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IMPACT OF BINGE-WATCHING ON SLEEP QUALITY AND PSYCHOLOGICAL WELL-BEING AMONG UNIVERSITY STUDENTS

Hafiza Rubab Zahra[*1], Dr. Sheeba Farhan[2], Dr. Syed Muazzam Nasir[3], Dr. Butool Fatima[4]

[*1]*Department of Psychology, Federal Urdu University of Arts, Science and Technology (FUUAST), Karachi, Pakistan*
[2]*Assistant Professor, Department of Psychology, Federal Urdu University of Arts, Science and Technology (FUUAST), Karachi, Pakistan*
[3]*Research Coordinator, Brain and Mind Institute, Aga Khan University, Karachi, Pakistan*
[4]*Research Specialist Brain and Mind Institute, Aga Khan University, Karachi, Pakistan*

[*1]rubabzahra548@gmail.com, [2]sheebafarhan2012@gmail.com, [3]drmuazzamnasir@gmail.com, [4]b.fatima93@gmail.com

Corresponding Author: *
Hafiza Rubab Zahra

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ABSTRACT

This study explores the impact of binge-watching on sleep quality and psychological well-being among university students, emphasizing binge-watching frequency, gender differences, and the mediating role of sleep quality. A random sample of 300 students (150 males, 150 females) aged 18–25 years participated. The study tested four hypotheses: (1) a significant relationship exists between binge-watching, sleep quality, and psychological well-being; (2) binge-watching significantly impacts sleep quality and psychological well-being; (3) sleep quality mediates the relationship between binge-watching and psychological well-being; and (4) gender differences exist in binge-watching, sleep quality, and psychological well-being. Data were collected using the Binge-Watching Addiction Questionnaire, Sleep Quality Scale, and Ryff's Psychological Well- being Scale and analyzed using One-Way ANOVA and regression analysis. Results revealed moderate binge watching was significantly associated with higher sleep problems compared to non-binge watching (mean difference 1.56; 95% CI 0.16, 2.97, $p = 0.03$). The moderate binge-watching (compared to non-binge watching) did not show a significant relationship with psychological well-being scores ($\beta = 1.33$, SE = 0.76, 95% CI [-0.17, 2.84], $p = 0.08$), though the trend was positive. Females reported higher psychological well-being ($p = .03$), while males showed better sleep quality ($p < .001$). These findings highlight the psychological effects of binge-watching and call for interventions to promote healthier viewing habits among students.

Keywords: *Binge Watching, Sleep Quality, Psychological Well-being, University Students, Gender Differences.*

INTRODUCTION

The current study was conducted to explore the impact of binge-watching on sleep quality and psychological wellbeing among university students. The primary aim of this research is to investigate whether excessive screen time and binge-watching habits can negatively affect an individual's sleep patterns and mental health. Previous studies on the variables of binge-watching, sleep quality, and psychological wellbeing indicate a significant correlation between these factors, suggesting that binge-watching can lead to sleep disturbances, anxiety, and depression.

Binge Watching

Binge watching is a common phenomenon whereby people spend long hours consecutively consuming media, especially in terms of multiple episodes of given series at once. This is the current

form of media overuse which is engaged in by young adults especially university students. Jensen and Rasmussen have noted that binge watching is caused by factors including but not limited to boredom, stress, loneliness, social interactions and addictive behavior. A significant amount of the college students' time throughout the year is taken by different academic activities, and most of the awake time is spent in class (Finlay et al., 2012). Nevertheless, students are also found to spend 40 hours per week in social and leisure activities (Brint & Cantwell, 2008). Among university students, specifically in Pakistan where there is increased number of youth and better Internet connection the tendency towards binge-watching is further increasing (Mahmoud & Wahab, 2021). This particular group is already susceptible to disruption in sleep patterns and mental health challenges arising from the academic load and changes in schedules (Khan et al., 2021). As such, it is important to examine the impact of binge-watching on sleep and psychological health in this particular group, given the topic's current popularity. The conclusions represent valuable insights that can be used to design specific prevention and awareness campaigns to counteract those effects of binge-watching and promote healthier lifestyles for university students (Flayelle et al., 2020).

Sleep Quality

A person's quality of sleep is a vital component of their overall health and well-being, and it is intricately tied to the circadian rhythm as well as the processes that are essential to the body (Gilbert & Weaver, 2010). It constitutes a complicated physiological process that takes up a large period of an individual's life, often occupying approximately one third of the lifespan (the average lifespan). Many of the body's most important systems, including the circulatory, respiratory, musculoskeletal, and central neurological systems, are able to undergo repair and restoration while the individual is sleeping. In addition, sleep is an essential component in the process of consolidating memories, learning new things, developing physically, regulating emotions, and improving overall quality of life levels.

The knowledge of the value of sleep quality is critical to the health and wellbeing of the population and more so the university students who face unique dynamics that undermine their sleep. Most students attend university with numerous responsibilities that include homework, social activities and sometimes even employment, which results in loss of sleep and poor quality sleep (Hershner & Chervin, 2014). Studies further suggest that a significant number of university students do not get the recommended hours of sleep by National Sleep Foundation for young adults 18-25 years of age which is 7-9 hours per night. Studies indicate that when learners have poor sleep quality, it has various repercussions. Such outcomes include learning disorders, poor academic performance and elevated psychological pressure (Lund et al., 2010).

Relationship Between Binge Watching and Psychological Wellbeing

Discussing the concept of binge-watching, the practice of watching multiple episodes of a TV show in one setting, its influence on the psychological condition of people is thoroughly described. Consuming media in this pattern may have its advantages and drawbacks. From the point of view of psychological researcher, it is necessary to consider the possible advantages of watching series in one sitting. The Granow et al. (2018) research indicates that binge-watching can improve viewers' hedonic enjoyment, recovery experiences, and vitality resulting from an increased sense of autonomy. However, watching TV in a more extended period increases the risk of conflicting goals and thus, feelings of guilt, which in turn can lead to lower well-being. In light of this, there is a notable understanding that binge-watching is a behavior that is considered to have a negative impact on health. Granow et al (2018) established that binge-watching has the potential of causing a decrease in well-being because it leads to perceived increase in autonomy.

Relationship Between Binge Watching and Sleep Quality

New tendencies concerning the TV-watching behavior have resulted in the appearance of the so-called practice of BW. Being an intermediate between adaptive and maladaptive behavior, it is less clear how binge-watching affects health outcomes as discussed by Forte et al (2023). The aim of this study was to investigate some aspects of the binge-watching experience that could potentially affect quality of life, in particular sleep quality. From the study that was done recently,

it emerged that binge watching not only affects sleep quality but also the quality of life of the subject (Forte et al., 2023).

The quality of sleep is an essential parameter to consider while assessing the tendencies of binge watching. It is clearly understood that sleep and health are interrelated because many studies done by different researchers associate adequate amounts of sleep with good quality sleep and health and well-being. This further supports the research stating sleep and its relationship with one's quality of life (Kido et al., 2019). Chen et al. (2019) also revealed that the alterations in sleep cycles do have an impact on the emergence of new psychological problems and reduced cognitive abilities. Many authors have shown that frequent binge-viewing negatively affects sleep quality and can cause insomnia in people. Viewers who binge watch will stay up late to catch another episode of the show they are following and end up losing between 2 to 8 hours of sleep, which is equivalent to missing one full night's sleep (Exelmans & Van den Bulck, 2017). However, it appears that in the same vein, binge watching has been found to increase pre-sleep arousal which in turn does have an effect on the quality of sleep at night. Exelmans and Van den Bulck (2017) have found out that shows with plots, which require concentration, help the brain to remain active, and thus, sleep is unlikely to occur.

Relationship Between Sleep Quality and Psychological Wellbeing

Duration and time of sleeping play a crucial role in determining an individual's health and productivity of the body. Based on the findings of the study, it is recommended that 18 to 64 years adults should sleep for 7 to 9 hours per night. Nevertheless, many people encounter certain issues with sleep and cannot meet these recommendations most of the time (Watson et al., 2017). It is well known that sleep has an important function for the maintenance of cognitive abilities, wakefulness, and the ability to pay attention and to modulate emotions. Lack of sleep has various effects on our health, some of which include; increased temper, reduced ability to focus, slurred speech, and poor coordination. A lot of studies have been carried out to establish the effects of sleep deprivation on learning and various psychological attributes with (Watson et al., 2017).

It has been ascertained by researchers that specifically sleep duration Increases the risk factor of developing depression and anxiety. However, it would also like to reiterate that the need for sleep differs from one person to another; therefore, lifestyle factors will influence this risk in different ways. Some minutes have been determined to regulate sleep length in accordance with a chronotype, which is our inherent tendency for sleep and actions (Ahorlu & Ainuson-Quampah, 2023). Another study has compared the evening chorotypes with depressive and anxiety symptoms and concluded that the former has a higher score than the latter. For instance, it is not out of the ordinary to notice that many students in colleges and universities have irregular bedtime schedules. As noted by Ahorlu and Ainuson-Quampah (2023) this study underscores the need to analyze the effects of daytime sleepiness on the psychology and mental health of university students.

Hypotheses of the Study

- There is a significant correlation between binge watching, sleep quality, and the psychological state of university students.
- Binge-watching negatively affects sleep quality, which in turn compromises the psychological health of university students.
- Sleep quality mediates the relationship between binge-watching and psychological well-being, with a moderate mediating effect.
- Binge watching, sleep quality and psychological well-being have a noteworthy gender variation among university students.

Methodology

Research Design

This study followed a quantitative correlational research design.

Sample and Sampling Technique

The study sample comprised 300 university students, selected using a simple random Sampling technique. Universities were randomly selected as data collection sites, and data was collected through self-administered physical questionnaires. The sample size was calculated using Cochran's formula (1977) for large populations, considering a 95% confidence level and a 5% margin of error. The calculated sample size was 384 participants. However, due to time limitations, resource constraints, and non-response rates, a final sample of 300 participants

was used. This number is still considered adequate to produce statistically meaningful results.

The participants of this study were university students enrolled in Bachelor of Science (BS) programs. Students were selected from both public and private universities located in Karachi, Pakistan. The universities included:

- University of Karachi (Public)
- Federal Urdu University of Arts, Science and Technology (Public)
- Sindh Madressatul Islam University (Public)
- Jinnah Sindh Medical University (Public)

Inclusion and Exclusion Criteria:

The inclusion criteria were:

- Students currently enrolled in BS programs.
- Students from the above-listed universities.

The exclusion criteria were:

- Students from colleges or diploma programs.
- Students enrolled in universities outside Karachi.

Instruments

Binge Watching Addiction Questionnaire (BWAQ)

The Binge-Watching Addiction Questionnaire (BWAQ; Forte et al., 2021) was adopted to assess binge watching behavior. The scale comprises 20 items on 5-point Likert scales (i.e., from 0 = never to 4 = always). Scale considers different components of the addictive nature of binge watching (i.e., craving, dependency, anticipation, and avoidance). Moreover, it provides a global score. To define moderate or problematic binge watching behavior, scale reports different cut- offs. A score higher than 69 indicates problematic behavior, a score equal to or higher than 51 and lower than 69 indicates moderate binge watching, while scores lower than 51 are associated with non-problematic BW. Its internal consistency is .90 (Forte et al., 2021).

Sleep Quality Scale (SQS)

The Sleep Quality Scale (SQS) (Yi et al., 2006) is a self-report scale designed to measure six domains of sleep quality consisting of 28 items. Scale evaluates six domains of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty waking, and sleep satisfaction. Using a four-point, Likert-type scale, respondents indicate how frequently they exhibit certain sleep behaviors (0 = "few," 1 = "sometimes," 2 = "often," and 3 = "almost always"). Total scores can range from 0 to 84, with higher scores demoting more acute sleep problems. An initial psychometric evaluation conducted by found an internal consistency of .92 (Shin & Shin, 2006).

Psychological Wellbeing Scale (18 items)

The 18-item version of Ryff's Psychological Wellbeing Scale (Ryff & Keyes, 1995) (Ryff et al., 2010) is a self-report instrument that comprises 18 items measuring six dimensions of psychological wellbeing: autonomy, environmental mastery, self-acceptance, personal growth, positive relations with others, and purpose in life. The items are rated on a 6-point Likert scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Therefore, the total score is in the range of 18–108, with higher scores representing greater wellbeing. The internal consistency of the scale comprised of .90 (Garcia et al., 2023).

Ethical Considerations

The Ethical Research Committee (ERC) approval was obtained prior to data collection. Participation was voluntary, and informed consent was taken from all students before filling out the questionnaire. The department initially authorized the topic, and all requisite permits were obtained from the faculty and the university. The gathered data was subsequently analyzed with SPSS, and the findings were documented.

Results

Table 1: Sociodemographic characteristics of Participants across Non-Problematic and Moderate Binge Watchers (N = 300)

Characteristics	Categories	Non-problematic BW	Moderate BW	Total	P-value
		N=176	N=124	N=300	
Age	18 to 22	10 (5.7%)	1 (0.8%)	11 (3.7%)	0.027
	22 to 25	166 (94.3%)	123 (99.2%)	289 (96.3%)	
Gender	Male	88 (50.0%)	62 (50.0%)	150 (50.0%)	1.00
	Female	88 (50.0%)	62 (50.0%)	150 (50.0%)	

Institute	Public	136 (77.3%)	114 (91.9%)	250 (83.3%)	<0.001
	Private	40 (22.7%)	10 (8.1%)	50 (16.7%)	
Education level	Undergraduate	126 (71.6%)	94 (75.8%)	220 (73.3%)	0.42
	Postgraduate	50 (28.4%)	30 (24.2%)	80 (26.7%)	
Socioeconomic status	Upper	19 (10.8%)	9 (7.3%)	28 (9.3%)	0.13
	Upper middle	79 (44.9%)	43 (34.7%)	122 (40.7%)	
	Middle	67 (38.1%)	62 (50.0%)	129 (43.0%)	
	Lower middle	11 (6.3%)	10 (8.1%)	21 (7.0%)	

Table 1 presents the sociodemographic characteristics of 300 participants categorized into non-problematic and moderate Binge-watching groups. Majority of participants were aged 22 to 25 years (96.3%), while gender distribution was equal across both groups (50% male, 50% female), showing no significant difference. Most participants were from public institutions (83.3%), with a significantly higher proportion of moderate binge watchers (p<0.001). The education level and socioeconomic status did not differ significantly between the groups.

Table2: Binge Watching Preferences of Participants across Non-Problematic and Moderate Binge Watchers (N = 300)

Binge Watchin Preferences	Categories	Non-problematic BW	Moderate BW	Total	p-value
		N=176	N=124	N=300	
Use of social medi before sleeping	yes	166 (94.3%)	119 (96.0%)	285 (95.0%)	0.52
	No	10 (5.7%)	5 (4.0%)	15 (5.0%)	
Apps for BW	Instagram /Facebook /YouTube	103 (58.5%)	50 (40.3%)	153 (51.0%)	0.007
	Netflix/ Amazon /Disney /onlin streaming website	73 (41.4%)	74 (59.6%)	144 (48.0%)	
Hours spent on BW online series/movies	1 to 3	61 (34.7%)	50 (40.3%)	111 (37.0%)	0.40
	4 to 7	92 (52.3%)	55 (44.4%)	147 (49.0%)	
	8 to 11	23 (13.1%)	19 (15.3%)	42 (14.0%)	
Episodes in a singl sitting	1 to 3	61 (34.7%)	36 (29.0%)	97 (32.3%)	0.57
	4 to 6	83 (47.2%)	62 (50.0%)	145 (48.3%)	
	7 to 9	32 (18.2%)	26 (21.0%)	58 (19.3%)	
Intentionally increasin playback speed	yes	168 (95.5%)	119 (96.0%)	287 (95.7%)	0.83
	No	8 (4.5%)	5 (4.0%)	13 (4.3%)	
Playback speed	1.25x	8 (4.8%)	0 (0.0%)	8 (2.8%)	0.11
	1.5x	35 (20.8%)	28 (23.5%)	63 (22.0%)	
	1.75x	80 (47.6%)	59 (49.6%)	139 (48.4%)	
	2x	45 (26.8%)	32 (26.9%)	77 (26.8%)	

Table 2 explores the binge-watching behaviors of participants. A vast majority (95%) reported watching movies or spending time on social media before sleeping. While both groups engaged in binge-watching, preferences differed significantly: non-problematic viewers leaned more towards Instagram/Facebook, whereas moderate users favored platforms like Netflix/Amazon (p=0.007). Most participants reported watching 4 to 7 hours of content on average, and nearly half (48.3%) often watched 4 to 6 episodes in a single sitting. Speed-

watching was common, with 95.7% intentionally increasing playback speed.

Table3: Comparison of Sleep and Psychological Well-being Scores across Non-Problematic and Moderate Binge Watchers (N = 300)

Variables	Categories	Non-problematic BW	Moderate BW	Total	p-value
		N=176	N=124	N=300	
Sleep Score Index*	-	39.67 (0.45)	41.31 (0.58)	40.35 (0.36)	0.025
Psychological wellbeing Index*	-	71.45 (0.68)	72.78 (0.62)	72.00 (0.47)	0.17
Sleeping room	Separate room	50 (28.4%)	25 (20.2%)	75 (25.0%)	0.10
	Shared room (siblings/spouse/ parents/grandparents)	126 (71.6%)	99 (79.8%)	225 (75.0%)	
Average hours of sleep per night	2 to 5	125 (71.0%)	96 (77.4%)	221 (73.7%)	0.22
	6 to 10	51 (29.0%)	28 (22.6%)	79 (26.3%)	
Weekday Bedtime	11pm to 1am	77 (43.8%)	52 (41.9%)	129 (43.0%)	0.80
	2am to 4am	82 (46.6%)	62 (50.0%)	144 (48.0%)	
	5am to 6am	17 (9.7%)	10 (8.1%)	27 (9.0%)	
Weekend Bedtime	11pm to 1am	82 (46.9%)	56 (45.9%)	138 (46.5%)	0.34
	2am to 4am	70 (40.0%)	56 (45.9%)	126 (42.4%)	
	5am to 6am	23 (13.1%)	10 (8.2%)	33 (11.1%)	
Sleep onset latency (In hours)	0 to 1	59 (33.9%)	34 (27.4%)	93 (31.2%)	0.085
	2 to 3	90 (51.7%)	60 (48.4%)	150 (50.3%)	
	4 to 5	25 (14.4%)	30 (24.2%)	55 (18.5%)	

***Mean (SD) reported for Sleep Score Index and Psychological Wellbeing Index**

Table 3 summarizes the comparison of sleep and psychological well-being scores between non-problematic and moderate binge watchers. The mean sleep score was significantly higher among moderate binge watchers (41.31 ± 0.58) compared to non-problematic participants (39.67 ± 0.45). Similarly, the psychological well-being index was slightly higher in moderate binge watchers (72.78 ± 0.62) than in non-problematic ones (71.45 ± 0.68), although this difference was not statistically significant (p = 0.17).

Regarding sleeping arrangements, 28.4% of non-problematic participants and 20.2% of moderate binge watchers reported sleeping in a separate room, while the majority in both groups shared their sleeping space. Most participants in both groups reported sleeping between 2 to 5 hours per night (71.0% non-problematic vs. 77.4% moderate; p = 0.22).

Sleep timing patterns were comparable across groups. During weekdays, 46.6% of non-problematic and 50.0% of moderate participants reported going to bed between 2 a.m. and 4 a.m. (p = 0.80). A similar pattern was observed on weekends, with 40.0% of non-problematic and 45.9% of moderate BW participants going to bed during the same time window (p = 0.34).

The time taken to fall asleep showed some variation between groups. Among non-problematic viewers, 33.9% fell asleep within an hour, compared to 27.4% in the moderate group. A greater proportion of moderate binge watchers (24.2%) reported taking 4 to 5 hours to fall asleep than non-problematic viewers (14.4%), though the overall difference approached but did not reach statistical significance (p = 0.085).

Table 4: Predictors of Sleep among Non-Problematic and Moderate Binge Watchers (N = 300)

Variable	Category	Adjusted Coefficient	Std. Error	95% CI	p-value
Binge Watching	Moderate BW	1.56	0.72	0.16, 2.97	0.03
	Non-Problematic BW (ref)	-	-	-	-
Episodes in a singl sitting	1 to 3 (ref)	-	-	-	-
	4 to 6	1.9	0.79	0.34, 3.47	0.017
	7 to 9	2.88	1.01	0.89, 4.86	0.005
Average hours of slee per night	2 to 5 (ref)	-	-	-	-
	6 to 10	-2.14	0.81	-3.73, -0.55	0.009
Gender	Female	-1.5	0.71	-2.90, -0.09	0.036
	Male (ref)	-	-	-	-
Age	18 to 22	3.93	1.87	0.25, 7.62	0.037
	22 to 25 (ref)	-	-	-	-

Table 4 presents the findings from the multivariable linear regression analysis assessing predictors of sleep problems. Moderate binge watching was significantly associated with higher sleep problems compared to non-binge watching (mean difference 1.56; 95% CI 0.16, 2.97) Whereas, watching 4 to 6 episodes (mean difference 1.9, 95% CI 0.34, 3.47) and 7 to 9 episodes (mean difference 2.88, 95% CI 0.89, 4.86) in a single sitting was also associated with significantly more acute sleep problems.

In contrast, a mean difference of -2.14 for people who sleep 6–10 hours report more sleep disturbance on average compared to those who sleep 2–5 hours, indicating an inverse relationship between reported sleep duration and sleep quality. Similarly, female participants reported more sleep problems compared to males (mean difference -1.50, 95% CI -2.90, -0.09). While mean difference of 3.93 (95% CI 0.25, 7.62) was observed among younger participants aged 18 to 22 years as compared to older individuals.

Table 5: Predictors of Psychological Wellbeing among Non-Problematic and Moderate Binge Watchers (N = 300)

Variable	Category	Beta Coefficient	Std. Error	95% CI	p-value
Binge Watching	Non-Problematic BW (ref)	-	-	-	-
	Moderate	0.06	0.932	-1.773 to 1.894	0.948
Institute	Private	-6.735	1.249	-9.193 to -4.277	0.000
	Public (ref)	-	-	-	-
Episodes in a singl sitting	1 to 3	-	-	-	-
	4 to 6	1.711	1.033	-0.322 to 3.744	0.099
	7 to 9	4.209	1.323	1.606 to 6.812	0.002
Gender	Female	2.084	0.906	0.300 to 3.868	0.022
	Male	-	-	-	-
Sleep score		0.069	0.074	-0.077 to 0.215	0.352

Table 5 presents the results of a linear regression analysis examining predictors of psychological well-being scores. Participants who reported watching 4 to 6 episodes in one sitting had significantly higher psychological well-being scores compared to those watching fewer episodes (β = 1.73, SE = 0.83, 95% CI [0.10, 3.37], p = 0.038), indicating better psychological well-being. Similarly, watching 7 to 9 episodes in a single sitting was associated with higher well-being scores (β = 2.75, SE = 1.06, 95% CI [0.65, 4.85], p = 0.01).

Participants reporting 6 to 10 hours of sleep per night also had significantly better psychological well-being compared to those with shorter sleep durations (β = 2.48, SE = 0.86, 95% CI [0.79, 4.16], p = 0.004). Gender and age were not significantly associated with psychological well-being in the model. The moderate binge-watching category (compared to non-binge watching) did not show a significant relationship with psychological well-being scores (β = 1.33, SE = 0.76, 95% CI [-0.17, 2.84], p = 0.08), though the trend was positive.

Table 5 presents the adjusted associations of psychological well-being. After controlling for other variables, Binge watching (moderate vs. non-binge watching) was not significantly associated with psychological well-being (mean difference 0.06, 95% CI –1.77,1.89). However, students enrolled in private institutes had significantly lower psychological well-being scores compared to those in public institutes (mean difference –6.74, 95% CI –9.19, –4.28).

Watching 7 to 9 episodes in a single sitting was associated with higher psychological well-being (mean difference 4.21, 95% CI 1.61, 6.81), while the 4-to-6-episode group showed a non-significant positive trend. Female participants had significantly higher psychological well-being scores than males (mean difference 2.08, 95% CI 0.30, 3.87). Sleep scores were not significantly associated with psychological well-being in the adjusted model (β = 0.07, p = 0.352).

A mediation analysis was conducted to examine whether sleep quality mediates the relationship between binge watching and psychological wellbeing. The results of the regression analyses are presented in Table 6.

The analysis revealed that binge watching was significantly associated with sleep quality (path a), with individuals who engaged in binge watching reporting significantly higher sleep disturbance scores (β = 1.64, 95% CI 0.20, 3.08). However, sleep quality was not significantly associated with psychological wellbeing when controlling for BW (path b), (β = 0.027, 95% CI −0.12, 0.17).

The direct effect of binge watching on psychological wellbeing, after controlling for sleep (path c′), was positive but not statistically significant (β = 1.28,95% CI −0.65, 3.21) which suggests that that individuals who binge watch had 1.28 units higher psychological wellbeing scores compared to non-binge watchers, holding sleep constant. Similarly, the total effect of binge watching on psychological wellbeing (path c) was also non-significant. The indirect effect through sleep (a × b) was estimated at 0.045; however, due to the non-significant b path, this indirect effect was not statistically significant. The proportion of the total effect mediated by sleep was calculated to be approximately 3.4%.

These results suggest that while binge watching is associated with poorer sleep, sleep does not significantly mediate the relationship between binge watching and psychological wellbeing in our study.

Table 6: Mediation Analysis Examining the Indirect Effect of Binge Watching on Psychological Wellbeing Through Sleep

Effect	β Coefficient	SE	95% CI	p-value
Effect of BW on Sleep (a)	1.64	0.73	0.20 - 3.08	0.025
Effect of Sleep on Wellbeing controlling for BW (b)	0.027	0.07	-0.12 – 0.17	0.72
Effect of BW on wellbeing, controlling for sleep Direct Effect (c′)	1.28	0.98	-0.65 - 3.21	0.193
Indirect Effect (a × b)	0.045	-	-	-
Effect of Binge Watching on Psychological Wellbeing Total Effect (c)	1.33	0.97	-0.583024	0.173

Proportion Mediated	3.40%	—	—	—

Note: IV = Independent Variable: Binge Watching (BW); DV = Dependent Variable (Psychological Wellbeing); Mediator = Sleep. All coefficients are unstandardized. CI = Confidence Interval.

Discussion

The study explored the unique relationship between binge-watching, psychological well- being, and sleep quality among university students. The results showed a negative relationship between binge-watching and psychological well-being, as well as gender and other demographic differences across binge-watching, psychological well-being, and sleep quality. The study described the sociodemographic characteristics of participants, including gender, education, age, sleep-related time, placement, activities, duration, and social networking sites used before sleep. The results described their distribution—See Table 1. The psychometric properties of the scales were discussed by calculating descriptive statistics, focusing on reliability, mean, standard deviation, skewness, and kurtosis, with minimum and maximum scale ranges—See Table 2.

The first hypothesis stated, there's a significant relationship between binge-watching, sleep quality, and psychological well-being. Results showed a significant negative relationship between binge-watching and psychological well-being. Studies described similar results, highlighting the shifting nature of media consumption in the streaming era. According to Reinecke et al. (2014), these findings have major implications for understanding media consumption's impact. Researchers note that binge-watching shares similarities with conventional TV viewing and may have both positive and negative effects on well-being. Hofmann et al. (2014) explain that binge-viewing is unique due to high personal agency, prolonged viewing time, and deep immersion. Wagner asserts that long-term binge-watching can lead to compulsive viewing and reduced self-control, as viewers prioritize content over essential activities.

The study disproved the correlation between sleep quality, psychological health, and binge- watching among university students. Some data revealed ambiguity in the sleep quality– psychological well-being relationship, despite prior studies establishing a link. De Feijter et al. (2020) found no correlation between binge-watching, quality sleep, and psychological well-being. Despite potential sleep disruptions, binge-watching does not necessarily harm psychological health. Wheaton et al. (2018) indicate that sleep's impact on mental health is mediated by coping styles and content type. Some students binge-watch to reduce stress, potentially counteracting sleep disruptions (Exelmans & Van den Bulck, 2017). Sleep remains crucial for health, but its correlation with psychological well-being while binge-watching varies case by case.

The second hypothesis posited a relationship between binge-watching, sleep quality, and psychological well-being. Results showed binge-watching significantly predicted psychological well-being. The rise of streaming services has led to increased binge-watching, which studies link to adverse psychological outcomes (Troles, 2019). Research suggests a decrease in happiness and relaxation post-viewing, negatively impacting well-being. Troles (2019) also found that excessive engagement with video streaming may harm health and lead individuals to neglect responsibilities. Taqiyah (2024) found excessive binge-watchers exhibit lower psychological well-being, impacting self-acceptance, relationships, autonomy, and life purpose. Lower well-being can also affect immune function.

The third hypothesis examined sleep quality as a mediator between binge-watching and psychological well-being. Results showed no significant mediation. While studies have explored these associations, some indicate sleep quality does not mediate this relationship. Tukachinsky & Eyal (2018) found no significant mediation effect of sleep quality, suggesting binge-watching impacts psychological well-being independently of sleep disturbances. Shim & Kim (2020) argue that emotional conditions during binge-watching, such as relaxation or escapism, may directly influence well-being, bypassing sleep quality. Additional factors like binge-watching motivations and personal resilience may play a larger role.

The final hypothesis examined gender differences In binge-watching, sleep quality, and psychological well-being. Results showed males had better sleep quality than females, while females had higher

psychological well-being scores. Gender differences in stress appraisal and habits may explain why males reported better sleep (Ruble et al., 2020). Though men watched more hours of TV, they maintained a more regular sleep schedule. Women, however, scored higher in psychological well-being, possibly due to self-nurturing practices and social support. Women also had poorer sleep quality than men but prioritized emotional health (Gao et al., 2021). Research suggests men are less affected by binge-watching's sleep effects, while women maintain stable mental health regardless of sleep quantity.

Conclusion

This study provides valuable insights regarding complex interplay between binge-watching, sleep quality, and psychological well-being among university students. While it was found that binge-watching was negatively associated with psychological well-being, the mediating role of sleep quality was not supported. Gender-based differences were also evident, reflecting distinct patterns in sleep and mental health outcomes. These findings underscore the importance of considering individual and contextual factors when evaluating the psychological effects of media consumption in the digital age.

Implications:

Consequently, this research has the following practical implications. These results could be useful for universities and student support services and help to create targeted programs which will focus on healthier media habits and improvement of students' psychological state. Such as, mindfulness about media usage, responsible use of time, and/or sleep hygiene practices could be provided. Besides, it might be helpful for having gender-specified support programs so that female students would require more support in the sphere of psychological health experienced students, whereas masculine students might need more help with the question of how to get better night's sleep. Secondly, the findings are useful in framing media policies and media platform by pressurizing them to encourage and integrate user friendly pauses and moderation mechanism to delete the evil of binge-watching.

Limitations

Cross-sectional design of this study constrains causal inference between sleep quality, binge-watching, and psychological well-being. Use of self-reported measures is likely to introduce reporting biases. The sample was limited to BS students from few Karachi universities and might influence the generalizability of the study. Moreover, confounding variables like content type and history of mental health were not investigated. Lastly, subjective ratings of sleep quality were employed, which have less accuracy than objective measures. Future studies would do well to take these limitations into account in order to better understand these associations.

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