

# Sleep Disorders in the Transitional Age Population During the COVID Pandemic

Akhil S. Pola MBBS, Ching-Fang Sun MD, Binx Yezhe Lin MD MSc, Anita S. Kablinger MD, CPI. Carilion Clinic-Virginia Tech Carilion School of Medicine, Roanoke, Virginia, USA

## Background

- COVID-19 pandemic caused many changes in learning/working while in-person activities became virtual.
- In particular, the transitional age group (15–26-year-olds) were experiencing multiple changes:
  - The transition from adolescent to adulthood
  - Social role change (e.g. from school to workplace)
- Environmental changes in learning/working style due to the pandemic may cause additional stress.
- Sleep disorders are related mental health comorbidities often associated with stress.
- We aim to investigate the estimated prevalence trend of sleep disorders in transitional age-group individuals during the pandemic.

## Methods

- Retrospective observational/epidemiology study
- Data base: TriNetX Research Network (a deidentified electronic medical record system includes information from 83 healthcare organizations, about 122 million people (80% in the US).
- **Investigated duration:** 2017-2022
- The **studied population:**
  - Individuals aged 15-26 with sleep disorders (ICD10-G47) and sleep disorders not due to a substance or known physiological condition (ICD10-F51).
- **Age group definitions:**
  - High school group: 15-17 years
  - College group: 18-21 years
  - Graduate group: 22-26 years
- **Cohorts:**
  - COVID cohort (study cohort) 2019-2022
  - Pre-COVID cohort (control cohort) 2017-2018

TABLE	COVID n (%)	Pre-COVID n (%)	p
<b>Total</b>	230,630 (100)	120,029 (100)	
Age, Mean Year (SD)	20.4 (3.5)	20.3 (3.41)	<0.01
<b>Sex</b>			
Male	100,968 (44)	58,140 (48)	<0.01
Female	129,522 (56)	61,845 (52)	<0.01
Unknown	140 (0)	44 (0)	<0.01
<b>Ethnicity</b>			
Non-Hispanic	153,478 (67)	81,319 (68)	<0.01
Hispanic	29,554 (13)	18,833 (16)	<0.01
Unknown	47,598 (21)	19,877 (17)	<0.01
<b>Race</b>			
White	138,623 (60)	71,856 (60)	0.17
Black of African American	36,413 (16)	20,997 (17)	<0.01
Asian	6,396 (3)	2,605 (2)	<0.01
American Indian or Alaska Native	1,424 (1)	746 (1)	0.88
Native Hawaiian or another Pacific Islander	717 (0)	313 (0)	<0.01
<b>Diagnosis</b>			
Anxiety, dissociative or stress related, somatoform and other non-psychotic mental disorder	130,180 (56)	60,521 (50)	<0.01
Mood disorder (affective disorder)	102,671 (45)	47,618 (40)	<0.01
Insomnia	88,702 (38)	42,097 (35)	<0.01
Sleep apnea	77,128 (33)	50,810 (42)	<0.01
Attention-deficit hyperactivity disorders	53,151 (23)	32,215 (27)	<0.01
Sleep disorders not due to a substance or known physiological condition	41,463 (18)	20,501 (17)	<0.01
Mental and behavioral disorders due to psychoactive substance use	32,669 (14)	14,663 (12)	<0.01
Hypersomnia	23,501 (10)	11,783 (10)	<0.01

## Results

- We identified 230,630 patients in the study cohort, 120,029 in the control cohort.
- Sleep disorders were more prevalent during the COVID pandemic (38% vs 35%,  $p < 0.01$ )
- Sleep apnea was more prevalent prior to the pandemic.

We did not receive any funding. We do not have any conflict of interest.

- Anxiety disorders, mood disorders, and substance use disorders were more prevalent during the pandemic (table).
- The graduate age group was affected the most highlighting the impact of the pandemic on their sleep (figure).

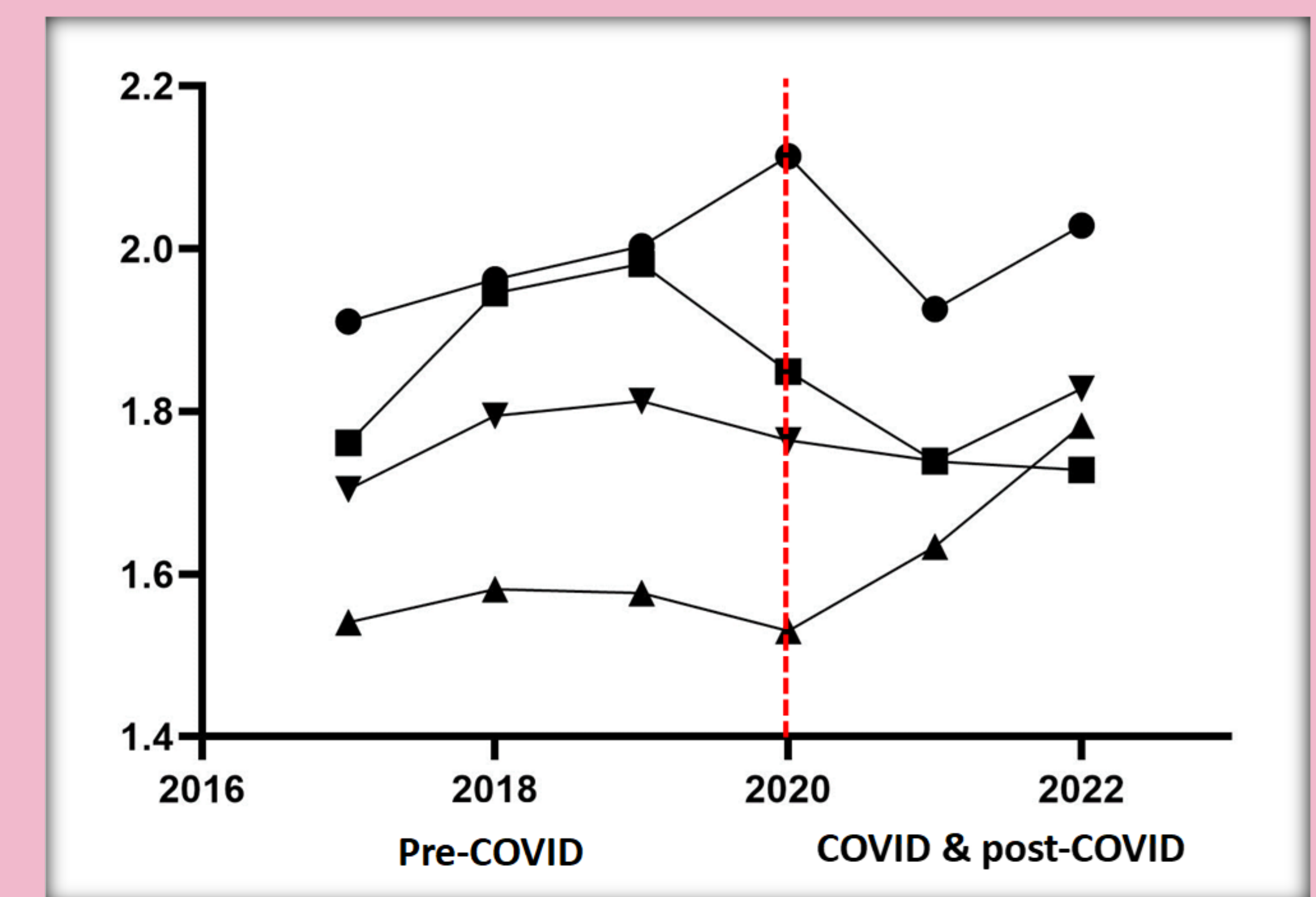


Figure. Percentage of estimated prevalence of sleep disorders and its trends in different age groups.

- High School
- College
- ▲ Graduate
- ▼ Total

## Conclusions

- There was an increase in the estimated prevalence of sleep disorders in the transitional age group during the COVID 19 pandemic.
- Further study is warrant to clarify the correlation between the increased estimated prevalence in psychiatric disorders and sleep disorders during the pandemic.

## Reference

Jones EAK, Mitra AK, Bhuiyan AR. Impact of COVID-19 on Mental Health in Adolescents: A Systematic Review. Int J Environ Res Public Health. 2021 Mar 3;18(5):2470.