



- The child has a disease ($p=0.008$) $PR=1.77$ (Chart 7).

On another regression model—whose outcome was an SDSC > 39 (bad quality sleep)—the following associated factors were identified: positive report of diseases from the parents ($p=0.010$), bedwetting ($p=0.011$), and the non-acceptance of school meals ($p=0.005$).

Chart 4

Association between Childrens' sleep disorders (global SDSC) and sociodemographic variable. Brazil, 2018.

Variables	Global score				P-value
	> 39		≤ 39		
	Bad quality sleep		Good quality sleep		
Study period					0.437 ¹
Morning	42	42.0	58	58.0	
Evening	45	36.9	77	63.1	
Age group					0.223 ¹
6 to 8	34	34.7	64	65.3	
9 to 11	53	42.7	71	57.3	
Gender					0.439 ¹
Female	51	41.5	72	58.5	
Male	36	36.4	63	63.6	
Skin color					0.075 ²
White	27	43.5	35	56.5	
Black	6	37.5	10	62.5	
Brown	50	36.2	88	63.8	
Yellow	0	0	2	100	
Other	4	100	0	0	
BMI categories					0.224 ¹
Obese	22	52.4	20	47.6	
Overweight	15	41.7	21	58.3	
Eutrophic	37	34.6	70	65.4	
Underweight	13	35.1	24	64.9	
Overweight or obesity					0.064 ¹
With overweight/obesity	37	47.4	41	52.6	
Without overweight/obesity	50	34.7	94	65.3	
Abdominal circumference					0.122 ¹
Altered	31	47.0	35	53.0	
Normal	56	35.9	100	64.1	
Waist height relation					0.185 ¹
Altered	40	44.4	50	55.6	
Normal	47	35.6	85	64.4	
Blood pressure classification					0.956 ¹
Altered	5	38.5	8	61.5	
Normal	82	39.2	127	60.8	

¹ Chi-square test; ² Exact test of Fisher

Chart 5

Association between Childrens' sleep disorders (global SDSC) and children's health variables. Brazil, 2018.

Variables	Global score				p-value
	> 39 Bad quality sleep		≤ 39 Good quality sleep		
Eating in front of the TV					0.117 ¹
Yes	58	36.0	103	64.0	
No	29	47.5	32	52.5	
Internet at home					0.118 ¹
Yes	39	34.2	75	65.8	
No	48	44.4	60	55.6	
Hours in front of screens					0.854 ¹
< 2 hours	15	40.5	22	59.5	
> 2 hours	72	38.9	113	61.1	
Possession of tablet or cell phone					0.472 ¹
Yes	62	40.8	90	59.2	
No	25	35.7	45	64.3	
TV or computer in the sleeping place					0.653 ¹
Yes	36	37.5	60	62.5	
No	51	40.5	75	59.5	
Active or sedentary lifestyle					0.413 ¹
Active	37	42.5	50	57.5	
Sedentary	50	37.0	85	63.0	
Neck circumference					0.628 ¹
Yes	37	41.1	53	58.9	
No	50	37.9	82	62.1	
Bedwetting					0.018 ¹
Yes	32	51.6	30	48.4	
No	55	34.4	105	65.6	
Defined hour to go to bed					0.598 ¹
Yes	55	37.9	90	62.1	
No	32	41.6	45	58.4	
Report of disease					0.309 ¹
Yes	13	48.1	14	51.9	
No	74	37.9	121	62.1	
Accepts school meals					0.008 ¹
Yes	63	35.0	117	65.0	
No	24	57.1	18	42.9	
Eats before going to school					0.245 ¹
Yes	79	38.2	128	61.8	
No	8	53.3	7	46.7	
Accomplish meals accompanied					0.978 ¹
Yes	80	39.2	124	60.8	
No	7	38.9	11	61.1	
Practices physical activities during free time					0.049 ¹
Yes	53	45.3	64	54.7	
No	34	32.4	71	67.6	

¹ Chi-square test; ² Exact test of Fisher



Chart 6

Association between children's sleep disorders (global SDSC) and caregivers-related variables. Brazil, 2018.

Variable	Global score				P- value
	> 39		≤ 39		
	Bad sleep quality		Good sleep quality		
Sleep quality³					0.087 ²
Good	41	33.3	82	66.7	
Poor	40	44.9	49	55.1	
Presence of disturbance	6	60.0	4	40.0	
Caregiver's daily drowsiness⁴					0.046¹
No	70	37.4	117	62.6	
Yes	17	48.6	18	51.4	
Genitor					0.459 ¹
Mother	67	37.6	111	62.4	
Father	11	40.7	16	59.3	
Caregiver's kinship					0.342 ¹
Grandparents/Uncles	9	52.9	8	47.1	
Mother	67	37.6	111	62.4	
Others	20	45.5	24	54.5	
Caregiver goes to work					0.860 ¹
Yes	30	40.0	45	60.0	
No	57	38.8	90	61.2	
Caregiver reports insomnia					0.402 ¹
Yes	25	43.9	32	56.1	
No	62	37.6	103	62.4	
Caregiver reports disease					0.009¹
Yes	32	53.3	28	46.7	
No	55	34.0	107	66.0	
Caregiver uses medication to sleep					0.057 ¹
Yes	21	52.5	19	47.5	
No	66	36.3	116	63.7	
Caregiver uses other medications					0.122 ¹
Yes	31	47.0	35	53.0	
No	56	35.9	100	64.1	
Caregivers evaluation of their child's sleep quality					0.010²
Very poor	3	37.5	5	62.5	
Poor	24	52.2	22	47.8	
Good	41	44.6	51	55.4	
Verv good	19	25.0	57	75.0	

¹ Chi-square test; ² Exact test of Fisher

Chart 7

Poisson's regression for inadequate sleeping hours (child) as a dependent variable. Brazil. 2018.

Model's variables	PR ¹	CI 95% ²	P-value
Caregiver goes to work			0.015
Yes	1.54	1.09 - 2.17	
No	1	-	
Period where the child studies			<0.001
Morning	2.39	1.63 - 3.51	
Evening	1	-	
Report of disease (child)			0.008
Yes	1.77	1.16 - 2.69	
No	1	-	

PR: Prevalence Ratio; CI: Confidence Interval of 95%

DISCUSSION

The present study shows a global SDSC ≤ 39 (good sleep quality) of 60.8%; this is consistent with other similar studies in which most children proved to have good sleep quality^{12,31}. Sleep quality is crucial for well-being during the day and for improving performance in each child's activities. Childhood is characterized by a large number of changes in neuromotor growth; therefore, physical rest and recovery is extremely important for children due to their impact on child growth and development³².

Children with adequate hours of sleep studied in the afternoon, spent less than two hours on screens, and had no reports of illness. Studying on the afternoon shift can provide more hours of sleep as there is no need to wake up early to arrive in time for school. Some consulted studies reveal the negative influence of screens (smartphones, television, tablets) on sleep quality³³. Furthermore, healthy children have less damage to the sleep-wake pattern¹².

Children whose caregivers had no employment relationship outside the home were classified as having adequate hours of sleep. When caregivers—