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Original Research Article

A Study to assess safe infant sleep practice among mothers of infants in rural areas of North Karnataka: A cross-sectional study

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Abstract

Background: The predominant causes of infant mortality globally include congenital anomalies, preterm, low birth weight, problems during maternal gestation, sudden infant death syndrome (SIDS), and fatal traumas. Despite the decrease in occurrence during the previous twenty years, SIDS remains the leading cause of infant mortality in the post-neonatal period between one month to one year, with the peak incidence being between two to four months of age. Safe infant sleep practices are useful in preventing SIDS.
Aim and Objective: To estimate the percentage of proper, safe infant sleep practices among mothers residing in rural areas of Belagavi. North Karnataka.
Materials and Methods: A cross-sectional study was conducted in rural areas of Kinaye and Vantamuri PHC'S of Belagavi Taluk. A semi-structured questionnaire and observation checklist were used for data collection. A total of 385 mothers participated in the study.
Results: Infant safe sleep practice among mothers in rural area shows 67.5% had average safe sleep practice, whereas 21.0% & 11.4% of mothers had good and poor safe sleep practice among infants, respectively.
Conclusion: Mothers' safe infant sleep practices were found to be low in rural areas of Belagavi. Therefore, efforts should be made to enhance mothers' attentiveness and engagement. This will help them follow healthy infant sleep practices.

Keywords: Safe infant sleep practices, Maternal practices, PHC, Sudden Infant Death Syndrome

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1. Introduction

Sleep-related deaths are one of the leading causes of death for infants between 1 month and 1 year of age. These deaths used to be called Sudden Infant Death Syndrome (SIDS). Now they are called Sudden Unexplained Infant Deaths (SUIDs).[1] Following the AAP's and other organisations' recommendation that infants sleep on their backs, the rate of infant deaths due to sleep decreased dramatically in the 1990s, but it has since levelled off. In the United States, sleep-related causes are responsible for about 3500 newborn deaths annually. Sudden Infant Death Syndrome (SIDS) accounts for about 38.4 deaths per 100,000 live births (approximately 1,389 deaths) as per records of the year 2020. In the majority of the countries, there was a rapid surge in the cases of SIDS in the early 1980s followed by a decline in the 1990s.[1]

SIDS continues to be the greatest cause of post-neonatal mortality, and these include accidental bed suffocation and strangling. Infant mortality rates for Black and Native American/Alaska Native babies are more than twice as high as those for white babies. Therefore, at every visit during the first year of the infant's life, health care providers should assess for and recommend healthy sleep practices.[2-3]

The most significant risk factors for infants under four months old are bed-sharing, soft bedding (like blankets and pillows), unsafe sleep surfaces (like sofas), maternal smoking, prematurity, and the baby's sleeping position (prone and side), according to recognised epidemiological studies.[3-6] It is always best to put infants to sleep completely on their backs. Babies should share a room with their parents so they can sleep on a hard, flat surface (but not a bed), as advised by the updated American Academy of Paediatrics guideline. All newborn sleep-related deaths can be reduced with a safe sleeping environment. Experts recommend remaining warm,

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sharing a room but not a bed, avoiding soft bedding, supine positioning, and utilising a firm sleep surface.[7-8]

Mothers are vital in performing safe infant sleep recommendations for their infants. Hence, this study was conducted to estimate the percentage of proper, safe infant sleep practices among mothers residing in rural areas.

2. Materials and Methods

This descriptive, institution based cross-sectional study was carried out in PHC'S of vantamuri and kinaye of Belagavi, North Karnataka. The study was approved by the Institutional Review Board at KLE Institute of Nursing Sciences. The was collected from 2nd November 2025 to 16th December 2025. The study was performed by an anonymous, self-administered questionnaire and observational checklist that was collected in PHC'S. A total tool was administered to 385 mothers of infant's regarding safe sleep practices by convenient sampling method. A pilot study was performed for validation before the initiation of the study. The questionnaire is divided into three parts. The first part includes items for collecting demographic data of the parents and the child, the second part included the knowledge questionnaire and last part included observations of the child's sleep practices.the data were analysed in SPSS.

3. Results

The present study was designed to investigate the association between the safe sleep practices among mothers of infants and demographic variables, collected data was coded, organized and interpreted using descriptive statistics.

Table 1 reveals The participants' sociodemographic profile shows a wide range of representation in important factors. Mothers between the ages of 31 and 35 made up the majority (49.9%), followed by those between the ages of 26 and 30 (31.4%). In terms of education (47%) had finished pre-university education (PUC). The majority of families (52.7%) were joint families. The most common religion was Hinduism (47%), followed by Islam (42.6%) and Christianity (7.8%). According to the income distribution, half (50.9%) of the households made between ₹10,000 and ₹15,000 per month, The majority of fathers (46.5%) were employed in farming or related occupations. The majority of mothers (76.9%) worked as housewives or in other non-professional capacities. n=38.

Table 1: Distribution of participants by socio demographic characteristics n=385

Socio-demographic variable		**N**	**%**
Mother Age	21-25	5	1.3
	26-30	121	31.4
	31-35	192	49.9
	>36	67	17.4
Mother Education	Primary	6	1.6
	High school	69	17.9
	PUC	181	47.0
	Graduate	102	26.5
	Post Graduate	27	7.0
Father Education	Primary	3	.8
	High School	34	8.8
	PUC	172	44.7
	Graduate	116	30.1
	Post Graduate	60	15.6
Types of Family	Nuclear	151	39.2
	Joint	203	52.7
	Extended Family	31	8.1
Religion	Hindu	181	47.0
	Muslim	164	42.6
	Christian	30	7.8
	Others specify	10	2.6
Income	5000-10000	143	37.1
	10000-15000	196	50.9
	15000-20000	46	11.9
	>20000	0	0.0
Father Occupation	Government service	45	11.7
	Private	161	41.8
	Farmer/Others	179	46.5
Mother Occupation	Private	48	12.5
	Government service	41	10.6
	House wife/others	296	76.9

Table 2: Child related characteristics

Child's related variable		N	%
Age	0-4 months	54	14.0
	4-8 months	194	50.4
	8-12 months	137	35.6
Gender	Male	191	49.6
	Female	194	50.4
First child	2nd or 3rd child	209	54.3
	Yes	171	44.4
	No	5	1.3
Preterm	No	359	93.2
	Yes	4	1.0
	Don't know	22	5.7
GERD	No	367	95.3
	Yes	2	.5
	I don't Know	16	4.2
Number of child	One	174	45.2
	Two	202	52.5
	Three & more	9	2.3
Exposure to Information by mothers	No	350	90.9
	Yes	35	9.1
Where	No	350	90.9
	My child's physician	4	1.0
	Friends or relatives (Non-health professional)	1	.3
	Friends & relatives (Health professional)	15	3.9
	Written information	1	.3
	Social media content and website	14	3.6
	Other	0	0.0

Table 2 shows that majority of children (50.4%) were between the ages of 4 – 8 months, followed by those between the ages of 8 to 12 months (35.6%) and 0 to 4 years old (14%). With 50.4% of the population being female and 49.6% being male, the gender distribution was almost equal. Of the children born, 44.4% were the firstborn. In terms of birth features, the majority of children (93.2%) were not preterm. 95.3% of parents reported no history of gastroesophageal reflux disease (GERD), 0.5% had a positive history, and 4.2% were unsure. while the majority of homes had two children (52.5%). 9.1% of parents reported being exposed to Knowledge of safe infant practice in social media and websites (3.6%) or friends and family who worked in the medical field (3.9%). Ninety-nine percent of respondents said they had never been exposed to such information.

Figure 1 shows Different infant care practices among parents are highlighted by the practice-related variables. Just 5.2% of parents did not use a sleeping sack for their new born, compared to the majority (94.8%) who did. 58.4% utilized a cot buffer, and a sizable percentage (76.1%) put a pillow inside the infant's crib. Eighty percent of parents chose to use a soft mattress, while forty-seven percent used a plastic mattress cover.

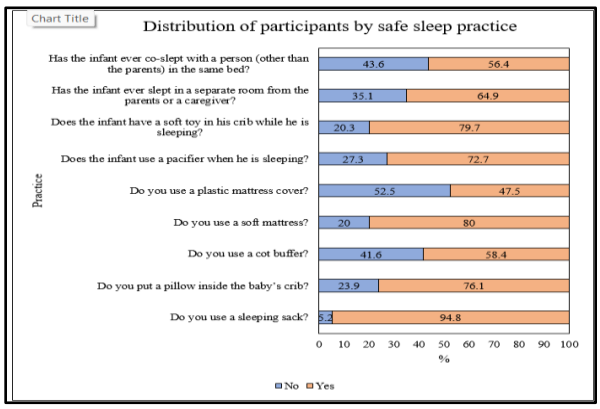

Figure 1: Proportion of practice of Infant safe sleep practices among the mothers.

79.7% of infants had a soft toy in their crib while they slept, and 72.7% of infants used a pacifier while they slept.

Furthermore, 56.4% of parents reported that their new born had co-slept in the same bed with someone other than their parents, and 64.9% of parents reported that their infant had at some point slept in a different room from the parents or caregiver. These results show a variety of sleeping habits, some of which may affect the comfort and safety of new-borns.

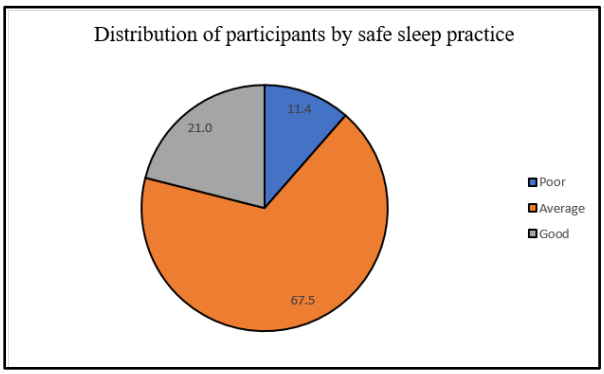

Figure 2: Distribution of participants by Infant safe sleep practices

This graph depicts the infant safe sleep practice among mothers in rural area shows 67.5% had average safe sleep practice, whereas 21.0% & 11.4% mothers had good and poor safe sleep practice among infants respectively.

4. Discussion

In the present study the occupation of mothers was 76.9% house wives and non-professional practice. A supportive study conducted in Riyadh also saw similar results.[9] 49.9% (Majority) of mothers belonged to the age group of 31-35 yrs. 47.7% of mothers had done PU. Similar results from the Mohamed EWA, Abusaad FE, et al. show that more than half of mothers had a secondary education.[9] Major findings of the present study shows that 94.8% used a sleeping sack for the newborn,76.1% put pillow in infants' crib,58.4% made use of cot buffer, 80% made use of soft mattress, 52.5% didn't use plastic cover mattress,72.7% infants used pacifier while sleeping, 79.7% have a soft toy in crib when sleeping, 64.9% slept in separate room and 56.4% infants co-slept with other persons in same bed. In a similar study conducted in Saudi Arabia depicted results with similar findings where, 65.7% used pillow in baby's crib,78% utilised a cot buffer, 91.5% used a soft mattress, 63.3% made use of soft toy when baby is sleeping Contradicting results were seen in the major findings of the present study in following practices, where 82% did not use a sleeping sack, 64% used plastic cover mattress, 69.4% didn't use a pacifier,77.8% infants didn't sleep separate from the parent or caregiver and 81.4% infants didn't co-sleep with any other person.[10-11] In the present study the infant safe sleep practice among mothers in rural area shows 67.5% had average safe sleep practice, whereas 21.0% & 11.4% mothers had good and poor safe sleep practice among infants, respectively. The similar findings from the studies shown that Only 39% of mothers were aware of SIDS.[12] Forty-six percent of the mothers preferred a supine sleeping position for their infant and 16% of the parents were bed-sharing with their infants.[13] Seventy-three percent of health professionals selected the side, 17% supine and 10% prone sleeping position as the safest sleeping position.[14]

5. Conclusion

Mothers' safe infant sleep practices were found to be low in rural areas of Belagavi. Therefore, efforts should be made to enhance mothers' attentiveness and engagement. This will help them follow healthy infant sleep practices.

6. Source of Funding

None.

7. Conflict of Interest

None.

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