



EVALUATION OF SLEEP QUALITY AND PERCEIVED STRESS AMONG PARENTS OF SCHOOL GOING CHILDREN DURING COVID-19 PANDEMIC: A CROSS SECTIONAL STUDY

Psychiatry

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ABSTRACT

Aims & Objectives- The present study was aimed to evaluate the prevalence of changes in sleep quality and perceived stress and also to see the effect of perceived stress on sleep quality among parents of school going children. **Materials And Method-** It was a cross-sectional study that was conducted among parents of school going children to fulfill above aims at a private school in district Kurukshetra, Haryana. 209 parents of children aged between 3-18 years who gave the informed consent were included. Parents having 1 or more than 1 children were included. The socio-demographic details were collected on the proforma designed for the present study. The changes in sleep quality was assessed using the Pittsburgh sleep index and perceived stress was assessed using perceived stress scale respectively. **Results-** Out of 209 Parents 82(39.2%) have Low stress, 125(59.8%) have Moderate stress and only 2(1.0%) have High stress, changes in sleep quality were observed in 21(25.6%) who were having PSQI score of ≥ 5 , rest 61(74.4%) had PSQI score < 5 and out of 125 parents having moderate stress, changes in sleep quality were observed in 62(49.6%) who were having PSQI ≥ 5 , rest 63(50.4%) PSQI was < 5 and 2 parents having high stress had PSQI was ≥ 5 . This indicate that when stress has increased, quality of sleep become poor. **Conclusion-** This study assessed the PERCEIVED STRESS levels and sleep quality of parents of school going children during the COVID-19 pandemic period and influential factors. This indicates that when stress has increased, the quality of sleep becomes poor.

KEYWORDS

PSS- Perceived Stress Scale, PSQI- Pittsburgh sleep Index

INTRODUCTION

World Health Organization (WHO) declared COVID 19 as a pandemic on 11 March 2020¹.

In India, The first case of COVID-19 was reported on January 30, 2020 in Thrissur district of Kerala and the patient, a student of Wuhan University, China.

A nationwide lockdown was imposed on March 24, 2020 for three weeks up to April 14, and was later extended until the end of June².

To prevent the spread of the virus, various measures like social distancing, closing schools, universities, and office lockdown were initiated³.

The closure of kindergartens and schools as a measure to maintain social distancing during the COVID-19 crisis has a marked impact on the life of children and their parents (Golberstein et al., 2020; Wang et al., 2020b), especially for families of young children, who need consistent care⁴.

Some parents have had to combine their work activities with household responsibilities and home-schooling their child/children, and many might be experiencing anxiety about their jobs and financial instability⁵.

Inability to cope with goals and responsibilities often leads to stress. Stresses in day-to-day life can be seen in neurological and physiological reactions when adapting to new conditions. Numerous stressors can impact the well-being of Parents. Apart from coping with day-to-day stressors, people should deal with stressors specific to pandemic in terms of the heavy curriculum which should be covered within a stipulated duration, long working hours, lack of recreation, fear of losing job, financial concerns, and competition with peers⁶.

Perceived stress is a major obstacle to sleep and erodes sleep quality. Specifically, the higher the perceived stress, the worse the sleep quality, and the reduction in perceived stress predicted an improvement in sleep quality⁷.

Sleep research shows linkages between sleep quality and perceived stress as well as Sleep quality and positive and negative affect, whereas poor sleep accentuates negative effects e.g., anger or nervousness and inhibits positive emotions, good sleep promotes positive effects e.g.,

interest or attentiveness and protects against negative emotions, positive emotions themselves also protect the individual from the harmful consequences of stress⁸.

COVID 19 pandemic affected the family life of people so much and affected their sleep, but not much is known about this. There is paucity of published research in stress and sleep disturbances of parents of school going children during COVID 19 pandemic available from India. So, the present study has been undertaken.

AIMS AND OBJECTIVES

The present study was aimed to evaluate the prevalence of changes in sleep quality and perceived stress and also to see the effect of perceived stress on sleep quality among parents of school going children.

MATERIALS AND METHODS

Study Design And Setting

It was a cross-sectional study that was conducted among parents of school going children to fulfill above aims at a private school in district Kurukshetra, Haryana.

Before starting the study, approval of the institutional ethical committee and from the school was taken.

Sample Size

209 parents of children aged between 3-18 years who gave informed consent were included. Parents having 1 or more than 1 child were included.

Study Period

The study was conducted from March 2021-April 2021.

Study Tools

The socio-demographic details were collected on the proforma designed for the present study. The changes in sleep quality was assessed using the Pittsburgh sleep index and perceived stress was assessed using perceived stress scale respectively.

The Pittsburgh sleep Index was used to assess the sleep quality and patterns. The PSQI consists of 19 self-rated questions and five questions rated by the bed partner or roommate. The latter five questions are used for clinical information only, are not tabulated in the scoring of the PSQI. The 19 self-rated questions assess a wide variety of factors relating to sleep quality, including estimates of sleep

duration and latency and of the frequency and severity of specific sleep-related problems. These 19 items are grouped into seven component scores, each weighted equally on a 0-3 scale. The seven component scores are then summed to yield a global PSQI score, which has a range of 0-21; higher scores indicate worse sleep quality. A global PSQI score > 5 provided a sensitive and specific measure of poor sleep quality, relative to clinical and laboratory measures.

Perceived Stress Scale-

It is a self-reported questionnaire that was designed to measure "the degree to which individuals appraise situations in their lives as stressful". There are three versions of the PSS.

PSS 10 was used in this study. The PSS-10 measures the degree to which one perceives aspects of one's life as uncontrollable, unpredictable, and over-loading. Participants are asked to respond to each question on a 5-point Likert scale ranging from 0 (never) to 4 (very often), indicating how often they have felt or thought a certain way within the past month. Scores range from 0 to 40 with higher composite scores indicative of greater perceived stress.

Total mean scores of 0–13 are considered to be low stress, 14–26 indicate moderate stress, and 27–40 indicate high stress.

DATA COLLECTION

Informed consent, questionnaires and sociodemographic proforma have been explained to the teachers and to the parents and sent to the parents at their residence to provide all the details via school.

Those who did not provide the informed consent were excluded from the study.

Statistical Analysis

Information so gained and data so collected were subjected to suitable statistical analysis (One Way ANOVA, Student 't' test and Karl Pearson Coefficient of Correlation) using SPSS 20 software and conclusions were drawn. Results of the study have been depicted below.

RESULTS

Table 1- Sociodemographic Profile Of Parents Of School Going Children.

AGE (IN YEARS)	Frequency	Percentage (%)
21-30	5	2.4
31-40	111	53.1
41-50	87	41.6
51-60	4	1.9
>60	2	1.0
SEX		
Male	103	49.3
Female	106	50.7
RELIGION		
Hindu	170	81.3
Muslim	4	1.9
Others	35	16.7
EDUCATION		
10th	36	17.2
12th	53	25.4
Graduate	61	29.2
Post Graduate	46	22.0
Others	13	6.2
MARITAL STATUS		
Married	201	96.1
Divorced	2	1.0
Widow/Widower	6	2.9
LOCATION OF RESIDENCE		
Urban	134	64.1
Rural	73	34.9
Others	2	1.0
TYPE OF FAMILY		
Nuclear	95	45.5
Joint	109	52.2
Other	5	2.4
AVERAGE MONTHLY INCOME		
<20900	81	38.8
20-40000	76	36.4

41-60000	21	10.0
61-80000	18	8.6
>80000	13	6.2
NUMBER OF CHILDREN		
1.0	59	28.2
2.0	120	57.4
3.0	23	11.0
>3	7	3.3
AGE OF CHILDREN		
3-5 YEARS	10	4.8
6-10 YEARS	14	6.7
11-14 YEARS	80	38.3
15-18 YEARS	105	50.2
CLASS OF CHILDREN		
Nursery - 2nd	11	5.3
3rd - 5th	7	3.3
6th-10th	150	71.8
11th-12th	41	19.6
RELATION WITH CHILDREN		
Mother	106	50.7
Father	103	49.3

Table-1 shows the socio-demographic profile of all the participants. In our study out of 209 parents maximum 111(53.3%) were in the age group 31-40 years. Out of 209 parents, 106 (59.7%) were female and 103 (49.3%) were male.

Most of them were hindus 170 (81.3%); 61 (29.2 %) graduated, 201 (96.1%) were married; 134 (64.1%) belonged to urban areas. Most of them were living among joint families 109 (52.2%). Among them, 81 (38.8%) described their family income <20900. Most of them, 120 (57.4%) were having 2 children, among which 150 (71.8%) belonged to the class group between 6th-10th. Among all the 209 participants, 106 (50.7%) were mothers and 103 (49.3%) were fathers.

Table 2 - Prevalence Of Perceived Stress Among Parents Of School Going Children.

PSS	Frequency	Percentage (%)
Low stress	82	39.2
Moderate stress	125	59.8
High stress	2	1.0
Total	209	100.0

Table 2 shows that out of 209 Parents 82(39.2%) have Low stress, 125(59.8%) have Moderate stress and only 2(1.0%) have High stress.

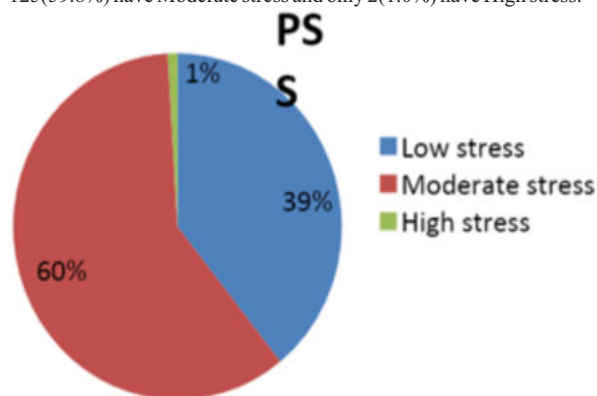


Table 3 - Prevalence Of Changes In Sleep Quality Among Parents Of School Going Children.

PSQI	Frequency	Percentage (%)
< 5	124	59.3
≥ 5	85	40.7
Total	209	100.0

Out of 209 parents, changes in sleep quality were observed in 85 (40.7%) who were having PSQI score of ≥ 5 , rest 124 (59.3%) participants had PSQI score < 5 , as shown in table 3.

Out of 209 Parents 82(39.2%) have Low stress, 125(59.8%) have Moderate stress and only 2(1.0%) have High stress, changes in sleep quality were observed in 21(25.6%) who were having PSQI score of ≥ 5 , rest 61(74.4%) had PSQI score < 5 and out of 125 parents having

moderate stress, changes in sleep quality were observed in 62(49.6%) who were having PSQI ≥ 5 , rest 63(50.4%) PSQI was < 5 and 2 parents having high stress had PSQI was ≥ 5 . This indicate that when stress has increased, quality of sleep become poor.

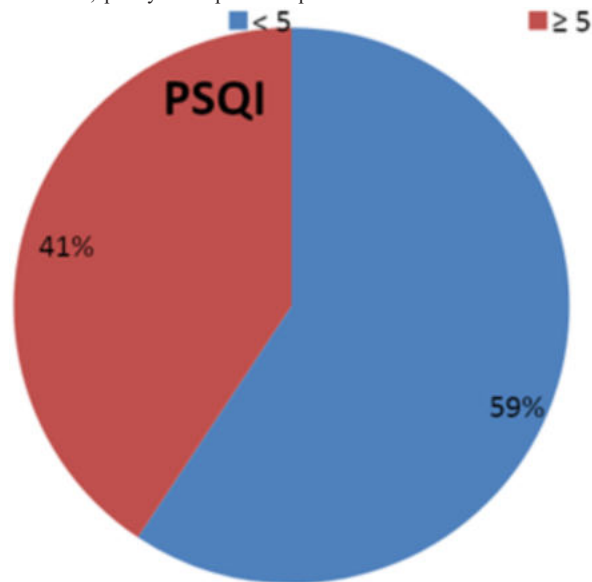


Table 4 - Effect Of Perceived Stress On Sleep Quality Among Parents Of School Going Children.

	PSQI		
	< 5 (N=124)	≥ 5 (N=85)	Total
PSS			
Low stress	61(74.4%)	21(25.6%)	82(100%)
Moderate stress	63(50.4%)	62(49.6%)	125(100%)
High stress	0(0%)	2(100%)	2(100%)



Table-5 Sleep Quality Among Par-ents Of School Going Children At Different Variables.

	PSQI		Total	P-Value
	< 5 (N=124)	≥ 5 (N=85)	(N=209)	
	NO(%)	NO(%)	NO(%)	
AGE (IN YEARS)				
21-30	2(40.0)	3(60.0)	5(100.0)	0.743#
31-40	70(63.1)	41(36.9)	111(100.0)	
41-50	49(50.0)	38(43.7)	87(100.0)	
51-60	2(50.0)	2(50.0)	4(100.0)	
>60	1(50.0)	1(50.0)	2(100.0)	
SEX				
Male	63(61.2)	40(38.8)	103(100.0)	0.588#
Female	61(57.5)	45(42.5)	106(100.0)	
EDUCATION				
10th	17(47.2)	19(52.8)	36(100.0)	0.349#
12th	33(62.3)	20(37.7)	53(100.0)	
Graduate	41(67.2)	20(32.8)	61(100.0)	
Post Graduate	25(54.3)	21(45.7)	46(100.0)	
Others	8(61.5)	5(38.5)	13(100.0)	
TYPE OF FAMILY(N/J/O)				
Nuclear	61(64.2)	34(35.8)	95(100.0)	0.252#
Joint	61(56.0)	48(44.0)	109(100.0)	
Other	2(40.0)	3(60.0)	5(100.0)	
CLASS OF CHILDREN				

Nursery - 2nd	6(54.5)	5(45.5)	11(100.0)	0.012*
3rd-5th	2(28.6)	5(71.4)	7(100.0)	
6th-10th	99(66.0)	51(34.0)	150(100.0)	
11th-12th	17(41.5)	24(58.5)	41(100.0)	
RELATION WITH CHILDREN				
Mother	61(57.5)	45(42.5)	106(100.0)	0.594#
Father	63(61.2)	40(38.8)	103(100.0)	

#, statistically not significant, *statistically significant.

DISCUSSION-

In our study out of 209 parents maximum 111(53.3%) were in the age group 31-40 years. Out of 209 parents, 106 (59.7%) were female and 103 (49.3%) were male.

Most of them were hindus 170 (81.3%); 61 (29.2 %) graduated, 201 (96.1%) were married; 134 (64.1%) belonged to urban areas. Most of them were living among joint families 109 (52.2%). Among them, 81 (38.8%) described their family income < 20900 . Most of them, 120 (57.4%) were having 2 children, among which 150 (71.8%) belonged to the class group between 6th-10th. Among all the 209 participants, 106 (50.7%) were mothers and 103 (49.3%) were fathers. The Perceived Stress Scores were found to be higher among the male participants than the female participants. Additionally, gender was included among the factors predicting Perceived Stress in the regression analysis. A study conducted in an Argentine population found that 62.4% of the participants showed symptoms of psychological distress (Badellino et al., 2020). Xiong et al. (2020) determined the rate of psychological distress in the general population to be from 34.43% to 38%.

In our present study of 209 Parents 82(39.2%) have Low stress, 125(59.8%) have Moderate stress and only 2(1.0%) have High stress. Our present findings are consistent with previous studies demonstrating significant links between maternal and child sleep quality (Tikotzky et al., 2015). The finding of generally heightened stress is in line with previous studies indicating the negative consequences of crisis events on parenting (Conger & Elder, 1994).

In our study of 209 parents, changes in sleep quality were observed in 85 (40.7%) who were having PSQI score of ≥ 5 , rest 124 (59.3%) participants had PSQI score < 5 . In the study by Targa et al. (Targa et al., 2020) which compared the mean PSQI scores of adults before COVID-19 and in the pandemic period reported that sleep quality worsened (5.45 ± 3.14 to 6.18 ± 3.03). Xiao et al. (2020a, 2020b) showed that the reduction in the sleep quality of individuals in central China who were confined at home for 14 days was related to an increase in anxiety and stress (Xiao et al., 2020a). In our study of 209 parents 82(39.2%) have Low stress, 125(59.8%) have Moderate stress and only 2(1.0%) have High stress, changes in sleep quality were observed in 21(25.6%) who were having PSQI score of ≥ 5 , rest 61(74.4%) had PSQI score < 5 and out of 125 parents having moderate stress, changes in sleep quality were observed in 62(49.6%) who were having PSQI ≥ 5 , rest 63(50.4%) PSQI was < 5 and 2 parents having high stress had PSQI was ≥ 5 . This indicate that when stress has increased, quality of sleep become poor. In this study, a significant relationship was found between sleep quality (including subjective sleep quality, sleep duration, sleep latency, sleep disturbances and general self-assessed sleep quality) and Perceived Stress. There was no significant relationship between the habitual sleep efficiency and sleep quality of the adult participants.

CONCLUSION

This study assessed the Perceived Stress levels and sleep quality of parents of school going children during the COVID-19 pandemic period and influential factors. This indicates that when stress has increased, the quality of sleep becomes poor. In this study, a significant relationship was found between sleep quality (including subjective sleep quality, sleep duration, sleep latency, sleep disturbances and general self-assessed sleep quality) and Perceived Stress. This indicates that when stress has increased, the quality of sleep becomes poor. The Perceived Stress Scores were found to be higher among the male participants than the female participants.

REFERENCES

- World Health Organization, Coronavirus disease outbreak situation. 2020. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>. Ref intro 1
- Naqvi HR, Datta M, Mutreja G, Siddiqui MA, Naqvi DF, Naqvi AR. Improved air quality and associated mortalities in India under COVID-19 lockdown. Environmental

- Pollution. 2021 Jan 1;268:115691. Refintro 2
3. **Sarkar K, Khajanchi S, Nieto JJ.** Modeling and forecasting the COVID-19 pandemic in India. *Chaos, Solitons & Fractals*. 2020 Oct 1;139:110049. Refintro 3.
 4. **Zreik G, Asraf K, Haimov I, Tikotzky L.** Maternal perceptions of sleep problems among children and mothers during the coronavirus disease 2019 (COVID-19) pandemic in Israel. *Journal of sleep research*. 2021 Feb;30(1):e13201. Refintro 4.
 5. **Baptista AS, Prado IM, Perazzo MF, Pinho T, Paiva SM, Pordeus IA, Serra-Negra JM.** Can children's oral hygiene and sleep routines be compromised during the COVID-19 pandemic *International journal of paediatric dentistry*. 2021 Jan;31(1):12-9. Refintro 5.
 6. **Clevin Rashmi Rebello, Prasad Budri Kallingappa, Preethi G. Hegde;**Assessment of perceived stress and association with sleep quality and attributed stressors among 1st-year medical students: A cross-sectional study from karwar, Karnataka, India; *Tzu Chi Medical Journal* 2018; 30(4): 221-226 refintro 6.
 7. **Zhao X et al.,** Perceived stress and sleep quality among the non-diseased general public in China during the 2019 coronavirus disease: a moderated mediation model, *Sleep Medicine*, <https://doi.org/10.1016/j.sleep.2020.05.021> refintro 7.
 8. **Jessica M. Blaxton, Cindy S. Bergeman, Brenda R. Whitehead, Marcia E. Braun, and Jessie D. Payne;**Relationships Among Nightly Sleep Quality, Daily Stress, and Daily Affect; *Journals of Gerontology: Psychological Sciences* cite as: *J Gerontol B Psychol Sci Soc Sci*, 2017, Vol. 72, No. 3, 363–372 refintro 8.