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A study on the impact of binge watching on teenagers' sleep disruption

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Abstract
This study examines the impact of binge-watching behaviour on sleep disruption among teenagers amid the growing use of digital streaming platforms and personal devices. A descriptive research design was used, with data collected from 128 respondents through a structured questionnaire and analysed using frequency distribution, ANOVA, t-test, and correlation. Findings show that most teenagers frequently binge-watch for extended periods, often late at night, leading to difficulty stopping and delayed bedtimes. The results indicate significant negative effects on sleep, including reduced duration, irregular patterns, difficulty falling asleep, and increased daytime fatigue, which also affects academic concentration. Correlation analysis revealed a strong positive relationship ($r = 0.753$, $p < 0.001$) between binge-watching and sleep disruption. The study highlights the need for awareness and healthier media consumption habits to improve sleep quality and overall well-being.

Keywords: Binge-watching, sleep disruption, teenagers, sleep patterns, daytime fatigue

Introduction

In the digital era, the availability of online streaming platforms such as Netflix, Amazon Prime Video, and Disney+ has significantly changed the way people consume entertainment. One of the most common viewing habits that has emerged from these platforms is binge watching, which refers to watching multiple episodes of a television series continuously in a single sitting. This trend has become particularly popular among teenagers, who often spend long hours watching their favourite shows due to easy access to smartphones, laptops, and smart televisions.

While binge watching provides entertainment and relaxation, it may also have negative effects on health, especially on sleep patterns. Teenagers are more likely to watch shows late at night, which can delay their bedtime and reduce the total amount of sleep they get. Continuous exposure to screens and engaging storylines often keeps the mind active, making it difficult for viewers to fall asleep immediately after watching. Over time, this behaviour can lead to sleep disruption, fatigue, reduced concentration, and decreased academic performance.

Sleep plays a crucial role in the physical and mental development of teenagers. However, the growing habit of binge watching has raised concerns about its potential impact on sleep quality and overall well-being. Therefore, it becomes important to understand how binge-watching influences teenagers' sleep patterns and whether excessive viewing contributes to sleep disturbance.

Hence, this study aims to examine the impact of binge watching on teenagers' sleep disruption, focusing on how viewing habits, screen time, and late-night entertainment affect their sleep quality and daily functioning.

Review of Literature

1. Giuseppe Forte, Francesca Favieri, Renata Tambelli & Maria Casagrande did a study on "A model to understand risk behaviour: Interoception awareness and motivational systems in the binge watching." This study aims to test the interoceptive-motivational hypothesis as a possible marker for the risk of developing binge-watching (BW) as a behavioural addiction. Like other risky behaviours, BW can be included in a model that includes the interaction of personological and physiological factors as predictors of the behavioural outcome. On a sample of 741 young adults, a structural equation model considered the association between the interoceptive indices (MAIA questionnaire), inhibition/activation systems (BIS/BAS questionnaire) of the motivational theory, and BW pattern (BWAQ questionnaire). The results suggested a different interaction between the variables when BW was considered as a leisure activity and as an at-risk behaviour. While in the first case, interoception and BIS/BAS systems interact, and BIS and interoception positively affect the increase of BW as a leisure activity, in BW as at-risk behaviour, the interoceptive-motivational link is lost, and a different pattern of association with the behaviour emerges. BIS and BW are still positively associated with the problematic expression of the behaviour. The result would suggest that persons exhibiting better interoceptive sensitivity display lower risk of addictive BW. Finally, the interoceptive motivational model, if confirmed in other at-risk behaviours, would provide a new perspective in the field of behavioural addictions
2. Liese Exelmans, MA and Jan Van den Bulck, DSc, PhD conducted a study titled "Binge Viewing, Sleep, and the Role of Pre-Sleep Arousal," published in the Journal of Clinical Sleep Medicine. The objective of the study was to investigate the prevalence of binge viewing and its association with sleep, as well as to examine arousal as an underlying mechanism of this relationship. The researchers used an online survey and applied regression analysis and mediation analysis as statistical tools. The study involved 423 young adults aged 18–25 years, among whom 80.6% identified themselves as binge viewers. The findings revealed that frequent binge viewing is associated with poor sleep quality and fatigue, and cognitive pre-sleep arousal plays a role in explaining sleep disturbances related to binge watching.
3. "Binge-Watching: The New Way of Watching TV Series" (2018), which was published in the AM Journal

of Art and Media Studies. The study aimed to conceptualize binge-watching as a new media consumption pattern, differentiate it from traditional television viewing, and examine the role of social media in binge-watching behaviour. The research used a case study approach along with content analysis and social media analysis as the main tools for data collection and interpretation. The findings indicated that the rise of streaming platforms has popularized binge-watching, where viewers watch multiple episodes consecutively. It also highlighted that social media discussions enhance viewer engagement and that binge-watching behaviour differs significantly from traditional television consumption.

4. The study titled "Barriers and Facilitators to Binge-Watching Using the Theoretical Domains Framework" (Published August 9, 2024) was published in the Heliyon Journal (Elsevier). The research aimed to examine psychological factors influencing binge-watching behaviour, study the role of habit and regret in binge-watching, and analyse continuous viewing intentions among viewers. The study used a survey questionnaire as the primary data collection method and applied quantitative analysis to interpret the results. The findings revealed that binge-watching behaviour is largely driven by habit, perceived usefulness, and social influence. It was also found that viewers often experience regret after excessive binge-watching, while continuous viewing intentions are influenced by emotional engagement. Overall, the study concluded that psychological factors strongly predict binge-watching behaviour.
5. Binge-Watching Uncovered: Examining Perceived Usefulness, Habit, and Regret (2024) conducted a study on binge-watching behaviour published in the Indian Journal of Psychiatric Social Work. The objective of the study was to synthesize research on binge-watching as a behavioural addiction and identify the causes and consequences of excessive binge-watching. The study adopted a systematic literature review using the PRISMA method and analysed multiple empirical studies. The findings revealed that binge-watching can develop into behavioural addiction due to factors such as escapism, emotional loneliness and social anxiety, leading to negative outcomes like academic problems, sleep disturbances and mental health concerns.
6. A Study on Binge Watching and its Association with Sleep Pattern (2021) conducted a study published in the National Journal of Community Medicine. The objective of the study was to assess the prevalence of binge watching among medical students and to examine its association with sleep quality. The study adopted a cross-sectional research design using a semi-structured questionnaire and the Pittsburgh Sleep Quality Index (PSQI) scale to measure sleep patterns. The findings revealed that binge watching was common among students and showed a significant association with poor sleep quality, including indicators such as increased sleep latency and daytime dysfunction. The study concluded that late-night binge watching negatively affects sleep patterns and overall well-being.
7. The Effect of Watching OTT Late at Night on Sleep Patterns (2023) conducted a study published in the Journal of Sleep Research / related journal. The objective of the study was to examine the causal impact of OTT media consumption on total sleep duration and to assess changes in bedtime timing due to late-night streaming. The study used tools such as PubMed data, machine learning, causal inference, random forest nearest-neighbour propensity score matching, and Difference-in-Difference (DID) statistical analysis. The findings revealed that watching streaming media late at night significantly reduced total sleep duration by about 18– 20 minutes and delayed bedtime by a similar amount on average. The study concluded that late-night OTT streaming can interfere with normal sleep routines even though it offers greater content choice and viewing autonomy.
8. Binge Viewing, Sleep, and the Role of Pre-Sleep Arousal conducted a study published in the Journal of Clinical Sleep Medicine. The objective of the study was to determine the prevalence of binge viewing among young adults and to measure the association between binge watching and sleep markers such as sleep quality, fatigue, and insomnia. The study used tools such as online surveys, the Pittsburgh Sleep Quality Index (PSQI), Fatigue Assessment Scale, Bergen Insomnia Scale, and Pre-Sleep Arousal Scale, along with regression and mediation analysis. The findings revealed that frequent binge watching was associated with poorer sleep quality, increased fatigue, and higher insomnia symptoms. The study concluded that cognitive arousal before sleep plays an important role in explaining how binge viewing negatively affects sleep patterns.

1. Research Gap

Although several studies have examined binge-watching behaviour and its psychological effects, most of the existing research focuses on young adults or general media consumption patterns rather than teenagers specifically. Many studies also concentrate on behavioural addiction, motivational factors, and social influences, while limited research directly explores how binge-watching affects sleep disruption among teenagers, particularly in relation to late night viewing habits, screen time, and daily functioning. Additionally, most previous studies analysanae binge watching as a behavioural or psychological phenomenon, but there is less emphasis on its practical impact on teenagers' sleep routines, sleep quality, and academic concentration. Therefore, there is a need for research that specifically examines how binge-watching habits influence sleep patterns and sleep disruption among teenagers in the current digital streaming era.

2. Research Objectives

2.1 To study the impact of binge watching on sleep disruption among teenagers.

2.2 To study the effects of binge watching on daytime tiredness and concentration levels.

3. RESEARCH HYPOTHESIS

3.1 Null Hypothesis (H0)

There is no significant relationship between binge watching and sleep disruption among teenagers.

3.2 Alternative Hypothesis (H1)

There is a significant relationship between binge watching and sleep disruption among teenagers.

Research Methedology

Research methodology refers to the systematic process used to collect, analyse, and interpret data for a research study. This study focuses on examining the impact of binge watching on teenagers' sleep disruption. Primary data for the research is collected through a structured questionnaire distributed to college-going teenagers. The collected data is analysed using statistical tools to understand the relationship between binge-watching habits and sleep patterns. The analysis includes Correlation, descriptive analysis and ANOVA, which help in identifying the strength of relationships, predicting the impact of binge watching on sleep disruption, and comparing differences among groups.

Analysis and Discussion

Table showing demographic profile of the respondents

Factors	Dimensions	Percentage %
Age (Years)	13 – 15	7%
	16 – 17	24.2%
	18 – 19	68.8%
Gender	Male	33.6%
	Female	66.4%
Educational Level	School Student	28.1%
	College Student	71.9%
Ownership of Personal Device	Yes	96.1%
	No	3.9%
Platform used	Netflix	27.3%
	Amazon prime	17.2%
	YouTube	24.2%
	Disney+ Hotstar	25.8%
	Others	5.5%

Interpretation

The demographic data shows that the majority of respondents (68.8%) fall within the age group of 18–19 years, followed by 24.2% aged 16–17, and a small proportion (7%) aged 13–15, indicating that most participants are late adolescents.

In terms of gender, females (66.4%) outnumber males (33.6%), suggesting a higher representation of female respondents in the study.

Regarding educational level, most respondents are college students (71.9%), while 28.1% are school students, indicating that the sample is largely composed of individuals pursuing higher education.

A significant majority (96.1%) own a personal device, showing high accessibility to digital technology among respondents.

Concerning platform usage, Netflix (27.3%) and Disney+ Hotstar (25.8%) are the most preferred platforms, followed by YouTube (24.2%) and Amazon Prime (17.2%), while a small percentage (5.5%) use other platforms. This suggests that streaming preferences are fairly distributed, with a slight inclination toward Netflix.

Independent sample T-test showing association between personal device ownership and Sleep Disruption:

Null Hypothesis (H0)

There is no significant relationship between binge watching and sleep disruption among teenagers.

Independent Samples T-Test

Variable		Statistic	df	p
Sleep Disruption	Student's t	1.17	126	.244

Note: $H_a\ \mu_1 \neq \mu_2$

Interpretation

Hypothesis is retained. An independent samples t-test was conducted to examine whether there is a significant difference between the means of the two groups for the variable "Sleep Disruption." The results of the test indicated that the calculated t-value was 1.17 with 126 degrees of freedom, and the corresponding p-value was 0.244. Since the p-value is greater than the commonly accepted level of significance (0.05), the result is not statistically significant. This implies that there is insufficient evidence to conclude that a meaningful difference exists between the two group means. Therefore, the null hypothesis (H_0), which states that there is no difference between the populations means ($\mu_1 \neq \mu_2$), is retained. In conclusion, any observed difference between the groups can be attributed to random variation rather than a true underlying effect.

Independent Samples T-Test

		Statistic	df	p
Binge Watching	Student's t	0.895	126	.372

Note: $H_a\ \mu_1 \neq \mu_2$

One-Way Anova

Sleep Disruption and Age

	F	df1	df2	p
Sleep Disruption	3.03	2	21.2	.069

Interpretation

The ANOVA result shows that the p-value (0.069) is greater than 0.05, indicating that there is no statistically significant difference in sleep disruption across different age groups. Therefore, age does not significantly influence sleep disruption among teenagers.

Sleep disruption and gender

	F	df1	df2	p
Sleep Disruption	1.24	1	87.5	.269

Interpretation

The p-value (0.269) is greater than 0.05, which indicates that there is no significant difference in sleep disruption between male and female respondents. Hence, gender does not have a significant impact on sleep disruption.

Sleep Disruption and Education Level

	F	df1	df2	p
Sleep Disruption	8.19	1	73.4	.005

Interpretation

The p-value (0.005) is less than 0.05, indicating a statistically significant difference in sleep disruption based on educational level. This suggests that sleep disruption varies between school and college students.

Sleep Disruption and Platform Frequently Used

	F	df1	df2	p
Sleep Disruption	0.304	4	33.1	.873

Interpretation

The p-value (0.873) is greater than 0.05, showing that there is no significant difference in sleep disruption based on the

streaming platform used. Therefore, platform preference does not significantly affect sleep disruption.

Binge Watching and Age
One-Way ANOVA (Welch's)

	F	df1	df2	p
Binge Watching	1.53	2	21.8	.238

Interpretation
The p-value (0.238) is greater than 0.05, indicating that there is no significant difference in binge-watching behaviour across different age groups.

Binge Watching and Gender
One-Way ANOVA (Welch's)

	F	df1	df2	p
Binge Watching	0.0261	1	89.5	.872

Interpretation
The p-value (0.872) is greater than 0.05, which shows that there is no significant difference in binge-watching behaviour between males and females.

Binge Watching and Education Level
One-Way ANOVA (Welch's)

	F	df1	df2	p
Binge Watching	3.76	1	68.7	.056

Interpretation
The p-value (0.056) is slightly greater than 0.05, indicating that there is no statistically significant difference, although it is close to the threshold. This suggests a marginal variation in binge-watching behaviour based on educational level, but it is not strong enough to be considered significant.

Binge Watching and Platform Frequently Used
One-Way ANOVA (Welch's)

	F	df1	df2	p
Binge Watching	0.176	4	33.2	.949

Interpretation
The p-value (0.949) is much greater than 0.05, indicating that there is no significant difference in binge-watching behaviour based on the platform used.

Correlation analysis
Correlation Matrix

Variables		Sleep Disruption	Binge Watching
Sleep disruption	Pearson's r	—	
	df	—	
	p-value	—	
Binge-watching	Pearson's r	0.753	—
	df	126	—
	p-value	<.001	—

Interpretation
$R = 0.753$, $p < 0.001$
The correlation coefficient indicates a strong positive relationship between the variables, and since $p < 0.05$, this relationship is statistically significant. The null hypothesis of no correlation is rejected

Findings, Suggestion and Conclusion
Findings
The present study examined the impact of binge-watching on sleep disruption among teenagers, and several important findings emerged from the analysis. The sample predominantly consisted of respondents aged 18–19 years, indicating that late adolescents formed the major portion of the study population. A higher proportion of participants were female, suggesting greater participation from female respondents. In terms of educational background, most respondents were college students, reflecting that the study largely represents individuals pursuing higher education. Additionally, a vast majority of teenagers reported owning personal digital devices, highlighting the widespread accessibility to streaming platforms. Among these platforms, Netflix and Disney+ Hotstar were the most preferred, followed closely by YouTube, indicating a high level of engagement in digital streaming activities.
The descriptive analysis revealed that both binge-watching behaviour and sleep disruption were present at moderately high levels among teenagers, suggesting that these patterns are quite common.
Further statistical analysis using the independent samples t-test indicated no significant differences in binge-watching behaviour across the compared groups. However, the correlation analysis demonstrated a strong positive relationship ($r = 0.753$) between binge-watching and sleep disruption, indicating that an increase in binge-watching is associated with higher levels of sleep disruption. This relationship was found to be statistically significant, leading to the rejection of the null hypothesis in the correlation analysis.
Moreover, the ANOVA results showed that educational level has a significant impact on sleep disruption, whereas other demographic factors such as age, gender, and streaming platform preference did not show any statistically significant differences. Similarly, binge-watching behaviour did not significantly vary across demographic variables including age, gender, educational level, or platform used. Overall, the findings of the study suggest that binge-watching is a key factor influencing sleep disruption among teenagers, even though its intensity remains relatively consistent across different demographic groups.

Suggestion
The findings of the present study suggest several important recommendations for improving future research and practical application. First, increasing the sample size is essential, as a larger number of respondents would enhance the accuracy and reliability of the results and help researchers identify clearer patterns and differences among various groups. A broader sample also improves the generalizability of the findings to a wider population. In addition, improving data collection methods is highly recommended. The use of well-structured questionnaires, standardized survey instruments, and validated measurement scales can ensure consistency, reduce response bias, and increase the overall quality of the collected data.
Future studies should also consider incorporating additional demographic and background variables such as age, educational qualification, income level, occupation, and level of experience. Including these variables would provide a deeper understanding of how different personal and social factors influence the outcomes of the study. Furthermore,

conducting advanced statistical analyses such as regression analysis, factor analysis, or structural equation modeling can help researchers explore complex relationships between variables and generate more meaningful interpretations beyond basic statistical testing.

Even in cases where statistical differences are not highly significant, organizations and researchers should not ignore the practical implications of the findings. Managerial and real-world decisions often depend not only on statistical significance but also on operational relevance, user behavior, and practical outcomes. The strong positive correlation identified in the study ($r = 0.753$, $p < 0.001$) indicates a meaningful relationship between the variables examined, suggesting that organizations and policymakers should strengthen strategies and interventions connected to these related factors to achieve better results.

Moreover, the scope for future research remains wide. Similar studies can be conducted across different geographical locations, educational institutions, industries, or cultural settings to compare results and validate the consistency of findings. Longitudinal studies can also be undertaken to examine changes over time and identify long-term trends. By expanding the research scope and adopting improved methodological approaches, future studies can contribute to more comprehensive knowledge, stronger theoretical development, and more effective practical applications in the relevant field.

Conclusion

The present study aimed to examine the impact of binge-watching on sleep disruption among teenagers in the digital streaming era. The findings reveal that binge-watching has become a common behaviour among teenagers, largely due to easy access to personal devices and popular streaming platforms.

The analysis indicates that teenagers experience a moderately high level of both binge-watching and sleep disruption, suggesting that these behaviours are closely linked to their daily routines. The correlation results confirm a strong and statistically significant relationship between binge-watching and sleep disruption, implying that increased screen time and prolonged viewing, especially during late-night hours, negatively affect sleep patterns.

Although demographic factors such as age, gender, and platform preference do not show significant differences, educational level plays an important role in influencing sleep disruption, highlighting variations between school and college students. Additionally, binge-watching behaviour appears to be consistent across different groups, indicating its widespread nature.

Overall, the study concludes that binge-watching is a significant contributing factor to sleep disruption among teenagers, which may further affect their daytime tiredness, concentration, and overall well-being. Therefore, there is a need for greater awareness among teenagers regarding healthy viewing habits and proper sleep routines to minimize the negative effects of excessive binge-watching.

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