

# BINGE WATCHING AMONG COLLEGE STUDENTS: AN EXPLORATION OF MOTIVES TO WATCH TV SERIES AND ANALYSIS OF INFLUENCE OF BINGE WATCHING ON SLEEP

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## Abstract

**Background:** Watching multiple episodes at one sitting using streaming devices like Netflix, Hotstar, Amazon prime etc. has become more prevalent in recent years. Ever since the COVID-19 pandemic, this behavior has been reportedly increasing in young adults. This attitude is because when all episodes of a season were released simultaneously by an online streaming service, it inspires widespread “marathon-viewing” sessions among the 18–34 years age group who initially binge-watched and later took themselves to social media to post their (seemingly positive) reviews of such series. This has a negative impact on various components of health including sleep quality. **Result:** The survey was conducted among college students. The total participants of this study were 352 students. The study results showed that, the prevalence of higher problematic binge watching was 51.7% and there is a positive association between higher problematic binge-watching behavior and poor sleep quality. The most common reason, which motivated binge watching was utilizing it to get relieved from stress. The factors which had statistically significant association with PSWS were duration of binge watching, frequency of binge watching, device used for binge watching and sleep quality. **Conclusion:** In recent years, binge watching has become increasingly popular in younger generation. Our research shows that binge watching is associated with anti-health behavior such as poor quality of sleep. Binge watching is adopted for stress relief, boredom and because of social influence. The study results conclude that binge watching is associated with poor sleep quality. This behavior is noticed more among students who binge watch for more than 6 hours a day and for more than 3 times a week.

## INTRODUCTION

In recent years, the use of on-demand entertainment services in India has significantly expanded with the emergence of new technologies. This trend has become more widespread among college students due to the increasing accessibility of media devices such as smartphones, laptops, televisions, and iPads. The COVID-19 pandemic has also played a role in this expansion, as more people are spending time indoors and seeking out ways to stay entertained. As a result, there has been a surge in the use of streaming platforms, which offer a convenient and affordable way to access a wide range of content.

Binge watching is defined as watching between two to six episodes in one sitting.<sup>[1]</sup> A different definition describes binge watching as watching three to four hours of TV programs nonstop in one sitting.<sup>[2]</sup> Binge-watching is a behavior that is becoming increasingly problematic. Excessive screen time, particularly from digital devices, can have harmful effects on physical health, such as obesity, as well as mental well-being and this behavior is associated with irritability and may have negative impacts on one's overall emotional state.<sup>[3, 4]</sup> It is often observed that when an entire series becomes available for streaming at once, students tend to watch all the episodes in a single

sitting. While this may provide a sense of instant gratification, it can lead to addictive behavior and contribute to excessive screen time. Additionally, this behavior may encourage students to be more active on social media, which can further contribute to addictive tendencies.<sup>[5]</sup>

The popularity of various streaming services such as Netflix, Amazon Prime, and Hotstar has made it easy for people to access a wide variety of content, including horror, thriller, romance, and comedy genres, at an affordable price. These services are available on-demand and can be accessed from anywhere, including offices, colleges, or dorms. People often watch these shows as a means of relaxation, boredom relief, and to escape from reality. In addition to these reasons, students may also binge-watch because of social influence, to fit in with their peers, and to alleviate feelings of loneliness.<sup>[6]</sup>

Sleep is a crucial factor for the normal functioning of every organ in the body. When a person experiences sleep deprivation, it can negatively impact their physical, social, and mental well-being.<sup>[7]</sup> Binge-watching can be an addictive phenomenon that often leads people to automatically continue watching "just one more episode," resulting in sleep deprivation. Poor sleep quality has been shown to have negative effects on cognitive function and emotional regulation. Previous studies have found that poor sleep quality is more prevalent among individuals who engage in binge-watching.<sup>[8-10]</sup> This study was done to explore the motives for binge watching, assess the influence of binge watching on sleep and to identify the factors associated with binge watching.

## **AIM**

To explore the motives of watching tv series and analyze the influence of binge watching on sleep.

## **Objectives**

1. To evaluate the prevalence of problematic binge watching in college students
2. To explore the motives to watch tv series in college students
3. To assess the association between binge watching and sleep.
4. To find the association between sociodemographic factors and binge watching.

## **METHODOLOGY**

A cross-sectional online survey was conducted using a Google Form, and the questions were shared via various social media platforms such as WhatsApp, Instagram, Gmail, and Telegram. The survey aimed to obtain information from college students enrolled in various courses at Saveetha University in Chennai. All data was collected digitally after obtaining informed consent from the participants. A total of 352 people participated in the survey. The questionnaire consisted of three sections. Section 1 included 10 questions related to socio-demographic details and binge-watching habits. Section 2 included 6 questions from The Problematic Series Watching Scale (PSWS), while section 3 included 19 questions from the Pittsburgh Sleep Quality Index (PSQI). Ethical approval for the study was obtained from the Institutional Human Ethics Committee.

## **Sociodemographic Details**

This section contained details like name, age, sex, college name. It also contains some basic questions related to binge watching like type of electronic device used, mode of medium preferred, what kind of genre they prefer to watch, how many times they binge watch per week and amount of time spent binge watching every day.

### **Binge Watching Addiction Questionnaire**

To measure problematic binge-watching behavior, the researchers used the validated Problematic Series Watching Scale (PSWS),<sup>[11]</sup> which is based on Griffiths' six-part addiction model. The PSWS measures addiction through salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. Scores on the PSWS range from 6 to 30, with higher scores indicating more problematic binge-watching behavior and lower scores indicating less problematic behavior. After calculating the PSWS scores, the median value was obtained and the participants were categorized into lower problematic binge watching (those who scored less than or equal to median value) and higher problematic binge watching (those who scored more than the median value).

### **Pittsburgh Sleep Quality Index**

The Pittsburgh Sleep Quality Index (PSQI)<sup>[12]</sup> is a validated scale used to evaluate sleep quality. It consists of 19 questions, divided into seven components, including subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction over the previous month. Each component is assigned a weight of 0 to 3, resulting in a single global score ranging from 0 to 21. Poor sleep quality is defined as a global PSQI score greater than 5.

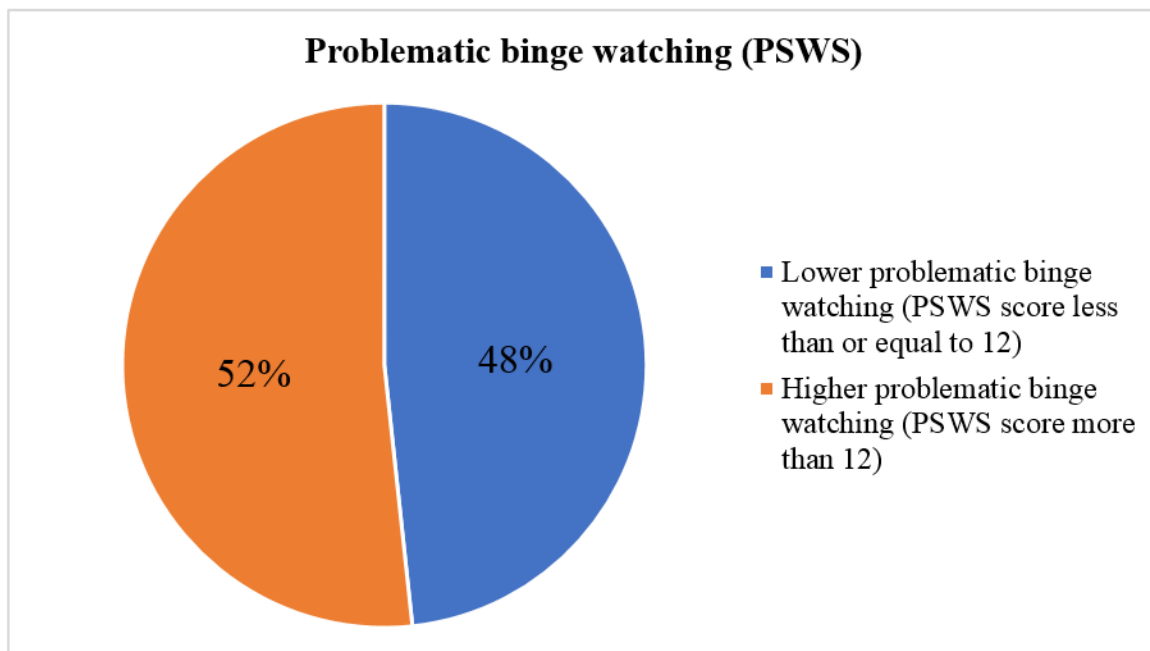
## **RESULTS AND OBSERVATION**

Table 1 displays the socio-demographic details of the students participated in the study. The mean age of the study participants was  $20.33 \pm 2.14$  ranging from 17 years to 37 years. Out of 352 participants, 57.1% were less than 20 years of age, 54% were females, 63.4% were day scholars and 55.4% were doing medical courses. Majority of them spent less than 2 hours per day (46%) and 1-2 times a week (58.8%) in binge watching. Around 71.6% of the participants used smartphone for binge watching and comedy was their most preferred genre. Watched same series more than once was the most common (33.8%) personal behavior related to binge watching. Around 46% of the study participants had poor quality of sleep based on PSQI scores. Figure 1 shows the distribution of study participants based on their problematic binge-watching category. Based on the PSWS, the prevalence of higher problematic binge watching (PSWS score more than 12) was 51.7%.

**Table 1: Socio-Demographic Details of the Study Participants**

Socio Demographic Details	Frequency (N=352)	Percentage (%)
<b>1. Age</b>		
Up to 20 years	201	57.1
More than 20 years	151	42.9
<b>2. Sex</b>		
Male	162	46.0
Female	190	54.0
<b>3. Type of stay</b>		
Hostel	129	36.6

Day scholar	223	63.4
<b>4. Type of course</b>		
Medical	195	55.4
Non-medical	157	44.6
<b>5. Average time spent per day on Binge watching</b>		
less than 2 hours	162	46.0
2-4 hours	129	36.6
4-6 hours	40	11.4
more than 6 hours	21	6.0
<b>6. Frequency of Binge Watching</b>		
Once a week or less	68	19.3
1-2 times a week	207	58.8
more than 3 times a week	77	21.9
<b>7. Type of device preferred for watching series</b>		
Smart phones	252	71.6
Tablets	39	11.1
Laptop / PC	61	17.3
<b>8. Genre of content you most often prefer to watch?</b>		
Action	29	8.2
Comedy	92	26.1
Horror	35	9.9
Reality / Documentary	28	8.0
Romance	50	14.2
Sci-fi / fantasy	55	15.6
Thriller	63	17.9
<b>9. Personal social behaviour related to binge watching</b>		
Watched same series more than once	119	33.8
Stayed up whole night to watch a show	83	23.6
Completed an entire season within a day	65	18.5
Cancelled social plans to watch series	30	8.5
Made less healthy choices because of a show	23	6.5
Watched a show at work	32	9.1
<b>10. Sleep quality (PSQI)</b>		
Poor	198	56.3
Good	154	43.8



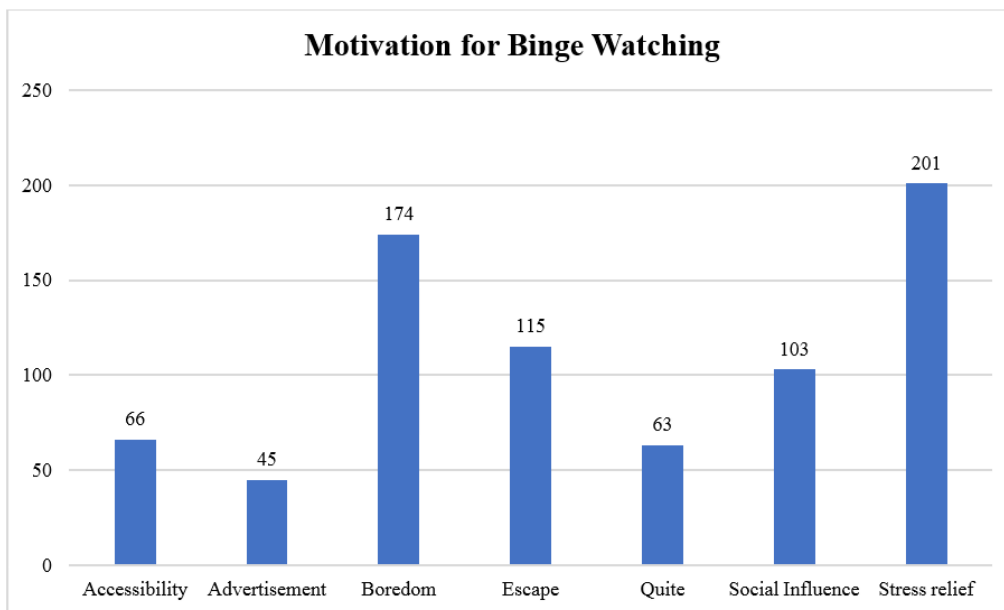
**Figure 1: Prevalence of Problematic Binge Watching**

The study found that the participants had a mean PSWS score of  $12.85 \pm 4.50$  and a mean PSQI score of  $6.11 \pm 3.12$ . Further details regarding the mean PSWS and PSQI scores are presented in Table 2.

**Table 2: PSWS and PSQI Scores of the Study Participants**

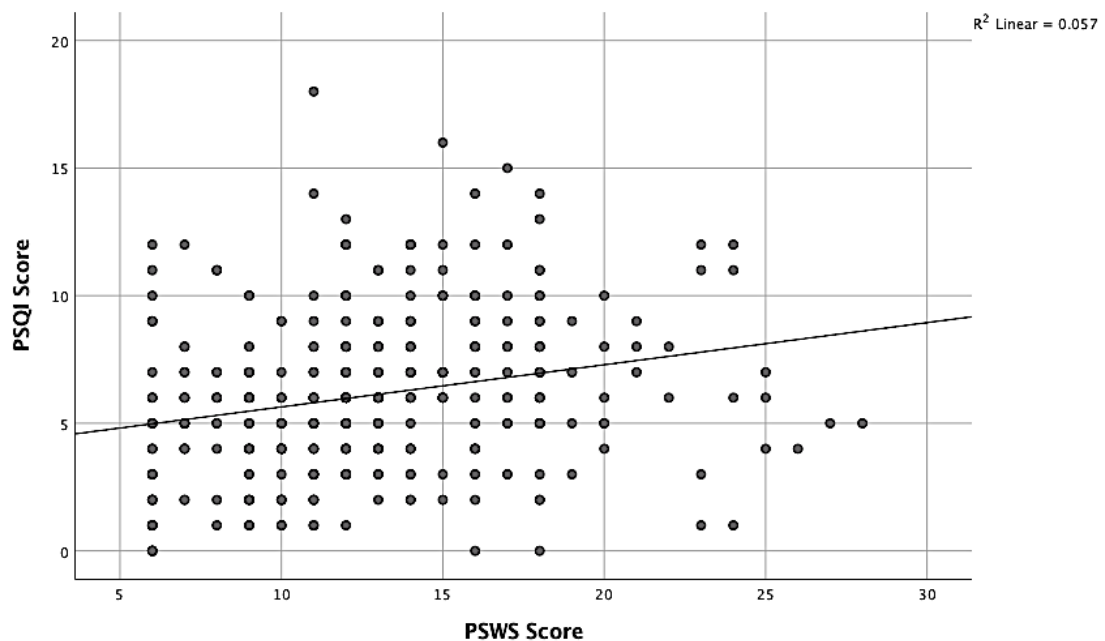
Scores	Mean $\pm$ SD	Minimum Score	Maximum Score
PSWS Score	$12.85 \pm 4.50$	6	28
PSQI Score	$6.11 \pm 3.12$	0	18

Fig 2. displays the various factors that motivate the study participants to binge watch. The most common factor which motivated binge watching was Stress relief (because it clears my mind and it's a great stress reliever) followed by boredom (because I feel bored and have nothing else to do), Escape (because I forget about my worries, problems and it transports me to another world) and Social Influence (because it makes me feel a part of the group, I don't feel excluded, because my friends suggest and expect me to do it since they like it). The other minor factors were Accessibility (because I get the content for free), Quite (because I don't like socializing with people) and Advertisement (I watch trailers and rating and they tempt me to watch it).



**Figure 2: Motivation for Binge Watching**

On Pearson's correlation analysis to examine the relationship between the PSWS score and the PSQI score, it was found that, they were positively correlated with an r-value of 0.238. Out of the 7 components of PQSI, the sleep latency component showed the strongest association with PSWS score. This positive correlation between PSWS and PSQI scores was found to be statistically significant with a p-value of 0.00. Figure 3 presents a scatter plot illustrating the positive association between PSWS and PSQI scores, indicating that problematic binge-watching is associated with poor sleep quality.



**Figure 3: Scatter Plot Showing Association between PSWS and Global PSQI Scores**

Table 3 presents the correlation between different components of sleep and problematic binge watching. Students with higher levels of problematic binge watching had significantly higher mean scores in all 7 components of sleep measured by the PSQI scale, compared to those with lower levels of problematic binge watching. This indicates that problematic binge watching has a negative impact on all aspects of sleep.

**Table 3: Sleep Related Components and Problematic Binge Watching**

Components of Sleep	Total Scores		Lower problematic binge watching		Higher problematic binge watching		p-value
	Mean	SD	Mean	SD	Mean	SD	
1. Subjective sleep quality	0.9	0.80	0.79	0.77	1.01	0.81	0.009*
2. Sleep latency	1.05	0.91	0.85	0.83	1.27	0.94	0.000*
3. Sleep duration	0.96	0.82	0.9	0.80	1.04	0.84	0.111
4. Habitual sleep efficiency	0.58	0.98	0.56	0.97	0.61	1.01	0.666
5. Sleep disturbances	1.24	0.67	1.09	0.67	1.39	0.63	0.000*
6. Use of sleeping medications	0.34	0.74	0.27	0.65	0.41	0.83	0.071*
7. Day time dysfunction	1.04	0.80	0.88	0.77	1.21	0.80	0.000*

\*p-value >0.05 – Statistically significant.

Table 4 shows the various socio-demographic factors associated with problematic binge watching. With respect to problematic binge watching, the PSWS score was higher among those participants with age less than 20 years of age (12.96±4.36), males (12.90±4.26), hostellers (13.15±4.13), Non-medicos (12.96±4.19), spending more than 6 hours watching series (15.24±6.66), binge watching more than 3 times a week (14.27±4.97), using tablets for watching series (14.85±5.50), watching Reality shows / Documentary (14.43±4.27), watching same series more than once (13.83±4.41), having poor sleep quality (13.68±4.18). Out of the all the independent variables, the factors which had statistically significant association with PSWS were duration of binge watching, frequency of binge watching, device used for binge watching and sleep quality.

**Table 4: T-Test/ ANOVA Analysis Showing Association between binge Watching (PSWS Score) and Socio-Demographic Variables**

Socio demographic variables	Binge watching (PSWS Score)		
	Mean	SD	p-value
<b>1. Age</b>			
Up to 20 years	12.96	4.355	0.611
More than 20 years	12.71	4.696	
<b>2. Sex</b>			
Male	12.90	4.262	0.842
Female	12.81	4.703	
<b>3. Type of stay</b>			
Hostel	13.15	4.125	0.346
Day scholar	12.68	4.702	
<b>4. Type of course</b>			
Medical	12.76	4.744	0.675
Non-medical	12.96	4.188	
<b>5. Average time spent per day on Binge watching</b>			

less than 2 hours	11.09	3.794	<b>0.000*</b>
2-4 hours	13.93	3.933	
4-6 hours	15.22	4.870	
more than 6 hours	15.24	6.655	
<b>6. Frequency of Binge Watching</b>			
Once a week or less	10.51	4.331	<b>0.000*</b>
1-2 times a week	13.09	4.084	
more than 3 times a week	14.27	4.965	
<b>7. Type of device preferred for watching series</b>			
Smart phones	12.66	4.363	<b>0.012*</b>
Tablets	14.85	5.504	
Laptop / PC	12.36	4.074	
<b>8. Genre of content you most often prefer to watch?</b>			
Action	12.28	3.250	0.280
Comedy	12.18	4.901	
Horror	12.31	3.924	
Reality / Documentary	14.43	4.272	
Romance	13.34	4.830	
Sci-fi / fantasy	12.93	4.598	
Thriller	13.22	4.346	
<b>9. Personal social behaviour related to binge watching</b>			
Watched same series more than once	13.83	4.411	0.113
Stayed up whole night to watch a show	13.45	4.773	
Completed an entire season within a day	12.17	3.845	
Cancelled social plans to watch series	13.45	4.088	
Made less healthy choices because of a show	12.84	5.010	
Watched a show at work	11.99	4.537	
<b>10. Sleep quality (PSQI)</b>			
Poor	13.68	4.178	<b>0.000*</b>
Good	11.79	4.683	

\*p-value >0.05 – Statistically significant.

## DISCUSSION

Binge watching is a common phenomenon among college students. They often indulge in watching multiple episodes of a TV series or streaming shows for long hours. Binge watching can have negative effects on their academic performance, social life, and mental health. College students who binge watch may experience sleep deprivation, fatigue, procrastination, lack of motivation, and decreased productivity. They may also miss out on important assignments, classes, and social events, leading to feelings of isolation and loneliness. In this study, we have received some noteworthy findings which are discussed below with reference to previous literature.

This study was done among 352 college students. The mean age of the study participants was  $20.33 \pm 2.14$  years, and the sex distribution was almost equal. Majority of them were day scholars and studying medical courses in a private college.

The prevalence of higher problematic binge watching in this study was 51.7%. The findings are higher than the nationwide survey conducted by Data Sciences Division of Dentsu Aegis Network, which found 49% as prevalence of binge watching<sup>[13]</sup>. The participants in this study had a mean problematic series watching score (PSWS) of  $12.85 \pm 4.50$  which is less than the findings reported by Sun JJ et al.<sup>[14]</sup> Where the mean PSWS score of the participants was  $15.3 \pm 4.9$ . The lower score in our study may be due to the fact that it was done among college students, whereas the previous



study was done on general population. This high prevalence of binge watching is a cause for concern as it can have negative impacts on the individual's psychosocial well-being.<sup>[15]</sup> It is therefore important to understand the extent of binge watching among college students and to develop strategies to promote healthy media consumption habits.

Around 46% of the students in our study, spent up to 2 hours per day binge watching and 58.8% binge watch 1-2 times a week. This is relatively less when comparing to a previous study done by Rahul A et al.<sup>[16]</sup>, where 80% of the participants watched web-series content for 1 to 2 hours per day, while 17% watched for 3 to 4 hours per day. Binge watching can lead to addiction-like behavior, where individuals feel compelled to keep watching even when it interferes with their daily activities. The more often individuals engage in binge watching, the more likely they are to develop problematic behavior.

The most common device used by the study participants for binge watching was smart phones (71.6%). This is similar to previous study done by Ahmed et al.<sup>[17]</sup> Where the most common device used was smartphones and laptops. In the present study, it was also observed that the PSWS score was high among those who use iPad/tablets ( $14.85 \pm 5.504$ ) for binge watching, when comparing to smartphones ( $12.66 \pm 4.363$ ) and laptops ( $12.36 \pm 4.074$ ). This may be attributed to the increasing use of tablets, which has become more prevalent with recent technological advancements.

On exploring the reasons for binge watching, the most common factor which motivated binge watching was Stress relief followed by boredom, Escape from worries and problems. Similar reasons were observed in previous study done by various authors in different population.<sup>[18, 19]</sup> the other reasons which were mentioned by the participants were, Social Influence Accessibility, being a quiet person and Advertisement. Apart from this, literature shows that, procrastinating the assignments or responsibilities was also a reason for binge watching among students.<sup>[20]</sup> The Internet and mobile phones are essential in people's lives and can be used for entertainment. However, if overused, they can greatly affect sleep quality.

In this study, it was observed that, there was a positive correlation observed between PSWS scores and PSQI scores on Pearson's correlation analysis, with an r-value of 0.238. Previous studies have shown that binge watching is becoming more common and can be harmful to sleep.<sup>[9]</sup> People with poor sleep quality tend to have higher PSWS scores than those with good sleep quality, as observed in this study. The difference in PSWS scores between the two groups was statistically significant. The finding that students with higher problematic binge-watching tendencies also had poorer sleep quality indicates that these two factors are linked and can influence each other in a vicious cycle. Binge watching may lead to less sleep, which in turn may lead to increased daytime sleepiness and greater reliance on binge watching as a form of entertainment or escape. This cycle can continue, with binge watching causing poorer sleep quality and vice versa, creating a detrimental effect on overall health and well-being

The sleep latency component of the PSQI, which measures how long it takes for an individual to fall asleep, showed the strongest association with PSWS scores in the present study. This means that individuals who take a longer time to fall asleep are more likely to engage in problematic binge-watching behavior. The association between these two factors is particularly concerning as poor sleep quality can have

negative impacts on an individual's physical and mental health, as well as their overall well-being. Previous studies have reported that, binge watching series is linked to increased mental stimulation before bedtime.<sup>[21, 22]</sup> the other components of sleep which were showing statistically significant difference in their mean score between higher and lower problematic binge watching were, subjective sleep quality, sleep disturbances, use of sleeping medications, day time dysfunction.

The other socio-demographic factors which had a statistically significant association with problematic binge watching were, average time spent per day on binge watching, frequency of binge watching and type of device preferred for watching series. Previous studies show that, there is typically a positive association between problematic binge watching and impulsiveness.<sup>[23]</sup> Binge watching can lead to a desire to watch more content, which can further increase the frequency of binge-watching phenomenon. Additionally, those who engage in binge watching tend to watch for longer periods of time than those who do not engage in this behavior.

## CONCLUSION

In conclusion, the findings from this study suggest a significant positive association between problematic binge watching and poor sleep quality. This association appears to be bidirectional, with binge watching leading to poorer sleep quality, and poorer sleep quality increasing the likelihood of binge watching. The consequences of this vicious cycle are alarming, as they may lead to a decline in overall health and well-being, as well as academic and professional performance. Therefore, it is important for individuals, especially college students, to be aware of the potential negative effects of excessive binge watching and to take steps to promote good sleep hygiene. Additionally, further research is needed to better understand the mechanisms underlying this association and to identify effective interventions to address this growing issue.

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