Original Research Article

Harmful child rearing practices in a South Indian population: A cross sectional study

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Abstract

Aim and Objective: To assess the prevalence of harmful child rearing practices and its associated risk factors among mothers/grandmothers of children aged less than or equal to 2 years, visiting our hospital. **Materials and Methods:** This was a questionnaire based cross sectional study, done in a tertiary care teaching hospital in Chitradurga district, Karnataka, between Dec 2018 and Mar 2019. Mothers or grandmothers of children less than 2 years, visiting the hospital, were interviewed with a semi-structured questionnaire, after obtaining informed consent. Questions concerned potentially harmful practices related to breastfeeding and child care. Main outcomes measured included prevalence of the harmful child rearing practices and their association with age, education, religion, place of residence and parity of mother. Prevalence of practices among grandmothers was also assessed. **Results:** Among the participants, 13.3% practiced unhygienic cord care, 14.6% discarded colustrum, 67.3% gave prelacteal feeds, 51% instilled oil into nose, 49% practiced nose blowing, 54.7% applied lobana fumes, 40.3% used branding during illnesses, 39.3% applied kajal to eyes, 48.7% expressed "witch's milk" by squeezing newborn breasts and 59% used cloth cradle. These practices were significantly higher among mothers with lower educational status and grandmothers. **Conclusions:** Harmful child rearing practices are still widely prevalent in our community even among educated families. This could be due to influence of other family members, especially grandmothers, as found in this study. Reduction in these practices can be achieved by family centered education programs.

Key Words: Breastfeeding; branding; Kajal application; Nose blowing; Oil instillation into nose; Umbilical cord care.

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INTRODUCTION

Traditional practices are time honored rituals and beliefs which are prevalent in the community and may pertain to a wide range of activities. While many practices are based on core knowledge and wisdom of our ancestors, some have emerged purely from intuition, superstitions and unfounded beliefs. While some practices are innocuous, others pose a serious threat to child health.[1] Application of unhygienic substances to the umbilical cord like ash, clay, talcum, oil, ghee etc is still widely practiced in India.[2-5] It has been related to neonatal tetanus.[6] Discarding colustrum and giving prelacteals like sugar water, ghee, honey, castor oil and animals milk is still prevalent in India.[2,7] It can predispose to infections.[8] Oil instillation into nose/mouth during an oil bath can cause lipoid pneumonia.[9] Sambrani smoke exposure predisposes to allergies and asthma.[10] Kajal application can cause conjunctivitis and lead poisoning.[11] Branding during childhood illnesses is a brutal practice still prevalent in India[12] and can cause sepsis and death.[13,14] Squeezing breasts of newborns with physiological hypertrophy to express witch's milk can cause prolonged milk secretion and infection.[15] Cloth cradle use can cause accidental strangulation.[16,17] Even though, the last two decades have

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seen a significant drop in childhood mortality in India, the U5MR of 39 and NMR of 24 (as of 2017)[18] is a far cry from the Sustainable development goals 3 (SDG3) of NMR < 12 and U5MR < 25 by 2030. The National family healthy survey -4 (NFHS-4) 2015-16 has shown that knowledge and practice are associated with literacy.[19] Family members, especially grandmothers, play an important role in childcare and therefore should be included in interventions to improve child survival, health and nutrition status. [20] There is paucity of data regarding the prevalence of harmful child rearing practices in the central region of Karnataka. With this background, the present study was conducted with the aim of assessing the prevalence of harmful child rearing practices and its associated risk factors in a hospital based sample of mothers and grandmothers of children less than or equal to 2 years age.

MATERIALS AND METHODS

This hospital based cross sectional study was done in the department of Paediatrics, Basaveshwara Medical College Hospital and Research Center, Chitradurga, Karnataka. Institutional Ethics Committee clearance was taken before the commencement of the study. The study was conducted from December 2018 to March 2019 (3months). The participants consisted of mothers or grandmothers of children aged 1 day to 2 years, either delivered in the hospital or admitted to hospital for an inter-current illness. Informed consent was obtained from the participants after explaining the purpose of the study in their own language and those who gave informed consent were included in the study. The data was collected by interview method using a semi structured questionnaire containing information regarding socio demographic profile and child rearing practices. The data collected was compiled in MS Excel and analyzed using SPSS.V.16.0. Continuous variables are expressed in the mean and SD, categorical data is expressed in number and percentage. Chi square test is applied to test the significance of association and associations with p value less than 0.05 were considered as statistically significant.

RESULTS

A total of 300 people were included in the study, consisting of 218 mothers (72.7%) and 82 grandmothers (27.3%). The mean age of the mothers was 25±3.8 years and that of grandmothers was 50.1 ± 9.2 years. Among mothers, 47% were primiparous and the remaining 53% were multiparous. 222(74%) participants were from rural area and 78(26%) from urban area. About 80% of participants were literates while 20% were illiterates. Among the participants, 44(14.7%) had primary education, 85(28.3%) had secondary education, 69(23%) had completed pre-university education and 42(14%) held a degree. Majority were Hindus (91.7%) and the rest muslims (8.3%). Among the babies, 169 (56.3%) were males and 131 (43.7%) females. The mean age of babies was 5.8 ± 4.87 months. [Table 1]

Table 1: Socio-Demographic characteristics

	Frequency (N=300)	Percent (%)
Informant		
Mother	218	72.7
Grandmother	82	27.3
Place		
Rural	222	74
Urban	78	26
Education		
Illiterate	60	20
Primary	44	14.7
Secondary	85	28.3
PUC	69	23
degree and/or double degree	42	14
Religion		
Hindu	275	91.7
Muslim	25	8.3
Sex of the baby		
Male	169	56.3
Female	131	43.7
parity		
1	141	47
2	117	39
>2	42	14
Total	**300**	**100**

Cord care practices: among participants, 40 (13.3%) felt that cowdung/ash (7%) or kumkum/turmeric (10.7%) should be applied to the cord after birth. However, 220 (73.3%) felt that nothing should be applied to the cord. This practice was more prevalent among grandmothers (22%) compared to mothers (10.1%).

Breastfeeding practices: Exclusive breastfeeding was not practiced by 263 (87.7%). Colustrum was discarded by 44 (14.6%) participants while 202 (67.3%) preferred to give prelacteal feeds. Prelacteal feeds commonly used included honey/ghee (56%), donkey's milk (30.3%) and cow's urine (20.3%). SuttuKhara/Bhaje, a traditional ayurvedic preparation given regularly in infancy to boost immunity, was administered by 49%. Gripe water, as a treatment for infantile colic, was used by 52.7%. Practices hindering exclusive breastfeeding were practiced by more grandmothers (97.6%) than mothers (83.7%). Among mothers, risk was more among illiterates (100%) compared to PUC/graduates (77.8%). Gripe water usage was more among urban (76.9%) compared to rural (46.1%) population.

Practices predisposing to respiratory illnesses: Oil instillation into nose and ears was done by 153 (51%). Blowing air into ear, nose and mouth during bath was done by 147(49%). Lobana fumes were administered after bath by 164 (54.7%). Prevalence of these practices was higher among grandmothers (90.2%) compared to mothers (67.9%) and higher among rural (77.5%) compared to urban (64.1%) population.

Other harmful practices: Branding was practiced as first line remedy for common illnesses by 121 (40.3%). Methods used included hot bangles (31%) and hot betel leaf kept on stomach and chest (27.3%). Prevalence of this practice was higher among rural informants (rural - 44.1% vs urban - 29.5%), mothers with lesser education (primary school - 63% vs PUC/Degree - 30.6%) and Islam religion (Islam – 65% vs Hindu – 34.3%). Among the informants, 48.7% practiced squeezing the breast of infants, to express 'witch's milk'. This practice was more prevalent among Muslims (75%) compared to Hindus (47%). Kajal was applied to eyes by 118 (39.3%) participants. Cloth cradles were used to put babies to sleep by 59% of informants. No significant risk factors were associated with these practices. Innocuous practices included oil massage prior to bath by 208 (69.3%) and breastmilk instillation into eyes during eye infections by 179 (59.7%) participants.

Table 2: prevalence of harmful child rearing practices

Groups of practices	S no	Individual practices	risk	Prevalence (n=300)	%	Groupwise prevalence
Application of unhygienic substances to umbilical cord	1	Apply ash/cowdung	Sepsis / tetanus	21	7	40 (13.3%)
	2	Apply turmeric/kumkum		32	10.7	
Practices hindering exclusive breastfeeding	3	Discard colustrum	Deprives baby of benefits of exclusive breastfeeding, predisposes to infections, malnutrition.	132	44	263 (87.7%)
	4	Prelacteals – honey/ghee		168	56	
	5	Prelacteals – donkey milk		91	30.3	
	6	Prelacteals – cow's urine		61	20.3	
	7	Other feeds – gripe water		158	52.7	
	8	Other feeds – suttukhara/bhaje		147	49	
Practices predisposing to respiratory infections and allergies	9	Instill oil into ear/nose	Lipoid pneumonia	153	51	222 (74%)
	10	Blow air into ear/nose	Aspiration pneumonia	147	49	
	11	Expose to sambrani smoke	Asthma/allergies	164	54.7	
Other practices	12	Kajal to eyes	Infection/ lead poisoning	118	39.3	
	14	Cloth cradle	Strangulation	177	59	
	15	Express witch's milk	Breast infection	146	48.7	
	16	Branding	Infection	121	40.3	
	17	Oil massage	innocuous	208	69.3	
	18	Breastmilk to eyes	Innocuous	179	59.7	

Table 3: Comparison of harmful child rearing practices among mothers and grandmothers

S no	Practices	Mother n=218	Grandmothern=82	P value
1	Application of unhygienic substances to umbilical cord	22 (10.1%)	18 (22%)	0.007
2	Practices hindering exclusive breastfeeding	183 (83.9%)	80 (97.6%)	0.001
3	Administering prelacteal feeds	124 (56.9%)	78 (95.1%)	0.001
4	Discarding colustrum	57 (26.1%)	75 (91.5%)	0.000
5	Practices predisposing to respiratory infections and allergies	148 (67.9%)	74 (90.2%)	0.001
6	Branding	81 (37.2%)	40 (48.8%)	0.067
7	Cloth cradle use	121 (55.5%)	56 (68.3%)	0.045

Table 4: harmful child rearing practices and their relation to educational status of mother

S no	Practices	Maternal Education				
		Illiterate n=9	Primary n=27	Secondary n=74	Puc/degree n=108	P value
1	Application of unhygienic substances to umbilical cord	1(11.1%)	3(11.1%)	10(13.5%)	8(7.4%)	0.603
2	Practices hindering exclusive breastfeeding	9(100%)	26(96.3%)	64(86.5%)	84(77.8%)	0.042
3	Administering prelacteal feeds	8(88.9%)	25(92.6%)	53(71.6%)	38(35.2%)	0.000
4	Discarding colustrum	0(0%)	4(14.8%)	32(43.2%)	21(19.4%)	0.001
5	Practices predisposing to respiratory infections and allergies	7(77.8%)	23(85.2%)	53(71.6%)	65(60.2%)	0.057
6	Branding	3(33.3%)	17(63%)	28(37.8%)	33(30.6%)	0.020
7	Cloth cradle use	6(66.7%)	16(59.3%)	50(67.6%)	49(45.4%)	0.024

Table 5:harmful child rearing practices and their relation to place of residence and religion

S No	Practices	Rural(n=222)	Urban(n=78)	Pvalue
1	Practices predisposing to respiratory illnesses	172 (77.5%)	50 (64.1%)	0.021
2	Branding	98 (44.1%)	23 (29.5%)	0.023
3	Gripe water for colic	98 (44.1%)	60 (76.9%)	0.000
S no	**Practice**	**Hindu (n=198)**	**Muslim (n=20)**	**P value**
1	Branding	68 (34.3%)	13 (65%)	0.007
2	Express "witches milk"	93 (47%)	15 (75%)	0.017

DISCUSSION

The present study aimed at assessing prevalence of harmful child rearing and infant feeding practices among the caregivers in our study area. Application of unhygienic substances to the umbilical cord is still practiced all over the world and has been related to tetanus in infants.[6] In our study 13.3% of caregivers reported applying unhygienic substances to the cord. Other studies in India have reported rates of 30% (Keserton *et al*),[2] 33% (Madhu *et al*)[4] and 51% (Nithinkumar *et al*).[7] In our study, 7% applied cow dung/ash and 10.7% applied kumkum and turmeric. The preferred substances in other studies included turmeric, burning tip with castor oil lamp, antiseptic ointment,[2] ash or clay,[3] talcum powder,[4] antibiotic powder, oil/ghee.[5] Peculiarly, published literature from India does not mention practice of cow dung application.[6] However, our study showed that cow dung application is still prevalent in rural areas. Considering that India is said to have achieved maternal and neonatal tetanus elimination in May 2015,[21] this finding is alarming. WHO recommends that infants should be exclusively breastfed for the first 6m of life.[22] As per NFHS-4, 55% of Indian infants were exclusively breastfed.[19] Other studies showed exclusive breastfeeding rates of 40% (Madhu.K *et al*, 2006),[4] 40% (ReemaVerma *et al*, 2006),[23] 76.6% (Dinesh Bhandari *et al*, 2011),[24] 50.7% (Varshney Amit *et al*, 2012)[25] and 57.9% (Nithinkumar*et al*).[7] However, our study found exclusive breastfeed rate of just 12.3%. Colostrum boosts immunity in a newborn. Discarding colostrum and giving prelacteal feeds paves way for infections.[8] In our study 44% felt colostrum should be discarded. This is quite high compared to other studies which reported colustrum discard rate of 19% (Madhu *et al*, 2009[4] and Vyas Shaili, 2011[26]), 12% (Dinesh Bhanderi *et al*, 2011[24]). However, older studies showed a high colustrum discard rate of 65% (Reema Verma, 2006[23]) and 58% (D.G.Benakappa, 2007[27]). Prelacteal feeds given in India include warm water, sugar water, ghee and honey.[7] Castor oil and diluted animal milk are also administered.[2] In our study prelacteal feeds were given in 67.3% cases, as opposed to other Indian studies, which showed 61.8% (Vyas Shaili, 2011[26]) and 22% (Madhu, 2009[4]). The preferred pre-lacteals in our study were honey, ghee, donkeys milk and cow's urine. Oil massage before bath is commonly practiced in India**.** In our study 69% mothers accepted doing oil massage. Nithin kumar[7] reported oil massage rate of 98.7%, reasons being to strengthen the limbs, to avoid dry skin or just on suggestion of elders. However, harmful practices like oil instillation into nose and ears (51%), blowing air into nose, mouth and ears (49%) and administration of sambrani smoke to babies after bath (54.7%) were found to be widely practiced during and after bath, in our study. Oil instillation is known to predispose to lipoid pneumonia.[9] Sambrani smoke predisposes to lead poisoning and asthma.[10] However, the exact prevalence of these practices is not quoted in literature. Kajal application to eyes of babies is widely practiced by Indian mothers with intention being to increase the size of the eyes, improve eyesight and protect against diseases.[28] Reported prevalence is 86% (Anup Mohta *et al*[28]) and 91% (Nitin kumar *et al*[7]). In our study, 118 (39.3%) practiced kajal application. Kajal predisposes to ocular infections and lead poisoning.[11]

Breastmilk instillation into eyes is a traditional remedy for conjunctivitis in newborns and was practiced by 59% of caretakers in our study. In the study by Pragna VN, 45.2% mothers instilled breastmilk into eyes.[29] This is an innocuous practice.

Other harmful practices: Branding, a brutal custom, is still practiced in India. Prevalence reported in literature is 7.9% (Mohapatra SS *et al*[14]) and 16% (Madhu *et al*[4]). Mehta *et al* noticed branding in 371 newborns over a study period of 10 years.[13] In our study, 33.67% participants considered branding as first line remedy to common illnesses like fever and cough. The methods employed included hot bangles and application of hot betel leaves on chest and abdomen. Newborns have physiological breast hypertrophy due to maternal hormones. Squeezing the breast predisposes to prolonged milk secretion and introduces infection.[15] In our study, 48% participants felt that the breast milk of the baby should be expressed. Use of cloth cradle is another widely prevalent, potentially lethal practice, in India. Ackerman J has reported 5 cases of death due to accidental strangulation in a cloth cradle.[16] Abhijeet Saha reported a similar case of strangulation of a 11 month old baby.[17] In our study 177 (59%) preferred to put baby in a cloth cradle. In our study, prevalence of harmful child rearing practices was significantly higher among grandmothers compared to mothers. Prevalence decreased with improving educational status of mothers. However, it is distressing to note that a high percentage of well educated mothers still follow many of these practices (table 4). Some practices like branding, nose blowing and oil instillation into nose and mouth was common in rural areas. Gripe water usage was more in urban areas. Persistence of most of the customs among well educated mothers (table 4) could be due to influence of elders in family, especially grandmothers. Kesterton AJ *et al*[2] and Cacodcar J *et al*[30] also found similar results and attributed it to existing traditions, rituals and the decision making powers being with the grandmothers and elders and little autonomy over newborn care among mothers.

CONCLUSION

Harmful child rearing practices are still widely prevalent in our community. It is worrisome to notice high prevalence of these practices among educated mothers. The possible reason could be the compelling influence of other family members, especially grandmothers. Therefore, a reduction in these practices can be achieved by an inclusive family centered education program during antenatal and postnatal periods.

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