

# ASSOCIATION OF SLEEP QUALITY WITH STRESS, ANXIETY AND DEPRESSION LEVELS IN PATIENTS WITH TEMPOROMANDIBULAR DISORDERS

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## ABSTRACT

### **Introduction**

*This study aimed to examine the association between sleep quality, depression, anxiety and stress levels, and the frequency of temporomandibular disorders*

### **Materials and methods**

*Fonseca Anamnestic Index (FAI), Pittsburgh Sleep Quality Index (PSQI), and Depression Anxiety Stress Scale-21 (DASS-21) were used in the present study.*

### **Result**

*A survey was conducted among 100 students, of which 54 females and 46 males participated. Of the participants more than 50 % of people with sleep disorders, stress, anxiety and depression have TMD disorders.*

### **Conclusion**

*There was a significant increase in the TMD of participants with altered sleep quality and increased stress depression and anxiety levels*

## INTRODUCTION

Temporomandibular joint turmoil (TMD) is normally by torment in the temporomandibular region and related masticatory muscles, restrictions in jaw capability, and temporomandibular joint (TMJ) sounds during jaw development.<sup>[1]</sup> A few examinations in various populaces show a boundless variety in TMD predominance and TMD side effects. This might be brought about by various review plans, estimation instruments, and various strategies to decide the presence of TMD. Fonseca's Anamnestic List (FAI) is regularly used to analyze TMD in a non-patient populace since it is dependable and simple to apply.<sup>[2]</sup> The etiology of TMD is known as multifactorial. Studies have demonstrated that unfortunate stance, stress and nervousness levels, and rest problems are among the gamble factors for TMD. Patients' wellbeing status and personal satisfaction can be impacted by unfortunate rest quality, which can be an etiological variable in TMD patients.<sup>[3]</sup> A few investigations have detailed a connection among TMD and rest issues. The Pittsburgh Rest Quality Record (PSQI) is principally used to assess emotional rest quality<sup>[4]</sup>

### FAI<sup>[5]</sup>

The FAI was created to analyze TMD as indicated by people's signs and side effects. This list comprises of 10 inquiries with three reaction choices: "yes" (10 focuses), "once in a while" (5 places), and "no" (0

focuses). The still up in the air for the accompanying orders: nonappearance of signs and side effects of TMD (0-15 focuses),

gentle TMD (20-45 focuses), moderate TMD (50-65 focuses), and serious TMD (70-100 focuses)

PSQI<sup>[6]</sup>

The PSQI incorporates seven parts: abstract rest quality, rest dormancy, rest length, rest efficiency, rest aggravation, utilization of rest prescriptions, and daytime brokenness. The score for every subgroup goes from 0 to 3. The amount of these scores yields one worldwide score of subjective rest quality (range: 0-21). The rest nature of those with an all out score of  $\leq 5$  is thought of "good" and those  $>5$  is "poor"

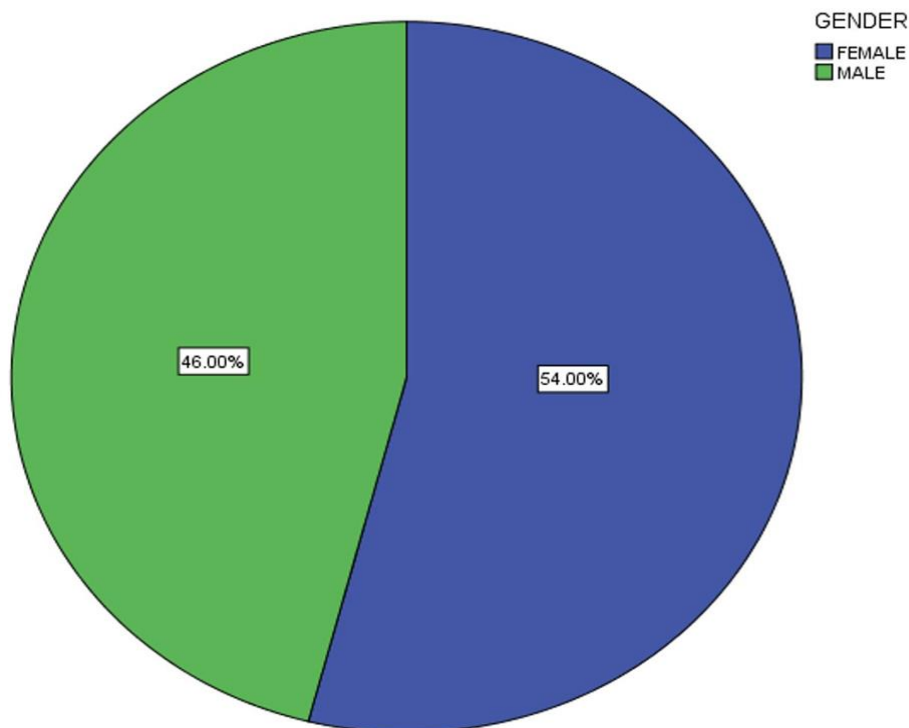
DASS<sup>[7]</sup>

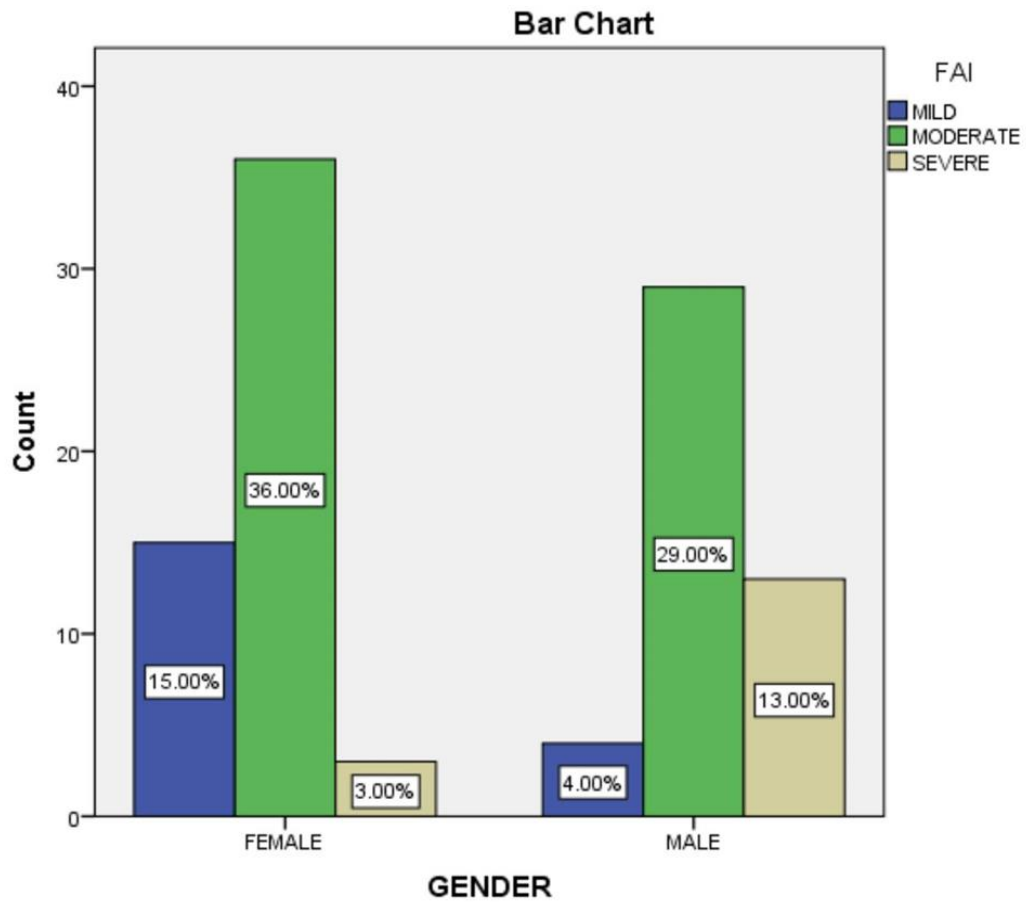
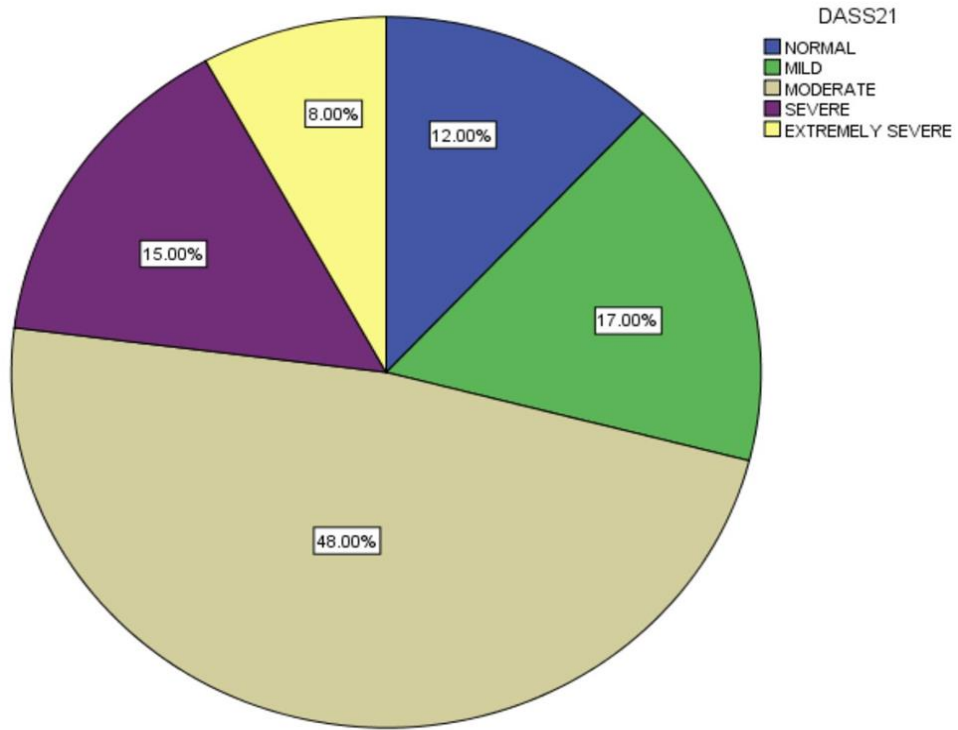
The DASS-21 scale, recommended by the Australian Mental Affiliation, comprises of three self-report scales intended to quantify the profound conditions of sorrow, uneasiness, and stress. Every one of the three scales contains 7 things, partitioned into subscales with comparative substance. This scale is utilized to decide the degree of pessimistic profound states determined. Psychometric properties of the DASS-21 scale and other reasonableness with tests has been illustrated.

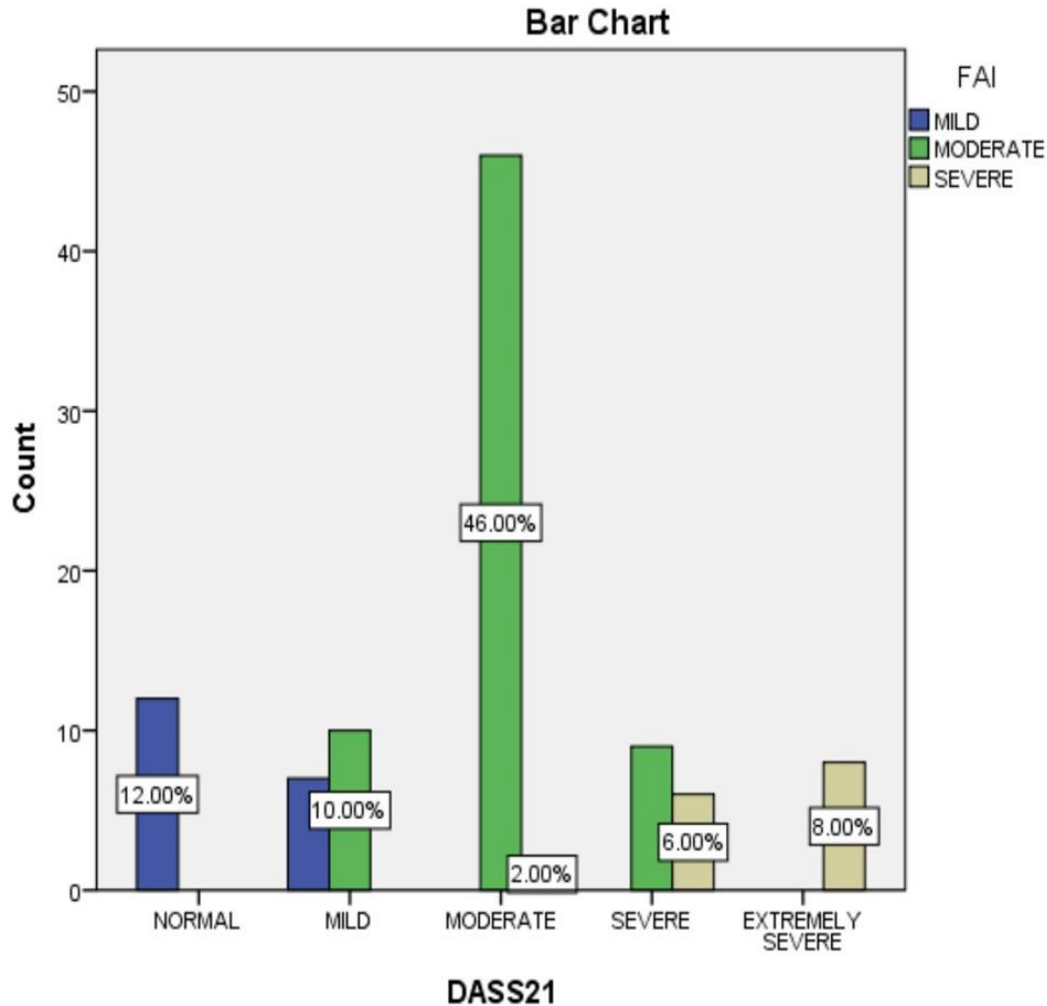
## MATERIALS AND METHODS

Dental students from Saveetha University were the participants in this study. The study was performed in a university setting. The Fonseca Anamnestic Index (FAI) was used to diagnose temporomandibular disorders. The English version of the Pittsburgh Sleep Quality Index (PSQI) was used to assess sleep quality; the Depression Anxiety Stress Scale-21 (DASS-21) was used to assess depression, stress, and anxiety levels.

### Graphs







## RESULTS AND DISCUSSION

Based on the results of the study, there is a significant correlation between the DASS21 scale and the FAI scale and the PSQI scale in direct proportionality as an increase in the severity of the condition is directly related to the increase in the temporomandibular disorders.<sup>[8]</sup>

The findings of the present investigation offer epidemiological support for a link between TMD, sleep quality, and pandemic depression, anxiety, and stress levels. The effects of lockdown, altered sleep patterns, and elevated levels of melancholy, anxiety, and stress may all work together to significantly harm sleep, which is especially true for healthcare workers who must put in long hours in demanding settings. People's sleep habits have significantly changed under lockdown, with later bedtimes and earlier rise times, as well as prolonged time in bed. A higher level of despair, worry, and stress is brought on by the disrupted sleep patterns and sleep issues.<sup>[9]</sup>

The researchers noted that persons with a high PSQI global score, particularly students, had an elevated DASS-21 score, which is similar to the findings of the present study.<sup>[10](15)</sup> According to a study, making more social connections helped people feel less anxious and stressed, which led to better sleep during the COVID-19 viral epidemic. According to another study, sleep issues affected 12.5% of participants during the COVID-19 pandemic, and social media-related issues affected 36.4% of participants.<sup>[11](16)</sup> Additionally, the researchers emphasized the significance of the necessity for mental healthcare by emphasizing that a significant portion of participants' mental health should be preserved.<sup>[12](17)</sup>

But in this study, ladies scored much higher on the DASS-21 than did males. Additionally, the researchers found that younger people experienced higher levels of stress, anxiety, and sadness than older people did.<sup>[13]</sup> These values were also higher in single participants than in those in other relationship statuses. The results of the current study, which support those of earlier studies, were done mostly with young, single university students who scored higher on depression, anxiety, and stress scales. Studies utilizing the FAI have been reported in the literature with a TMD rate ranging from 42% to 73%. Variations in the quantity of samples used in the studies and the time period over which they were conducted, for example, may contribute to the heterogeneity in prevalence.<sup>[14]</sup> Our team has extensive knowledge and research experience that has translate into high quality publications(18-27)

### **CONCLUSION**

Within the limits of the study, increased temporomandibular joint disorders were observed with increased impaired sleep quality and higher depression, anxiety and stress levels among dental university students. The result is statistically significant as p value is less than 0.05. Further Extensive investigations are required to make a better association as a method of preventing TMJ disorders.

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### **AUTHOR CONTRIBUTIONS**

Nishanthana Murali contributed to data collection, analysis and interpretation and drafting of the article.

Dr. Sangavi R contributed to the critical revision of the article.

Dr. Adimulapu Hima Sandeep contributed to the statistical evaluation of the study

### **CONFLICT OF INTEREST**

No potential conflict of interest relevant to this article was reported.

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