

## Original Paper

# Sleep Disturbance and Quality of Life among Nursing Students in the Post - COVID-19 Pandemic Era

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## ABSTRACT

*In the past few years after the declaration of COVID-19 as global health emergency, several epidemiological investigations have been carried out to explore the prevalence and correlates of sleep disturbances in clinical and nonclinical samples. However with respect to their impact on well being of health care students, the prevalence of sleep disturbances in nursing students and its influence on Quality of Life (QoL) has been documented in very few studies. Sleep-related problems are widespread concerns among higher education students, especially medical and nursing students. Since this population is at high risk for developing sleep-related disturbances the current study was aimed at examining sleep disturbances among nursing students without coexistent psychiatric symptomatology. The study was conducted at Tirupati Nursing College in Udaipur city of Rajasthan state. The PROMIS Sleep Disturbance and WHOQOL-BREF instruments were utilized to identify the high-risk nursing students who are less likely to seek mental health services for their sleep-related problems. This was a cross-sectional e-survey research that utilized a correlational research design for the sample of 509 nursing students. The study shows high prevalence and a robust association between sleep related disturbances and poorer Quality of Life (QOL). Physical health ( $r = -0.207$ ,  $p < 0.01$ ) and psychological health ( $r = -0.112$ ,  $p < 0.05$ ) domains of QOL were found to have negative correlation with Sleep disturbance.*

**KEYWORDS:** COVID-19, Sleep disturbance, Quality of Life, Nursing education

## INTRODUCTION

Sleep as being a basic fundamental instinct; sleep-related problems are generally experienced in all phases of human life<sup>1</sup>. Maintaining a good quality of sleep health is considered to be a very important aspect of our life. The majority of studies on sleep-related disorders and their determinants have shown considerable variability across countries. Sleep disturbances are a common concern of students of higher education which may have a negative influence on their day-to-day functioning, academic performance, and overall well-being<sup>2,3</sup>. Considerable studies worldwide have found that nocturnal sleep problems and resulting daytime drowsiness or sleepiness are also found to be common among healthcare students<sup>4,5</sup>. Additionally, numerous findings have also shown stress as one of the most important issues leading to sleep difficulties reported among medical and paramedical students globally<sup>6-8</sup>.

Nursing education and training generally encompass vast curricula, numerous types of degree-fulfilling parameters, and examinations which can lead to a stressful environment for most students<sup>8,9</sup>. Consequently, these students tend to compromise with their regular sleep patterns in an effort to deal with their academic workload. Its prevalence is estimated higher than other college students and the general population<sup>10,11</sup>. Recently, the widespread effect of the COVID-19 pandemic has transformed the lifestyles and routines of the majority of healthcare university students which has led to changes in their learning and sleep patterns<sup>12</sup>. Furthermore, it was also noticed that their sense of clinical and moral responsibility with strong desire to help the affected people buffered by their ability to see the overwhelming condition as a learning opportunity<sup>13</sup>. However, there is very limited literature about sleep disturbances in nursing students in the post-COVID-19 situation. Furthermore, the prevalence of sleep disturbance in nursing students also differs greatly across countries<sup>10,14</sup>. Reasons may be manifold that are thought to account for the high prevalence in nursing students, including many hours for academic schedules with duties of night shift due to hospital or clinical internships, psychological stress, and excessive use of internet in social media<sup>15-18</sup>. Recent studies have also reported that significant sleep problems among medical and nursing students interfere with their academic performance, mental health, and well-being<sup>14,16,19</sup>.

Nursing students represent the largest group of healthcare education and training who are frequently exposed to a significant level of stress due to the extensive academic curriculum resulting in sleep disturbances. Hence, they tend to experience increased levels of stress and related sleep disturbances than other groups of students<sup>20</sup>. Additionally, these problems are found to be highly correlated with low academic performance and poor QoL outcomes among them<sup>4,21</sup>. Maintaining good sleep health is a very crucial aspect of our life leading to a better quality of life in a person<sup>22</sup>. Healthcare students report significantly poor QoL in association with sleep disorders than the general population. Almost a decade back in a study, the prevalence of sleep problems was found to be 26.7% which increased significantly with age ranges<sup>23</sup>. Another

study revealed poor sleep quality in this population which was found to be correlated with low academic performance and daily functioning. Daytime drowsiness is also found to be correlated with sleep disturbances, clinical duties and overall academic performance<sup>24</sup>. Concerning the association between sleep disorders and QoL, poorer QoL has also been considered to be a major correlate in sleep-related disorders<sup>21,25</sup>. However, the extent to which sleep disturbances lead to poorer QoL among nursing students is not well documented in the Indian literature. Furthermore, despite having a high prevalence and its significant effect on causing severe mental health-related consequences, it has not yet been well documented in the majority of the existing research concerning nursing students' mental health, especially in the Indian context.

## Methods

This was a cross-sectional study conducted between the months of September and November in the year 2022 at Tirupati Nursing College, Udaipur (Raj.). The sample was taken from local nursing students with the age ranges from 17 to 40 years. NRI students, presence of any disabling condition, neurological and psychiatric disorders were excluded from the study. Approval for our research protocol was taken by the Research & Ethics Committee of the institute. Statistical Package for Social Sciences (SPSS) for Windows was utilized to analyze the obtained data. Descriptive statistics were conducted for the socio-demographic variables of the study. Frequencies, percentages, means and standard deviations were conducted for the variables. Correlation was also performed to examine the relationship between sleep disturbance and QOL variables.

## Results

In total, 514 nursing students at Tirupati Nursing College, Udaipur city of Rajasthan state were invited and 509 students gave consent to participate in the present study. The age of the participants ranges from 17 years to 40 years with an average age of 20.19 ( $\pm$  2.972) years. In the present study, the prevalence rate of sleep problems was found to be 16.8%. Table 1 shows the various characteristics of the respondents indicating that the majority of students were male (74.7%), and belong to the age group of 18 to 22 year age group (84.8%). The table further shows that the majority of the participants were found to be pursuing a GNM degree (71.5%) followed by higher education degrees of graduation (24%) and post-graduation (4%) in nursing. With respect to the marital status characteristic, only 6.1% of participants were married. 17.4% of nursing students were found to have a medical history of long-term diseases. In our study, it was surprising to find that despite being in a healthcare service course, none of the nursing students received any psychological service for their sleep problems.

Table 2 reveals the scores of PROMIS, four domains of QOL and overall QOL. The mean scores of sleep disturbance and overall QoL were found to be 18.00 ( $\pm$  5.42) and 53.97 ( $\pm$  9.89)

respectively. Comparing all the variables of QoL among the nursing students, the Psychological QoL domain was found to be the most affected one with a mean score of 44.70 ( $\pm$  7.91) while the Environmental QoL domain was found to be the least affected domain with a mean score of 37.86 ( $\pm$  6.80). Table 3 reveals that among the four subscales of WHOQOL BREF, only two domains i.e. physical health ( $r = -0.207$ ,  $p < 0.01$ ) and psychological health ( $r = -0.112$ ,  $p < 0.05$ ) were found to have a

significantly negative correlation with PROMIS Sleep scores. Additionally, a negative correlation was also observed between sleep disturbance and overall scores of quality of life ( $r = -0.352$ ,  $p < 0.01$ ). Table 2 further revealed that poor quality of life was significantly associated with sleep problems. Hence the correlation analysis reveals that sleep disturbance negatively affected the physical health, psychological and overall QoL in the nursing students.

**Table 1:** Socio-demographic Characteristics of the Studied University Students (N = 637)

Characteristics	Group	Percentage (%)
Age range (Years)	18 - 22	84.8
	23 & above	15.2
Sex	Male	74.7
	Female	25.3
Marital Status	Married	6.1
	Unmarried	93.9
Nursing Degree	GNM	71.7
	B.Sc.	24.1
	M.Sc. & above	4.2

**Table 2:** Descriptive Statistics of PROMIS Sleep and WHOQOL-BREF Subscales Scores

Scores	N	Minimum	Maximum	Mean	Standard Deviation
PROMIS Sleep	509	7	36	18.00	5.425
Physical Health QoL	509	25	69	40.24	7.526
Psychological QoL	509	25	69	44.70	7.911
Social Relationships QoL	509	25	63	37.86	8.455
Environmental QoL	509	25	56	37.86	6.804
Overall QoL	509	40	81	53.97	9.896

**Table 3:** Pearson correlations (WHOQOL BREF subscales with PROMIS Scores)

	<i>r</i>
Physical	-0.207**
Psychological	-0.112*
Social relationships	-0.010
Environment	-0.020
Overall QoL	-0.352 **

\*\* Correlation is significant at 0.01 level (2-tailed)

\* Correlation is significant at 0.05 level (2-tailed)

## DISCUSSION

Sleep-related disturbances among nursing students are increasingly being recognized as an important concern and the prevalence of the problem among these students is significant. Nursing students are considered future frontline health workers and given the negative consequences associated with sleep problems among nursing students, the findings of the present study warrants immediate preventive measures for these students. Furthermore, considerable research evidence has also shown its negative association with QoL requiring an immediate solution for this concern which may promote a better learning opportunity and QoL among them. The present study examined sleep disturbance and its association with QoL among the students of Tirupati Nursing College, Udaipur nursing students. In our study, the prevalence of sleep disturbance (16.8%) in our participants was found to be lower than the other similar previous research investigations on nursing students<sup>10,26-28</sup>. However as compared to previous studies, the prevalence of sleep disturbance is indeed lower in our participants, this may be due to various socio-cultural, demographic, and research methodological variables.

Furthermore, the successful adaptation to the recently faced COVID-19 pandemic situation with emerging new government health policies could probably lead to these variations in prevalence rates. A recent systematic review and meta-analysis carried out by Mulyadi and his colleague<sup>10</sup> found that during the COVID-19 pandemic situation, the prevalence rate of sleep disturbances was found to be 27% among nursing students. Additionally, gender differences in sleep disturbance have also been documented revealing increased levels of sleep problems among female nursing students which were attributed to their potential hormonal changes<sup>29-30</sup>.

The findings further revealed that the sleep problem in nursing students had a significantly negative association with physical health and psychological domains of QoL and these findings are consistent with those revealed by other similar studies<sup>31-32</sup>. However, QoL findings among nursing students tend to vary across countries<sup>33</sup>. For example, one recent research findings

revealed that the relationship of chronotype to nursing students' sleep status was significantly associated with health-related quality of life<sup>20</sup>. Nevertheless, the present study findings suggest the implementation of various strategies including promotion of mental health services, providing adequate support and timely implementation of paradigm shifts in training module which would make them capable of responding to future overwhelming situations and health crises. Despite the significant results, the study has several strengths and limitations. Firstly the present study is cross-sectional in nature requiring well-experimentally designed studies to establish cause-effect relationships with longitudinal data. Secondly, the study did not include and control for all the socio-demographic variables of interest. Thirdly, the utilization of a well-established and validated tool to measure the types and severity of sleep disorders would have strengthened the present study. Finally, the generalization of our study findings is limited because the study sample was taken from only one nursing college with mostly male participants which warrant the strong need for replication of this kind of study in a diverse nursing student population. Additionally, not utilizing the random sampling method and the reliance on self-report measures for our study pose a significant methodological limitation for the generalization of our findings.

**CONFLICT OF INTEREST:** None

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