performance of a complete autopsy and review of the circumstances of death and the clinical history".<sup>(1)</sup>

SIDS deaths occur under the age of one year, with the peak incidence occurring when the infant is at 2 to 4 months of age. This is considered a critical period because the infant's ability to rouse from sleep is not yet mature.<sup>(2)</sup>

Globally SIDS resulted in about 22,000 deaths as of 2010, down from 30,000 deaths in 1990.<sup>(3)</sup> Rates vary significantly by population from 0.05 per 1000 in Hong Kong to 6.7 per 1000 in American Indians.<sup>(4)</sup>

Although multiple hypotheses have been

proposed as the pathophysiologic mechanisms responsible for SIDS, none have been proven. And the cause of SIDS is still unknown.

The triple-risk model: proposed by Filiano and Kinney, suggests that SIDS represents an intersection of factors, including the following:

1. A vulnerable infant possessing intrinsic abnormalities in cardiorespiratory control
2. A critical period in the development of homeostatic control mechanisms
3. Exogenous extrinsic stressors (triggering factors)<sup>(5)</sup>

Maternal risk factors include low socioeconomic status, young maternal age, maternal smoking and substance abuse.

Infant risk factors include prematurity, low birth weight, sibling of SIDS victim, twins, and prone sleep position which is the strongest modifiable risk factor for SIDS.

Environmental factors include :soft sleeping surface, loose bedding, bed sharing and overheating.

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## INFANT SLEEP PRACTICE

Protective factors against SIDS include: breast feeding, immunization ,room sharing and use of pacifier<sup>(6)</sup>

Recommendations to reduce the Risk of Sudden Infant Death Syndrome: <sup>(7)</sup>

1- Back to sleep for every sleep, supine position for every sleep up to age of one year, lateral sleep position not safe and not recommended.

2-use of a firm sleeping surface.

3-room sharing but no bed sharing.

4-avoid soft objects and loose beddings.

5-avoid smoke exposure, alcohol use and substance abuse for the mother.

6-breastfeeding,and immunization.

7-use of pacifier at sleep time.

8-avoid overheating.

9-Education of all mothers about safe infant sleep after birth and on every health visit.

This is the first study in Iraq about Infant sleep practice in relation to SIDS.

### OBJECTIVE:

we conduct this research to 1- study the infants sleep environment and sleep practice in Erbil city. 2- to detect the possible risky sleep practice.3- to assess mothers' knowledge about SIDS and Safe infant Sleep practice.

### PATIENTS AND METHODS:

This observational cross sectional study was conducted in Raparen teaching hospital in Erbil

city / Kurdistan region/Iraq. On the period of six months between April and September 2016. A questioner about infant sleep practice and sleep environment and possible SIDS risk factors was designed based on the literature. And a random sample of (100) mother –infant pairs (Age between 1-8months) was interviewed after verbal consents were taken and the questioner were completed through face-to-face interviews. Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 19).

### RESULTS:

One hundred mothers had been interviewed. Their mean age ( $\pm$  SD) was  $26.39 \pm 5$  years, ranging from 16 to 42 years. The median was 26 years. and more than one third (36%) were either illiterate or just read and write.

The Infants age was ranging from 1 to 8 months. The median was 5 months, 61% of the infants were males. The majority (70%) was residing in urban areas, and only 15% were of good socio-economic level.

40% of infants were on bottle feeding, while 31% were on breast feeding and 28% were on mixed feeding. Around half (47%) were exposed to negative smoking, and 61% use a pacifier during sleep.

**Table 1:Infant Sleeping Position** The table shows that the supine position is the preferred position for sleeping where it is evident that 54% of infants sleep in supine position only, 37% sleep in supine or lateral positions, and 3% sleep in supine or prone positions.

Variables	Categories	No.	%
Sleeping position	Supine	54	54.0
	Prone	4	4.0
	Lateral	2	2.0
	Supine and lateral	37	37.0
	Supine and prone	3	3.0
Total		100	100.0

## INFANT SLEEP PRACTICE

**Table 2: Infants Sleep Environment :More than half (60%) of infants have a traditional crib, and 10% share the parents' bed (don't have personal bed), The majority (78%) of mothers don't cover their infants' face during sleep, 58% never share the bed with parents, 68% use a soft mattress, and almost all of them (95%) put a pillow under the infant's head. The majority (89%) cover their infants with a cover or blanket while sleeping, and 65% swaddle their babies.**

Variables	Categories	No.	%
Bed type (owned by the family)	Traditional crib	60	60.0
	Baby crib	18	18.0
	Baby cot	7	7.0
	Others-ground	5	5.0
	Shared with parents	10	10.0
Face covering	No	78	78.0
	Yes	22	22.0
Sharing beds with parents	Never	58	58.0
	Sometimes	31	31.0
	Always	11	11.0
Mattress type	Soft	68	68.0
	Firm	32	32.0
Pillow	No	5	5.0
	Yes	95	95.0
Blanket and covers	No	11	11.0
	Yes	89	89.0
Swaddling	No	35	35.0
	Yes	65	65.0
Total		100	100.0

Mothers knowledge about SIDS: in this study we find that only 14% of mothers had heard or know about the sudden infant death syndrome. And

only one woman had received recommendation about the Safe infant sleep and the SIDS after delivery.

**Table 3: Association between knowledge of sudden infant death syndrome with mother's age, education, residency, and socio-economic status. There was no significant association between knowledge about sudden infant death syndrome with mother's age ( $p = 0.457$ ), mother's education ( $p = 0.348$ ), residency ( $p = 0.544$ ) and socio-economic status ( $p = 0.733$ ).**

		Don't know		Know		Total		p
		No.	%	No.	%	No.	%	
Mother age	< 25	32	86.5	5	13.5	37	100.0	0.457
	25-34	46	83.6	9	16.4	55	100.0	
	≥ 35	8	100.0	0	0.0	8	100.0	
Mother's Education	Illiterate†	31	86.1	5	13.9	36	100.0	0.348*
	Primary	22	95.7	1	4.3	23	100.0	
	Intermediate	3	75.0	1	25.0	4	100.0	
	Secondary	21	84.0	4	16.0	25	100.0	
	College and higher	9	75.0	3	25.0	12	100.0	
Residency	Urban	59	84.3	11	15.7	70	100.0	0.544*
	Rural	27	90.0	3	10.0	30	100.0	
SES	Poor	28	90.3	3	9.7	31	100.0	0.733*
	Medium	45	83.3	9	16.7	54	100.0	
	Good	13	86.7	2	13.3	15	100.0	
Total		86	86.0	14	14.0	100	100.0	

†Including read and write.

\*By Fisher's exact test.

**Table 4: Association between sleeping position with mother’s age, education, residency, and socio-economic status.**  
**significant association between mothers’ age with sleeping position, where 69.1% of mothers aged 25-34 years put their children in supine position during sleep, but the pattern was not consistent throughout the age groups (p = 0.003). No significant association was detected between sleeping position with mother’s education (p = 0.818), residency (p = 0.726), and socio-economic status (p = 0.219).**

		Supine		Others		Total		p
		No.	%	No.	%	No.	%	
Mother age	< 25	13	35.1	24	64.9	37	100.0	0.003*
	25-34	38	69.1	17	30.9	55	100.0	
	≥ 35	3	37.5	5	62.5	8	100.0	
Mother’s Education	Illiterate†	20	55.6	16	44.4	36	100.0	0.818
	Primary	12	52.2	11	47.8	23	100.0	
	Intermediate	3	75.0	1	25.0	4	100.0	
	Secondary	14	56.0	11	44.0	25	100.0	
	College and higher	5	41.7	7	64.9	12	100.0	
Residency	Urban	37	52.9	33	47.1	70	100.0	0.726
	Rural	17	56.7	13	43.3	30	100.0	
SES	Poor	18	58.1	13	41.9	31	100.0	0.219
	Medium	31	57.4	23	42.6	54	100.0	
	Good	5	33.3	10	66.7	15	100.0	
Total		54	54.0	46	46.0	100	100.0	

†Including read and writes.

\*By Fisher’s exact test.

**DISCUSSION:**

About infant sleeping position 54% of parents prefer supine position only, supine and lateral 39% and prone position 7%, which was close when compared to 52% supine, 37%lateral and 13% prone in an international study <sup>(10)</sup>. and 39%supine, 47%lateral and 14%prone in a study done in Iran <sup>(8)</sup>, and 96% supine position in turkey <sup>(9)</sup>, and 56%supine and 17%prone in the USA <sup>(10)</sup>. The good news is that mothers in our locality don’t prefer and don’t put their infants in the prone position during sleep, even without knowing about its association with SIDS, although some prefer the lateral position. No significant association found in this study between mothers education, residency and socioeconomic status and choosing the supine sleep position, but significant association found between mother age( 25-34years) and preferring the supine sleep position for their infants(P=.003). About bed sharing 42% of infant share bed with parents sometimes and 10%always sharing bed with parents ,bed sharing and co-sleeping range

from 2-88% in an international study <sup>(12)</sup>and 93% in Iran<sup>(8)</sup> and 11%in the USA<sup>(11)</sup>. About infant bedding 60% uses traditional crib, 18% use baby crib or bed, 7% use portable baby cot, 5%sleep on the ground. The majority still uses traditional crib; there are no studies about the safety of the traditional crib in relation to SIDS or other related sleep incidents. This compared to 70%using baby crib or bed and 10%using baby cot in the USA <sup>(11)</sup>. Regarding use of infants pillows 95% of parents use pillows for their infants, compared to (4%-95%) in international study <sup>(12)</sup>, and 99% in Iran <sup>(8)</sup> Regarding use of blankets and heavy covers 89% use blankets and heavy covers for infants. This is compared to 70% in the USA <sup>(13)</sup>. About face covering 22% of parents cover their infant face during sleep, compared to 11.7% in Iran <sup>(8)</sup>and 44%in turkey<sup>(9)</sup>. Regarding swaddling 65% mothers uses traditional swaddling for their infants compared to 93% in turkey <sup>(14)</sup> and 19%in the UK <sup>(15)</sup>.

In this study majority of mothers had no knowledge about SIDS (14%) heard or know about SIDS which is very low compared to other countries ,this compared to 44% in a study in Jordan<sup>(17)</sup> , 96%in Australian study<sup>(18)</sup> and 15.8% in other study in brazil<sup>(16)</sup>. No significant difference was found for mother's age, education, residency and socioeconomic status in relation for knowledge about SIDS.

And we also find out that no recommendation was given to the mothers about safe infant sleep and infant sleeping position and reduction risk of SIDS, no education were available to the mothers not from the doctors and medical staff nor from the media,(only 1% receive recommendation which was given to the mother outside our country), compared to 86% of parents receiving recommendations about safe infant sleep in the USA<sup>(11)</sup> and 7% in Jordan<sup>(17)</sup>.

### CONCLUSION:

There is little knowledge about sudden infant death syndrome among mothers in our locality. And there were no recommendations or education about safe infant sleep given to the mothers in our locality. Most common risky practice for SIDS detected were :lateral sleeping position, bottle feeding ,smoke exposure , bed sharing, soft mattress, and face covering.

And most mothers still use traditional crib and swaddling for their infants.

### Recommendation:

Further studies by the health officials needed about SIDS incidence in our country and possible risk factors. And Education of the medical staff in the neonatal care units and the primary health care centers about latest recommendations about safe infantsleep. Every mother should receive safe sleep recommendations from the doctors and the medical staff starting from the neonatal care unit and on every health visit in the infant first year .and the Important safe sleep recommendations can be printed as a leaflet in the local language to be distributed in the hospitals and primary health care centers.

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