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# Parents Knowledge about Guidelines on Safe Sleep and SIDS Prevention: A Population-Based Study

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**Keywords:** Sudden Infant Death Syndrome; Sleep position; Prevention; Health education.

# Abstract

**Objectives:** To verify if parents of children aged 0-12 months receive guidance on safe sleep habits and measures to prevent Sudden Infant Death Syndrome (SIDS) in pediatric childcare consultations.

**Methods and Material:** This is an exploratory, crosssectional population-web- based survey, with parents of infants who were born in all regions of Brazil. The web survey consisted of 60 -questions, starting with characterization of the sample, followed by the infant's current and perinatal health, sleep habits, parents' knowledge about SIDS and the Back to Sleep campaign, and orientation received on primary care visits regarding safe sleep practices. Data analysis was performed using descriptive statistics and Student's ttests, with the aid of the Statistical Package for the Social Sciences software (SPSS<sup>®</sup> 21).

**Results:** Respondents were 642 parents (94% mothers). 59.7% received guidance from the pediatrician regarding sleep position, 54.2% put their child to sleep in a crib next to their bed, 50.6% believed that the supine position is safe for sleeping. However, 44.3% still use the lateral position. Most parents (74.7%) claim to believe the pediatrician's guidance on sleeping positions. Approximately half (50.7%) of the mothers recognize preventive SIDS measures and 47.3% were aware of the Back to Sleep campaign. Regional differences were observed concerning sleep position and guidance. The supine position was most used in the South (p < 0.001) and guidance was more prevalent in the South, Southeast, Midwest regions (p = 0.029).

**Conclusions:** Sleep position guidance from Pediatricians results in safe sleep practices and greater knowledge of SIDS. It is noteworthy that some parents continue to adopt risky behaviors despite having received the correct guidance.



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# Introduction

Sudden Infant Death Syndrome (SIDS) is defined as the unexpected death of any child under the age of 1 year, which remains unexplained after a careful investigation that includes clinical history, complete autopsy, and review of the place where the death occurred [1].

Since the 1980s, several countries have started campaigns on guidance for safe sleeping positions for infants, strengthening the orientation of the supine position [2,3]. These campaigns, called "Back to Sleep", were responsible for the reduction of SIDS in several countries, for example, Australia reduced the incidence of SIDS from 1.9 per 1000 live births in 1990 to 1.1 per 1000 live births in 1992, [4] while the United Kingdom achieved a reduction from 912 in 1991 to 456 in 1992 [5]. and New Zealand from 4.1 per 1000 live births in 1989 to 2.5 per 1000 live births in 1991[6], Given the success of these campaigns and with a considerable delay vis-à-vis developed countries, through a partnership between *Pastoral da Criança* [7] Ministry of Health, Brazilian Society of Pediatrics, and other entities, the Brazilian "Sleep with belly up is Safer" campaign was launched on 2009.

Currently, in Brazil, SIDS (ICD 10 - R95) is on the list of causes of preventable deaths from interventions by the Unified Health System (SUS), and is considered preventable as long as health promotion actions take place, previously it was classified as "other causes of death" (not clearly avoidable) [8].

However, despite an important reduction in the number of SIDS cases after campaigns carried out globally, the syndrome remains an important preventable cause of infant mortality [3,9,10].

In this sense, considering that Brazil is a continental country with great social inequities, this study aimed to assess whether parents of infants are receiving guidance on safe sleep habits and prevention of SIDS in pediatric primary care visits. We hypothesize that pediatricians and primary care health professionals would be the main agents of this change.

#### **Subjects and Methods**

This is an exploratory, cross-sectional population-based study carried out through an online survey. Study participants are parents of infants (0–12 months years old) who were born in all regions of Brazil. Given the Brazilian population of 206,729,912 inhabitants [11] and a 4% margin and a 95% confidence interval, the minimum sample number was 601 participants.

The inclusion criteria for the study were parents of children aged 0 to 12 months, who agreed to participate voluntarily in the research, completely filled out the online questionnaire, and agreed with the informed consent form. Thus, the cases of exclusion were parents with children older than 12 months who accessed the instrument, questionnaires not fully answered or with inconsistent data, and residence outside Brazil.

The research instrument was a questionnaire composed of 60 questions, starting with the characterization of the sample, followed by questions about the infant's current and perinatal health, sleep habits and parents' knowledge about SIDS and the "Back to Sleep" campaign. This questionnaire was prepared based on the group's previous studies on the topic [12-14].

Before data collection, a pilot study was carried out with 38 respondents, which made it possible to check for inconsisten-

cies and problems in understanding the questionnaire. After this first phase, the instrument underwent some modifications and data collection was started through the Qualtrics<sup>®</sup> platform, from April 28, 2019, to May 18, 2020. Patients were invited to participate in the study though social media (Instagram, Facebook). Patients had no involvement in the design, dissemination of results or as advisors.

Data analysis was performed using descriptive statistics and Student's t-tests, with the aid of the Statistical Package for the Social Sciences software (SPSS<sup>®</sup> 21).

This research complied with the guidelines that regulate research with humans described in Resolution 466/2012. For this, the participants signed an electronic informed consent form before accessing the questionnaire. The research was approved by the institutional Ethics Committee and is registered on *Plataforma Brazil* under the number CAAE: 05066918.4.0000.5336.

Table 1: Characteristics of the sample.

		n	%
Respondent	Mother	604	94.08
Parent	Father	38	5.92
	From 14 to 23	78	12.15
Age in years	From 24 to 33	302	47.04
	From 34 to 43	251	39.10
	From 44 to 53	5	0.78
	Not informed	6	0.93
	Caucasian	509	79.28
Ethnicity	Afro-descendent	33	5.14
(self-	Mixed	89	13.86
declared)	Asian	9	1.40
	Not informed	2	0.31
	Incomplete elementary school	2	0.31
	Complete elementary school	2	0.31
Level of education	Incomplete middle school	15	2.34
	Complete middle school	17	2.65
	Incomplete high school	33	5.14
	Complete high school	157	24.45
	Graduate	199	31.00
	Graduate Education	217	33.80
	No income	4	0.62
	Up to 1minimun wage (≤ 180 US)	30	4.67
	1 to 3 minimum wage (from180 to 541 US)	153	23.83
	3 to 5 minimum wage (from 541 to 902 US)	174	27.10
	5 to 15-minimum wage (from 902 to 2707 US)	209	32.55
	Above 15-minimum wage (> 2707 US)	58	9.03
	Not informed	14	2.18
	South	448	69.78
	Southeast	104	16.20
Desien	Northeast	31	4.83
Region	Midwest	27	4.21
	West	31	4.83
	Not informed	1	0.16
	Vaginal	169	26.32
Method of	Cesarian (elective)	199	31.00
delivery	Cesarian (by Medical indication)	267	41.59
	Not informed	7	1.09

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Table 2: Characteristics	of the infants.				Supine	325	50.62
				Position usually used to	Lateral	285	44.39
				sleep	Prone	11	1.71
	Female				Not informed	21	3,47
Infant's sex	Male	-			Yes	230	35.83
	Not informed				No	296	46.12
	<1 month	48	7.48	Use a pacifier to sleep	Sometimes	285           11           21           230           296           115           1           1           1           430           71           1           383           243           16           316           80           246           480           39           27           96           279           304           59           390           59           390           59           390           59           390           59           390           59           390           59           390           59           390           59           390           59           390           59           309           325           8           321           311           10	17.92
	1 month	n $\frac{n}{2}$ $\frac{\pi}{2}$ ale31749.38le32150.00ormed40.62ormed40.62ormed40.62ormed40.62ormed487.48nth6810.59nths619.50nths619.50nths619.50nths568.72nths568.72nths568.72nths365.61nths365.61nths365.61nths365.61nths385.92nths365.61nths294.52auate40563.08eight253.89th weight13921.65nth weight13912226.79atient Clinic42nth site supple12nth weight1322.637.96nember131322.679atient Clinic48122nth supple1313118.22nth supple1313211.667nth supple13.6,14nth supple335,1450.54nth supple13.6,141335,1414450.55155551555515657157 <td< td=""><td>1</td><td>0.16</td></td<>	1	0.16			
	2 months	61	9.50		Not inform	Lateral285Prone11Not informed21Yes230No296Sometimes115Not informed1Not informed1Yes140No430Sometimes71Not informed1Yes383No2430Sometimes71Not informed1Yes383No2430Sometimes71Not informed16Supine316Supine316Lateral80Not informed246Yes480No39Do not know279No304No59Yes390No59Ano59No325Not informed8Yes304No325Not informed8Yes321No311Not informed311Not informed10Oldiscification criteria Toriat	
	3 months	65	10.12		Yes		21.8
	4 months	61	9.50	Use of objects pillow, cloth,	No		66.98
	5 months	36	5.61		Sometimes		11.06
Infant's age	6 months	56	8.72		Not informed		0.16
	7 months	54	8.41	Podiatrician/Primary caro	Yes		59.66
	8 months	41	6.39				37.85
	9 months	36	5.61				2.49
	10 months	38	5.92	Desition Oriented by			49.22
	11 months	49	7.63		•		12.46
	12 months	29	4.52				38.32
	Adequate	405	63.08				74.77
Dist. Maiste	Overweight	25	3.89			285           11           21           230           296           115           1           1           1           1           430           71           1           383           243           16           316           80           246           480           296           301           270           96           279           304           59           390           59           390           59           390           59           390           59           390           59           390           59           390           59           390           59           390           59           301           325           8           321           311           10	6.07
Birth Weight (Classification WHO)	Very low birth weight	139	21.65				4.21
	Low birth weight	55	8.57				14.95
	Do not remember	18	2.80		•		43.46
	Public Health System	172	26 79	Parents' knowledge about		285         11         21         230         296         115         1         1         1         1         1         1         1         140         430         71         1         383         243         16         316         80         246         480         390         270         96         279         304         59         390         59         8         390         59         8         309         8         309         8         321         311         10	
Primary care visits	Outpatient Clinic	1/2	20.79	"Back to sleep" campaign			47.35
Filling cale visits	Private Outpatient Clinic	462	71.96				9.19
	Not informed	8	1.25	Parents' knowledge about			60.75
	Crib/bed in parents' room	348	54.21	e e		<ul> <li>285</li> <li>11</li> <li>21</li> <li>230</li> <li>296</li> <li>115</li> <li>1</li> <li>1</li> <li>430</li> <li>71</li> <li>430</li> <li>71</li> <li>383</li> <li>243</li> <li>16</li> <li>316</li> <li>39</li> <li>279</li> <li>304</li> <li>59</li> <li>304</li> <li>59</li> <li>304</li> <li>59</li> <li>304</li> <li>59</li> <li>304</li> <li>59</li> <li>304</li> <li>59</li> <li>3185</li> <li>8</li> <li>309</li> <li>59</li> <li>325</li> <li>8</li> <li>321</li> <li>311</li> <li>10</li> <li>a tor birth</li> </ul>	9.19
	Crib/bed in own room	117	18.22	supine sleep position			28.82
	Bed sharing with parents	107	16.67				1.25
Where the infant's sleep	Bed sharing with another	22	5 14	Parents' knowledge about			48.13
	person	33	5,14	e e		11           21           230           296           115           1           1           30           71           1           383           243           16           316           80           243           6           316           80           243           6           304           59           304           59           185           8           309           59           185           8           309           59           185           8           309           59           185           8           309           325           8           321           311           10	50.62
	Bed sharing with brothers	3	0.47		Not informed		1.25
	Not informed	34	5.30	Parents' knowledge about	Yes	321	50.00
	Soft	324	50.47	preventive SIDS measures	No	311	48.44
N 4 - 11	Hard	254	39.56	r	Not informed	10	1.56
Mattress Type	Another option *	58	9.03	Note: World Health Organizatio	. ,		
		1	-	low weight (children under 2500	a) insufficient weight (2500	) to 2999 (	7)

low weight (children under 2500 g), insufficient weight (2500 to 2999 g), adequate weight (3000 to 3999 g) and excess weight (4000g or more). SIDS = sudden infant death syndrome.

Source: research data.\*Another Option: another type of mattress

Mr. de ha		REGION						
Variable	Total n(%)	South <b>n(%)</b>	Southeast n(%)	Northeast <b>n(%)</b>	Midwest <b>n(%)</b>	West <b>n(%)</b>	р	
Age								
14 - 23 years	78 (12.3)	45 (10.1)#	18 (17.5)	5 (16.7)	2 (8.0)	8 (25.8)#		
24 - 33 years	302 (47.5)	203 (45.4)	47 (45.6)	21 (70.0)#	16 (64.0)	15 (48.4)	0.014	
34 - 43 years	251 (39.5)	195 (43.6)#	37 (35.9)	4 (13.3)#	7 (28.0)	8 (25.8)		
44 - 53 years	5 (0.8)	4 (0.9)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Ethnicity								
Caucasian	508 (79.5)	409 (91.5)#	57 (55.3)#	20 (64.5)#	10 (37.0)#	12 (38.7)#		
Afro descendants	33 (5.2)	9 (2.0)#	16 (15.5)#	4 (12.9)#	3 (11.1)	1 (3.2)	10.001	
Mixed	89 (13.9)	27 (6.0)#	25 (24.3)#	7 (22.6)	13 (48.1)#	17 (54.8)#	< 0.001	
Asian	9 (1.4)	2 (0.4)#	5 (4.9)#	0 (0.0)	1 (3.7)	1 (3.2)		
evel of education								
Not informed	2 (0.3)	0 (0.0)#	0 (0.0)	0 (0.0)	0 (0.0)	2 (6.5)#	0.001	
Incomplete elementary school	2 (0.3)	1 (0.2)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0.001	

6

0.93

Table 3: Profile of respondent parents' according to geographical regions.

Not informed

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Complete elementary school	15 (2.3)	6 (1.3)#	6 (5.8)#	1 (3.2)	2 (7.4)	0 (0.0)	
Incomplete Middle school	17 (2.7)	9 (2.0)#	6 (5.8)	0 (0.0)	0 (0.0)	2 (6.5)	
Complete Middle school	33 (5.1)	21 (4.7)	7 (6.7)	2 (6.5)	0 (0.0)	3 (9,7)	
Incomplete high school	157 (24.5)	99 (22.1)#	33 (31.7)	10 (32.3)	5 (18.5)	10 (32.3)	
Complete high school	198 (30.9)	143 (31.9)	30 (28.8)	8 (25.8)	8 (29.6)	9 (29.0)	
Graduated	160 (25.0)	127 (28.3)#	14 (13.5)#	4 (12.9)	11 (40.7)	4 (12.9)	
Graduated Education	57 (8.9)	42 (9,4)	7 (6.7)	6 (19.4) #	1 (3.7)	1 (3.2)	
ncome							
No income	4 (0.6)	3 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.3)#	
Up to 1 minimum wage	30 (4.8)	10 (2.2)#	9 (8.9)#	3 (10.3)	1 (3.7)	7 (30.4)\#	
1 - 3 minimum wage	152 (24.2)	84 (18.8)#	45 (44.6)#	4 (13.8)	11 (40.7)	8 (34.8)	
3 - 5 minimum wage	174 (27.8)	136 (30.4)#	20 (19.8)	10 (34.5)	7 (25.9)	1 (4.3)#	< 0.001
5 - 15 minimum wage	209 (33.3)	165 (36.9)#	23 (22.8)#	9 (31.0)	7 (25.9)	5 (21.7)	
Over 15 minimum wage	58 (9.3)	49 (11.0)#	4 (4.0)#	3 (10.3)	1 (3.7)	1 (4.3)	

#statistically significant association by the residual test adjusted to 5% significance (Chi-square test)

 Table 4: Characteristics of prenatal care and delivery according to geographical regions.

Variables	REGION								
	Total n(%)	South n(%)	Southeast n(%)	Northeast n(%)	Midwest n(%)	West n(%)	р		
Prenatal	· · · · · · · · · · · · · · · · · · ·								
Yes, in private practice	460 (72.7)	362 (81.9)#	55 (5.4)#	17 (54.8)#	15 (57.7)	11 (35.5)#			
Yes, in the Public Health System	151 (23.9)	66 (14.9)	42 (40.8)#	14 (45.2)#	11 (42.3)#	18 (58.1)#			
Yes, in a Hospital for high –risk pregnancies	18 (2,8)	10 (2.3)	6 (5.8)#	0 (0.0)	0 (0.0)	2 (6.5)	< 0.001		
Late prenatal care (after 6th month of pregnancy)	3 (0.5)	3 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)			
No prenatal care	1 (0.2)	1 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)			
Delivery					·				
Vaginal	169 (26.7)	93 (21.0)#	46 (44.2)#	13 (41.9)#	7 (26.9)	10 (33.3)			
Cesarian (elective)	199 (31.4)	153 (34.5)#	22 (21.2)#	10 (32.3)	8 (30.8)	6 (20.0)	< 0.001		
Cesarian (by Medical indication)	266 (42.0)	197 (44.5)#	36 (34.6)	8 (25.8)	11 (42.3)	14 (46.7)			
Pediatric primary care visits			·						
Public Health System Outpatient Clinic	171 (27.0)	80 (17.9)#	51 (49.5)#	14 (46.7)#	10 (40.0)	16 (55.2)#	. 0.001		
Private Outpatient Clinic	462 (73.0)	366 (82.1)#	52 (50.5)#	16 (53.3)#	15 (60.0)	13 (44.8)#	< 0.001		

#statistically significant association by the residual test adjusted to 5% significance (Chi-square test).

Variable			REGION						
variable	Total n(%)	South <b>n(%)</b>	Southeast n(%)	Northeast <b>n(%)</b>	Midwest <b>n(%)</b>	West <b>n(%)</b>	р		
Mattress Type									
Soft	324 (51.0)	210 (47.1)	63 (60.6)	18 (58.1)	16 (59.3)	17 (63.0)			
Hard	253 (39.8)	196 (43.9)	31 (29.8)	10 (32.3)	8 (29.6)	8 (29.6)	0.18		
Another option#	58 (9.1)	40 (9.0)	10 (9.6)	3 (9.7)	3 (11.1)	2 (7.4)			
Usual sleep position									
Supine	325 (50.9)	226 (50.8)	49 (47.1)	14 (45.2)	19 (70.4)#	17 (54.8)	0.00		
Lateral	285 (44.7)	200 (44.9)	54 (51.9)	16 (51.6)	5 (18.5)#	10 (32.3)			
Prone	10 (1.6)	4 (0.9)#	0 (0.0)	1 (3.2)	2 (7.4)#	3 (9.7)#			
Not informed	18 (2.8)	15 (3.4)	1 (1.0)	0 (0.0)	1 (3.7)	1 (3.2)			
Received pediatric guidance									
Yes	383 (61.2)	286 (65.0)#	56 (54.4)	13 (43.3)#	15 (57.7)	13 (48.1)	0.02		
No	243 (38.8)	154 (35.0)#	47 (45.6)	17 (56.7)#	11 (42.3)	14 (51.9)	0.02		
Hear Say Campaign									
Yes	278 (43.4)	193 (43.1)	44 (42.3)	15 (48.4)	12 (44.4)	14 (45.2)			
No	304 (47.4)	208 (46.4)	53 (51.0)	12 (38.7)	14 (51.9)	17 (54.8)	0.50		
No remember	59 (9.2)	47 (10.5)	7 (6.7)	4 (12.9)	1 (3.7)	0 (0.0)			

Knowledge SUDI							
Yes	309 (48.7)	232 (51.9)	44 (42.7)	11 (37.9)	11 (42.3)	11 (37.9)	0 170
No	325 (51.3)	215 (48.1)	59 (57.3)	18 (62.1)	15 (57.7)	18 (62.1)	0.170
Knowlegde about preventi	on SUDI						
Yes	320 (50.7)	231 (52.0)	46 (44.7)	15 (53.6)	15 (55.6)	13 (44.8)	0.022
No	311 (49.3)	213 (48.0)	57 (55.3)	13 (46.4)	12 (44.4)	16 (55.2)	0.633

<sup>#</sup>statistically significant association by the residual test adjusted to 5% significance (Chi-square test) #Another Option: another type of mattress

#### Results

The research ended with 691 responders; after reviewing the data, 49 were excluded (44 due to the child's age being over 12 months and five because they were respondents who live outside Brazil), resulting in 642 valid questionnaires. Characteristics of the sample were shown in **Table1**.

Regarding the characteristics of the infants, there was a homogeneous distribution between the sexes and most neonates were born with an adequate weight to gestational age according to WHO criteria. Sleep habits, knowledge regarding risk factors for SIDS and "Back to Sleep Campaign" were available on table 2.

**Table 3** shows the demographic profile of the respondents per geographical regions around the country. There is a significant difference among regions regarding age (p = 0.014), ethnicity (p < 0.001), educational level (p = 0.001), and income (p < 0.001).

**Table 4** shows the characteristics of prenatal care and delivery according to geographical regions of the country. There was a significant difference between the regions concerning the place of prenatal care (p < 0.001), type of delivery (p < 0.001), and place of pediatric primary care visits (p < 0.001).

**Table 5** shows the characteristics of sleep habits according to geographical regions. There was a significant difference in the regions regarding the position usually used to sleep (p < 0.001) and receiving guidance from the pediatrician/primary care physicians (p = 0.029).

# Discussion

This study aimed to assess the guidance received by parents of infants, concerning safe sleep habits and measures to prevent SIDS, during pediatric primary care visits. Although the respondent population was formed predominantly by educated mothers, with self-declared white skin color and of middle socioeconomic class, whose children consult in private clinics, we nevertheless observed a considerable prevalence of the use of unsafe sleep practices and a lack of information about SIDS and its prevention.

Some studies carried out after the Brazilian "Back to Sleep" campaign have shown greater adherence to the use of the supine position during sleep [15,16]. This is reflected in the results of this study, where the practice of supine position appeared consolidated in half of the sample (50.62%), suggesting that the guidance of the primary care physician/pediatrician, which occurred in 61.2% of the cases, was important for the parents' decision to place their children in this safe position. When comparing these data to previous studies carried out in southern Brazil, we observed an increase in the use of supine position, possibly due to the effects of the "Back to Sleep" campaign carried out in 2009–2010 [13,16]. However, in 2013, in a cross-sectional study carried out in the only two maternity hospitals

in the city of Rio Grande, RS, the intention to use the supine position was observed in only 17.8%. It should be noted that in this study, mothers were interviewed 48 h after delivery and might not have yet received any information about safe sleep habits [15].

In an observational study that assessed deaths from SIDS in the city of Pelotas, RS, from 2006 to 2013, of the 37 registered deaths, 26 infants (70%) slept with their parents and 23 (61%) were sleeping in a lateral position [17]. These results suggest that cultural changes and more enlightening campaigns on safe sleep are still needed.

The practice of bed-sharing, defined as sharing the same bed or sofa with an adult or another child is also a risk factor for SIDS [18]. In the current study, 16.67% reported sharing, demonstrating a significant reduction after the campaign, when compared with three other pre-campaign studies carried out in southern Brazil (respectively 44%,45.8% and 31.2%) [19-21]. In addition to all having been carried out before the "Back to Sleep" campaign in Brazil, the rate of bed-sharing was higher in the most disadvantaged economic groups [13,20]; and associated with mothers without a partner and cohabitation with the maternal grandmother[21].

There are no recent studies in the literature evaluating the prevalence of bed-sharing. In previous studies carried out in other countries, the rates were much higher than those found in our current study. Southwest England data, published in 2009, indicate a prevalence of 54% [18]. In the Chicago Mortality Study (CIMS), which included 195 black infants who died of SIDS and 195 matched control infants, these were observed in 57.9% of deaths compared to 37% of control infants [22]. In the Scottish study, with data collected between 1996 and 2000, 123 children diagnosed with SIDS were compared to 263 live infants; 87% of infants who died were sharing the bed with their parents during sleep [23]. In another case-control study carried out in the United Kingdom in two periods [between 1993 and 1996 (population: 17.7 million) and between 2003 and 2006 (population: 4.9 million)], 400 infants who died due to SIDS and 1386 live control infants were analyzed; 36% were sleeping with their parents at the time of death, compared with 15% of the control group [24]. The practice of bed-sharing remains high and there is an association between this and the risk of SIDS. The practice of bed-sharing was justified in the study by Hauck and colleagues as a convenience that allows easier surveillance of the baby, and, in some cases, as a way to protect their children from external dangers [25].

The practice of bed-sharing can be associated with a cultural issue or the environmental situation of each family, as some studies show that bed-sharing is associated with an unfavorable socioeconomic issue [13,18,20-23]. It is also worth mentioning the ethnicity variable, which is a well-known risk factor for SIDS in relation to bed sharing and the higher occurrence in Afro-Americans, as mentioned by some studies [25-27]. The low rate

of bed-sharing in the present study might have been influenced not only by the favorable socioeconomic condition of the respondent parents, but also by the predominantly Caucasian origin of the parents. Another important variable is the guidance received during primary care visits.

One of the risk habits evaluated in our study was the use of objects in the crib/bed reported by parents and the use of the soft mattress. These habits, contrary to what is recommended for the prevention of SIDS, might still happen due to a lack of knowledge about safe sleep habits. For example, Lambert [28], from 2011 to 2014 analyzed data from SIDS in records from the CDC SUID Case Registry in the United States. Of the 1812 cases, 69% used soft mattresses, and 79% had soft objects reported to obstruct the babies' airways [29]. The risk of this practice has also been confirmed in two other studies conducted in the United States. In the first, there were differences in sleep environments, such as younger infants were more likely to die while sleeping on the same surface, usually sharing a bed with adults, whereas the older infants were more likely to have been found prone next to objects, such as blankets and stuffed animals [30]. The second study investigated which objects were present in the sleep environment at the time of death: pillows bedding and blankets were observed in 21.3% of cases [31]. The analysis of those studies suggests that actions are still needed to inform parents about safe sleep habits.

Although parents still practice unsafe sleep habits, it is noteworthy to highlight the change of guidance Brazilian's pediatricians have adhere after the national campaign as observed by a web survey study answered by 1654 Pediatricians from all regions of the country, most (88.2%) were familiar with the campaign, and 84.7% were aware of the current recommendation of supine sleeping position to prevent SIDS. Before the campaign, 67.5% recommended lateral position and 23.1% the supine, after the campaign, 76.2% recommended supine and 10.4% lateral [32].

The present study has some limitations. Most responders came from the most privileged stratum of society. This is a potential bias in studies carried out on online platforms, where access to the internet is lower in the poorest regions. It was also not possible to obtain an equal sample of all states in the country. However, all five regions were represented.

In conclusion, appropriate sleep position advice by the pediatrician during primary care contributes to safe sleep practices and greater knowledge of SIDS. It is noteworthy that some parents continue to adopt risky behaviors despite having received the correct guidance. There is a difference between knowledge among users of private and public healthcare facilities; in the former, safe sleep practices are more emphasized during the visits.

Based on this study, it is still necessary to implement SIDS prevention measures with a focus on risk factors, thereby reducing knowledge barriers between parents and health professionals and providing an improvement in patient's safe sleep habits.

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