RELATIONSHIP BETWEEN SLEEP HABITS AND MATERNAL PSYCHOPATHOLOGY IN CHILDREN WITH AND WITHOUT AUTISM SPECTRUM DISORDER

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BACKGROUND

As sleep is an essential element for growth, healthy sleep is highly critical for physical and cognitive development in the early years of life. Sleep duration, sleep onset, continuity, and sleep-wake patterns are factors along with various extrinsic and intrinsic factors for sleep quality[1]. Maternal sleep habits, co-sleeping, family chaos, and culture are some of the extrinsic factors found related to sleep difficulties[2]. Sleep problems are also found to be linked with the poorer mental health of caregivers, which is mainly led by the cumulative parental stress related to sleep difficulties[3].

Although sleep problems are prevalent in all pediatric populations, there is a higher frequency in samples with autism spectrum disorder (ASD)[4]. Difficulties in settling to sleep, night waking and shorter sleep duration are main sleep problems found to be correlated with autism severity[5]. It is also shown that maternal stress is associated with sleep problems of children with ASD, even after controlling for autistic severity and maternal sleep[6].

METHOD

The sample consists of 131 children aged 18-42 months referred the clinic for neurodevelopmental delays (CND) at the department of child and adolescent psychiatry at Istanbul Medeniyet University. Referrals to the CND are of children mainly with suspected autism spectrum disorder from primary care centers or by pediatricians. In the present study, a total of 131 young children who had underwent a thorough assessment including a medical checkup to exclude impairment in hearing and motor deficit, psychiatric examination, family assessment structured interviews and use of age-appropriate developmental and social-emotional measures. The Childhood Autism Rating Scale was administered by the clinician. Child Sleep Habits Questionnaire and Symptom Checklist 90 were filled in by mothers.

RESULTS

Table 1. Sociodemographic Characteristics of Sample

	n (%)	Mean ±sd
gender		
male	95 (72,5)	
female	36 (27,5)	
age (months)		27,76±6,58
age of father		36,97±5,54
age of mother		34,06±5,61
maternal education status		
illiterate	2 (1,5)	
primary school	44 (33,6)	
high school	32 (24,4)	
university	50 (38,2)	
paternal education status		
illiterate	1 (0,8)	
primary school	33 (25,2)	
high school	45 (34,4)	
university	48 (36,6)	
Family income		
<300 USD	22 (16,8)	
300-600 USD	52 (39,7)	
600-1000 USD	21 (16)	
>1000 USD	30 (22,9)	
Number of Children		
1	54 (41,2)	
2	53 (40,5)	
3 and above	23 (17,6)	
Familial physical disease history	43 (32,8)	
Familial psychiatric disorder history	22 (16,8)	
gestational smoking	16 (12,2)	
high-risk pregnancy	43 (32,8)	
Newborn Complications	56 (42,7)	
Incubator history	32 (24,4)	
gestational age		38,02±2,43
≤37	35 (28,2)	
38-42	88 (71)	
>42	1 (0,8)	
types of delivery		
Vaginal Delivery	28 (21,4)	
C-section	81 (61,8)	
newborn weight (g)		3210,62±575,58
breastfeeding duration (months)		14,62±8,6
Groups		
ASD	36 (27,5)	
DD	42 (32)	
TD	53 (40,5)	

USD: United States Dollar ASD:Autism Spectrum Disorder DD:Developmental Delay TD:Typical Development

Table 2. Descriptive Statistics for Group Characteristics

	ASD n (%)	DD n (%)	TD n (%)	p
gender male	25 (69,4)	35 (83,3)	35 (66)	0.153
age (months)	29,83±7,12	27,5±6,48	26,55±6,04	0.095
maternal employment	**5 (13,9)**	19 (45,2)	20 (37,7)	0.01
Familial psychiatric disorder history	8 (22,2)	9 (22,5)	5 (9,6)	0.171
family history of speech and language delay	11 (30,6)	22 (57,9)	22 (42,3)	0.058
gestational smoking	4 (11,1)	6 (15,4)	6 (11,3)	0.808
high-risk pregnancy	13 (36,1)	14 (35,9)	16 (30,8)	0.829
Newborn Complications	14 (38,9)	20 (51,3)	22 (41,5)	0.508
Incubator history	9 (25)	12 (30,8)	11 (21,2)	0.579
gestational age ≤37	10 (31,3)	16 (40)	9 (17,3)	0.051
types of delivery C-section	18 (64,3)	25 (78,1)	38 (77,6)	0.370
newborn weight (g)	2999,17±475,39	3203,62±648,44	3340,49±540,35	0.033
CARS	28,68±7,04	17,33±1,44	15,31±0,26	<0.0001

ASD:Autism Spectrum Disorder DD:Developmental Delay TD:Typical Development

CARS:The Childhood Autism Rating Scale

Table 3. Sleep Characteristics Comparison Between Groups

	ASD (n:36)	DD (n:42)	TD (n:53)	p
	Mean (sd)			
Sleep onset time	22:57 (1:27)	22:28 (1:06)	22:20 (1:16)	0.099
Sleep onset after 22:00	22 (61,1)	26 (61,9)	21 (39,6)	0.048
Morning wake-up	9:06 (1:11)	8:51 (1:07)	9:01 (1:11)	0.643
Sleep Duration	10,88 (1,71)	11,29 (1,34)	11,2 (1,77)	0.571
CSHQ Bedtime Resistance	12,47 (3,08)	11,9 (2,49)	11,83 (2,97)	0.56
CSHQ Sleep Onset Delay	**2,11 (0,85)**	1,6 (0,8)	1,49 (0,7)	0.002
CSHQ Sleep Duration	4,97 (2,25)	4,12 (1,4)	4,23 (1,69)	0.303
CSHQ Sleep Anxiety	**7,39 (2,07)**	7,1 (1,6)	**6,47 (1,66)**	0.044
CSHQ Night Wakings	4,61 (1,34)	4,45 (1,13)	4,58 (1,2)	0.955
CSHQ Parasomnias	8,92 (2,42)	8,71 (1,73)	8,51 (1,83)	0.608
CSHQ Daytime Sleepiness	10,92 (2,47)	10,74 (1,9)	10,47 (1,99)	0.75
CSHQ Sleep Disordered Breathing	3,39 (0,87)	3,26 (0,66)	3,23 (0,64)	0.638
CSHQ Total	52,97 (8,76)	49,98 (6,19)	49,26 (7,16)	0.124

ASD:Autism Spectrum Disorder DD:Developmental Delay TD:Typical Development

CSHQ: The Children's Sleep Habits Questionnaire

Table 4. Correlations Between CSHQ and SCL-90

		SOM	OC	IPS	DEP	ANX	HOS	PHO	PAR	PSY	GSI
CSHQ Bedtime Resistance	rho	.315	.373	.305	.365	.328	.361	.168	.352	.265	.374
	p	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.002	<.001
CSHQ Sleep Onset Delay	rho	.179	.169	.113	.114	.173	.152	.078	.070	.085	.150
	p	.041	.054	.200	.194	.048	.084	.377	.425	.336	.087
CSHQ Sleep Duration	rho	.129	.177	.122	.152	.174	.071	.075	.050	.211	.164
	p	.143	.043	.165	.084	.047	.422	.392	.572	.016	.061
CSHQ Sleep Anxiety	rho	.244	.288	.192	.262	.255	.203	.104	.243	.151	.263
	p	.005	.001	.028	.003	.003	.020	.236	.005	.086	.002
CSHQ Night Wakings	rho	.287	.197	.242	.292	.285	.309	.154	.275	.251	.312
	p	.001	.024	.005	.001	.001	<.001	.079	.001	.004	<.001
CSHQ Parasomnias	rho	.312	.411	.333	.387	.304	.356	.337	.391	.368	.415
	p	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
CSHQ Daytime Sleepiness	rho	.211	.278	.285	.323	.248	.238	.102	.306	.276	.302
	p	.015	.001	.001	<.001	.004	.006	.244	<.001	.001	<.001
CSHQ Sleep Disordered Breathing	rho	.108	.172	.187	.153	.161	.153	.113	.151	.173	.170
	p	.219	.050	.033	.080	.065	.082	.199	.085	.048	.052
CSHQ Total	rho	.361	.433	.356	.430	.396	.420	.219	.391	.356	.448
	p	<.001	<.001	<.001	<.001	<.001	<.001	.012	<.001	<.001	<.001

CSHQ: The Children's Sleep Habits Questionnaire SCL-90:Symptom Checklist-90 SOM:Somatization OC:Obsessive compulsion IPS:Interpersonal sensitivity DEP:Depression ANX:Anxiety HOS:Hostility PHO:Phobic anxiety PAR:Paranoid ideation PSY:Psychoticism GSI: Global Severity Index

CONCLUSION

A comprehensive evaluation including environmental factors such as parental psychopathology and sleep problems while performing neurodevelopmental evaluation in toddlers will help in the diagnosis process, prevent unnecessary diagnosis, and provide valuable information for the psychosocial rehabilitation and well-being of the child and mother.

References:

1. Sadeh, A., & Anders, T. F. (1993). Infant sleep problems: Origins, assessment, interventions. Infant mental health Journal, 14(1), 17-34.
2. Covington, L. B., Armstrong, B., & Black, M. M. (2018). Perceived toddler sleep problems, co-sleeping, and maternal sleep and mental health. Journal of Developmental & Behavioral Pediatrics, 39(3), 238-245.
3. Sadeh, A., Tikotzky, L., & Scher, A. (2010). Parenting and infant sleep. Sleep medicine reviews, 14(2), 89-96.
4. Krakowiak, P., Goodlin-Jones, B., Hertz-Picciotto, I., Croen, L. A., & Hansen, R. L. (2008). Sleep problems in children with autism spectrum disorders, developmental delays, and typical development: A population-based study. Journal of sleep research, 17(2), 197-206.
5. Hoffman, C. D., Sweeney, D. P., Gilliam, J. E., Apodaca, D. D., Lopez-Wagner, M. C., & Castillo, M. M. (2005). Sleep problems and symptomology in children with autism. Focus on Autism and Other Developmental Disabilities, 20(4), 194-200.
6. Hoffman, C. D., Sweeney, D. P., Lopez-Wagner, M. C., Hodge, D., Nam, C. Y., & Botts, B. H. (2008). Children with autism: Sleep problems and mothers' stress. Focus on Autism and Other Developmental Disabilities, 23(3), 155-165.