

Online Binge-Watching Among Chinese College Students: Implications for Loneliness, Anxiety, and Depression

Haoyuan Yu ¹, Farideh Alizadeh ²

¹Faculty of Creative Arts, University of Malaya (UM), Kuala Lumpur, 50603, Malaysia; ²Drama Department, Faculty of Creative Arts, University of Malaya (UM), Kuala Lumpur, 50603, Malaysia

Correspondence: Farideh Alizadeh, Drama Department, Faculty of Creative Arts, University of Malaya (UM), Kuala Lumpur, 50603, Malaysia, Tel +60 172552146, Email farideh@um.edu.my

Purpose: This study aimed to investigate binge-watching behavior and addiction among a sample of 446 Chinese college students and assess its consequences for mental health, with a particular focus on feelings of loneliness, anxiety, and depression.

Participants and Methods: We conducted an online survey to gather data, examining participants' binge-watching habits and preferred platforms. We also utilized regression analysis to assess the impact of binge-watching addiction on mental health, exploring the associations between binge-watching addiction and feelings of loneliness, anxiety, and depression.

Results: Our findings revealed that the Chinese college students in our study typically defined binge-watching sessions as lasting approximately 7.22 hours, with an average of 10.83 episodes. Regarding the self-assessment of binge-watching, the average duration of participants was 5.76 hours, and the average number of episodes was 7.42. Tencent Video, iQIYI, and Bilibili emerged as the dominant platforms for binge-watching among the respondents. Regression analysis demonstrated a significant link between binge-watching addiction and mental health, with positive associations observed between binge-watching addiction and increased feelings of loneliness, anxiety, and depression.

Conclusion: The results of this study reinforce previous findings regarding the detrimental effects of excessive media consumption on mental well-being. Moreover, they provide valuable insights into the global prevalence of binge-watching and its impact on the psychological health of young adults in the digital age, emphasizing the need for proactive measures to address this issue.

Keywords: binge-watching, addiction, mental health, college students, Chinese

Introduction

The proliferation of video websites and streaming media platforms in recent years has sparked a significant transformation in the way content is consumed and how it impacts the lives of individuals,¹ particularly young adults.² For example, the rapid development of Netflix has led many young people to binge-watch online.³ Likewise, influential video websites and apps have emerged in China, including Tencent Video and iQIYI.⁴ One result of the impact of these shifts in technology has been a surge in online binge-watching behavior.³

During the COVID-19 pandemic, the world witnessed increased binge-watching as people sought solace and entertainment within the confines of their homes.^{5,6} The public health crisis led to lockdowns, social distancing measures, and heightened uncertainty, creating an environment where individuals turned to binge-watching as a means of escape and relaxation.^{6,7}

There is no uniform definition of binge-watching, and when researchers refer to binge-watching, they usually consider the number of episodes watched at one time, the frequency, and what is being watched. Some studies define binge-watching as watching multiple episodes of a television series at once; others use the definition created by Netflix, which states that binge-watching is watching 1 to 6 episodes of a television series at a time.⁸ There are also studies that consider binge-watching to be 3.82 hours and 4.55 episodes per watching session.⁹

In the contemporary media landscape, binge-watching has emerged as a favored leisure activity, particularly among young adults.¹⁰ This phenomenon, characterized by the immersive and consecutive consumption of multiple episodes or entire seasons of television series and digital content, has become a defining feature of the entertainment preferences of youth.¹¹ The allure of binge-watching lies in its capacity to offer a sense of escape,¹² narrative engagement,¹³ and a unique form of relaxation, making it an activity that young people ardently embrace in their daily lives.^{10,13,14}

Binge-watching has become a habitual activity for many young adults around the world,^{8,15} and this is certainly the case in China. While binge-watching is widely recognized as a form of leisure and entertainment, however, its excessive and compulsive nature has raised concerns about its potential consequences for the mental health of adolescents.^{14,16} Loneliness, anxiety, and depression, three interrelated aspects of mental health, have become focal points for understanding the impact of binge-watching on well-being.

Loneliness, which is characterized by a sense of social isolation and a lack of meaningful social connections, is an aspect of mental health associated with binge-watching. Several studies have shown a positive correlation between binge-watching and increased loneliness.^{8,17} Since the solitary nature of binge-watching may cause individuals to remain isolated for extended periods of time, this may lead to a diminished sense of connection to the outside world.¹⁴ In this case, the act of binge-watching may allow an individual to avoid real-life interactions, potentially exacerbating feelings of loneliness.

Anxiety is another common mental health problem among college students, and it has been the subject of investigations regarding binge-watching behavior. Although findings in this area are mixed, several studies have emphasized the positive correlation between the extent of binge-watching and anxiety levels.^{15,18} The intense and immersive nature of binge-watching, which is often characterized by emotionally charged narratives and suspense, may lead to increased anxiety;⁸ through binge-watching individuals may become emotionally invested in the content, which can lead to increased stress and worry.¹⁹

Depression is another prevalent mental health issue, and it is a concern associated with binge-watching. Research has shown that, when people engage in excessive binge-watching, they tend to neglect other life responsibilities; this can lead to the development or exacerbation of depressive symptoms.²⁰ Withdrawal into the virtual world, as well as the loss of real-life social connections, may lead to a lack of motivation and engagement in daily activities; this may result in feelings of hopelessness and helplessness.²¹

Previous literature has suggested that binge-watching affects people's mental health.^{22–24} Despite the widespread popularity of binge-watching, however, little research has been conducted to specifically define binge-watching behavior among young Chinese individuals. How many episodes does binge-watching entail? How long does a session last? The answers to these questions are currently unclear in the context of young Chinese individuals' binge-watching behavior. In addition, few studies have comprehensively explored the effects of binge-watching behavior on mental health.

To investigate the potential impact of online binge-watching on the mental well-being of Chinese college students (CCSs), this study formulates several hypotheses. We propose that engaging in online binge-watching is positively correlated with feelings of loneliness, heightened levels of anxiety, and increased levels of depression among CCSs. The structured approach in this study aims to comprehensively examine the potential psychological effects of online binge-watching within the context of CCSs' mental health.

The research aims to bridge the gap in the existing knowledge by providing a clear definition of binge-watching behavior among CCSs. Further, it seeks to elucidate the relationships between online binge-watching and the experiences of loneliness, anxiety, and depression within this demographic. Understanding these relationships is vital for addressing the potential consequences of binge-watching and its impact on the psychological well-being of young adults in China.

As digital technology continues to shape the media landscape and the habits of CCSs, it is of paramount importance to assess the psychological implications of their media consumption practices. This research is intended to shed light on the intricate connections between online binge-watching, loneliness, anxiety, and depression, thereby contributing to a better understanding of the evolving digital culture and its effects on the mental health of Chinese youth.

Materials and Methods

Research Design

This study implements a cross-sectional research design that combines quantitative data collection methods. The primary instrument for data collection is a structured questionnaire consisting of the four following sections: (1) a survey of binge-watching behavior; (2) a survey of binge-watching addiction (BWA); (3) self-measurement scales for mental health, which encompass assessments of loneliness, anxiety, and depression; and (4) a participant information sheet.

Measures

The questionnaire was carefully designed to gather comprehensive data regarding binge-watching behavior, BWA, and mental health outcomes among CCSs. It comprises four parts, as outlined below.

Binge-Watching Behavior

This study was based on the survey questions about binge-watching behavior developed by Aghababian et al.⁹ Participants self-defined binge-watching based on the number of hours and episodes they thought could be considered binge-watching. The items included the following: “How many episodes watched at one time do you think would be binge-watching behavior?” and “How many hours of watching at one time do you think would be binge-watching behavior?” With reference to their definitions, participants reported their binge-watching duration (“How long do you usually binge-watch each time?”), the number of episodes in a binge-watching session (“How many episodes do you usually binge-watch each time?”), and the binge-watching platform (“What platform do you usually use to binge-watch episodes?”). The questionnaire listed six top-ranked video broadcasting websites or apps and others in China for participants to choose from, and each participant could choose one to three platforms on which they binge-watch series most often.

Binge-Watching Addiction

BWA was measured using the Binge-Watching Addiction Scale (BWAS), which includes five-point Likert scale items. The BWAS was developed by Forte et al.²⁴ and it was used in this study to assess the extent of online BWA among CCSs. The BWAS is a one-dimensional scale containing 20 items rated on a five-point Likert scale (1: “never” to 5: “always”). Higher scores indicate higher levels of BWA.

Mental Health Problems

Loneliness was measured using the six-item De Jong Gierveld Loneliness Scale (DJGLS), which has been found to be a reliable and valid measure of loneliness.²⁵ The Chinese DJGLS uses a five-point Likert scale to rate all items,²⁶ 1: “strongly disagree” to 5: “strongly agree”. The total score is calculated by adding up the six items, with higher scores indicating greater loneliness.

The Hospital Anxiety and Depression Scale (HADS) is a frequently used self-rating scale that was developed to assess psychological distress in nonpsychiatric patients. The HADS was developed by Zigmond and Snaith²⁷ to measure symptoms of anxiety and depression, and it consists of 14 items, with seven on the anxiety subscale (HADS-A) and seven on the depression subscale (HADS-D). The HADS-A focuses on the symptoms of generalized anxiety disorder, while the HADS-D focuses on the lack of pleasure, which is the main symptom of depression.²⁷ The Chinese version (Mandarin) of the HADS was translated and tested by Leung et al.²⁸ Each item is scored on a response scale between 0 and 3.

Participant Information Sheet

The final section of the questionnaire is the Participant Information Sheet. This reports participants’ demographic characteristics, including age, gender, and region.

Procedure

Based on the nature of this study, the inclusion criteria for participants were as follows: (1) age of 17 years and above, (2) enrollment in college, and (3) regular or more intensive viewing of serials on video websites or apps. Participants were recruited via multiple social networking platforms (eg, WeChat, Weibo, Xiaohongshu, Douyin, etc.), and the questionnaire was disseminated via an online link on Wenjuanxing.

Informed consent was obtained from all participants before completing the survey. They were aware of the purpose of this study and agreed to participate in the survey. The survey was anonymous, no personally identifiable information was recorded in the data, and participants had the right to withdraw at any time. Data were collected from 446 Chinese university students between October 5 and October 14, 2023. Of these, there were 101 (23.99%) men and 339 (76.01%) women. The mean age of the participants was 20.9 years, with a maximum age of 30 years and a minimum age of 17 years. Participants were mainly from Jiangsu ($n = 97$, 21.7%), Hunan ($n = 89$, 19.9%), Hubei ($n = 79$, 17.7%), Jiangxi ($n = 51$, 11.3%), Heilongjiang ($n = 46$, 10.3%), Chongqing ($n = 29$, 6.5%), Shandong ($n = 23$, 5.2%), Shanxi ($n = 15$, 3.4%), and other provinces.

Data Analysis

SPSS software was used to analyze the data in this study. The study first tested the reliability and validity of the independent and dependent variables using the software. Then, the definition and behavior of CCSs toward binge-watching were tested using descriptive statistics (standard deviation and mean). Finally, the relationship between the independent and dependent variables was explored with regression analysis.

Results

Before analyzing the data, we tested the reliability and validity of the observed indicators using SPSS® (Table 1). The Kaiser–Meyer–Olkin (KMO) values were all greater than 0.8 ($p = 0.000$), and the α values were all greater than 0.9. Thus, the data passed the reliability and validity tests and could be used for further analysis; this indicated that the data were suitable for factor analysis.²⁹

Table 2 and Figure 1 show the definitions and self-assessment results of online binge-watching behavior by CCSs. Regarding the definition of binge-watching, the mean duration was 7.22 hours ($SD = 4.958$), and the mean number of

Table 1 Reliability and Validity of the Study

	Bartlett's Test of Sphericity		Cronbach's Alpha
	KMO	p	α
BWAS	0.930	0.000***	0.924
DJGLS	0.885	0.000***	0.932
HADS-A	0.933	0.000***	0.947
HADS-D	0.934	0.000***	0.939

Note: *** $p < 0.001$.

Abbreviations: BWAS, Binge-Watching Addiction Scale; DJGLS, De Jong Gierveld Loneliness Scale; HADS-A, Hospital Anxiety and Depression Scale—Anxiety; HADS-D, Hospital Anxiety and Depression Scale—Depression.

Table 2 Descriptive Analysis of Binge-Watching Among CCSs

	Mean	SD	Md
Definition			
Binge-watching hours	7.222	4.958	5.000
Binge-watched episodes	10.825	6.273	10.000
Self-assessment			
Binge-watching hours	5.756	5.499	4.000
Binge-watched episodes	7.417	6.131	5.000

Abbreviations: CCS, Chinese college student; SD, standard deviation; Md, median.

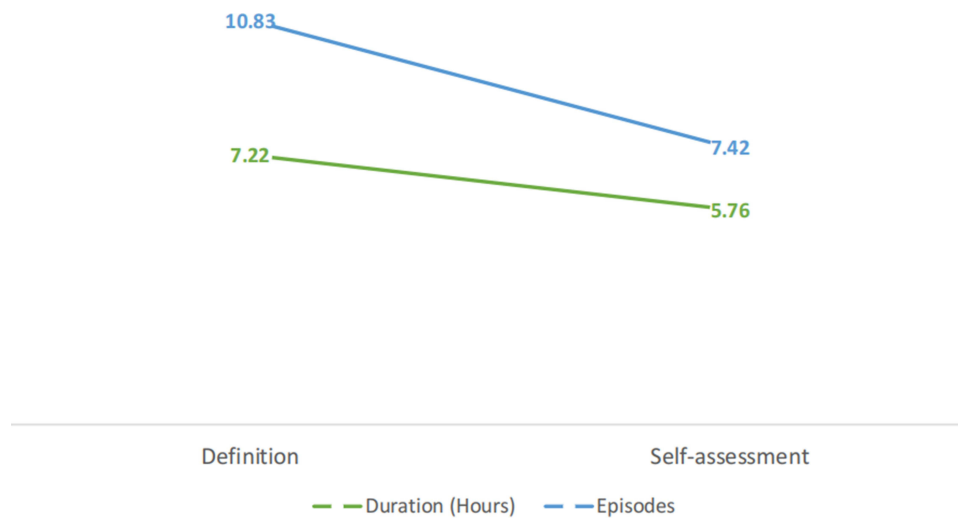


Figure 1 Descriptive analysis of binge-watching among CCSs.

episodes was 10.83 (SD = 6.27). Regarding the self-assessment of binge-watching, the mean duration was 5.76 hours (SD = 5.50), and the mean number of episodes was 7.42 (SD = 6.13).

From the statistical analysis, we can see the ranking of online binge-watching platforms among CCSs (Table 3 and Figure 2). Tencent Video (n = 262, 58.7%) is ranked first, iQIYI (n = 246, 55.1%) is ranked second, and Bilibili (n = 145, 32.5%) is ranked third.

In this study, three separate linear regressions were done. The combined results are shown in Table 4, which illustrates the relationships between BWA as the independent variable and the dependent variables, including loneliness, anxiety, and depression. The analysis was conducted to explore the impact of BWA on these dimensions of mental health among the study participants. The table provides unstandardized coefficients (B), standard errors, beta values, t-values, and p-values, indicating the significance of each relationship. In addition, variance inflation factor (VIF) values, R² (proportion of variance explained), and ΔR^2 (change in R²) are presented to assess multicollinearity and the overall model fit.

As illustrated in Table 4, the linear regression analysis with BWA as the independent variable and loneliness, anxiety, and depression as the dependent variables showed that the model equation is as follows:

(1) Loneliness = 4.822 + 0.175*BWA, and the model R² value is 0.180, implying that BWA explains 18.0% of the variation in Loneliness. The model passed the F-test (F = 97.259, p = 0.000), which indicates that BWA must have an

Table 3 Ranking of Online Binge-Watching Platforms Among CCSs

Online platform	Frequency	Percent
Tencent Video	262	58.74%
iQIYI	246	55.16%
Bilibili	145	32.51%
Youku	115	25.78%
Douyin	86	19.28%
Mango TV	85	19.06%
Other	79	17.71%

Abbreviation: CCS, Chinese college student.

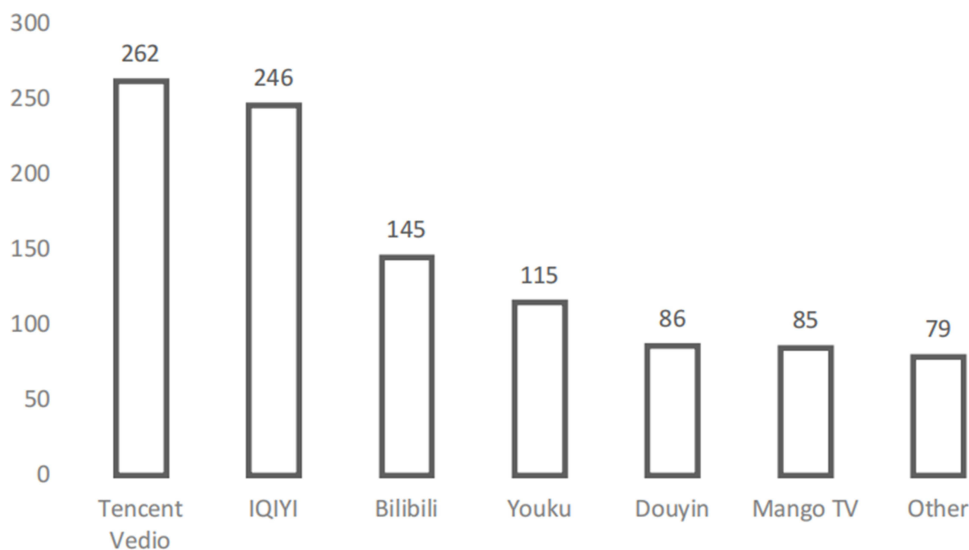


Figure 2 Ranking of online binge-watching platforms among CCSs.

impact relationship on Loneliness, so BWA will have a significant positive impact relationship on Loneliness, Beta = 0.424, $p < 0.001$.

(2) Anxiety = $6.426 + 0.191 \cdot \text{BWA}$ with a model R² value of 0.160, meaning that BWA explains 16.0% of the variation in Anxiety. The model passed the F-test ($F = 84.446, p = 0.000$), which means that BWA must have an influence relationship on Anxiety, Beta = 0.400, $p < 0.001$.

(3) Depression = $4.619 + 0.207 \cdot \text{BWA}$ with a model R² value of 0.203, implying that BWA explains 20.3% of the variation in Depression. The model passed the F-test ($F = 112.916, p = 0.000$), which means that BWA must have an influence relationship on Depression, Beta = 0.450, $p < 0.001$.

The VIF values suggest no multicollinearity issues among the independent variables. The proportion of variance explained (R²) by each regression model ranges from 0.160 to 0.203, emphasizing the substantial impact of BWA on the respective dimensions of mental health. The change in R² (Adjusted R²) demonstrates the unique contribution of each independent variable to the overall model fit.

Discussion

In this study, we surveyed 446 CCSs to explore their binge-watching behaviors and to examine the impact on their mental health, including associations between binge-watching behavior and CCSs' loneliness, anxiety, and depression. The

Table 4 Regression Analysis of BWA and Mental Health Problems Among CCSs

Dependent variable	B	Error	Beta	t	p	VIF	R ²	ΔR ²
Constant	4.822	0.999	–	4.825	0.000**	–	0.180	0.178
Loneliness	0.175	0.018	0.424	9.862	0.000**	1.000		
Constant	6.426	1.172	–	5.484	0.000**	–	0.160	0.158
Anxiety	0.191	0.021	0.400	9.189	0.000**	1.000		
Constant	4.619	1.097	–	4.211	0.000**	–	0.203	0.201
Depression	0.207	0.019	0.450	0.207	0.000**	1.000		

Notes: Independent Variable: BWA, Binge-Watching Addiction. Dependent Variables: Loneliness, Anxiety, Depression. ** $p < 0.01$.

Abbreviations: BWA, binge-watching addiction; CCS, Chinese college student.

results of the study showed that CCSs' definitions of binge-watching behavior and viewing duration were greater than those found in previous studies. There were associations between binge-watching behavior and CCSs' loneliness, anxiety, and depression levels. These findings lay the foundation for an in-depth exploration of the substantial impact of binge-watching on the mental health of CCSs.

The study delved into the behavior and definitions of binge-watching among the selected demographic. Descriptive analyses unveiled that these students defined an average binge-watching session as approximately 7.22 hours, accompanied by an average of 10.83 episodes watched. These results are higher than those found previous studies, such as in Aghababian et al⁹ research, in which participants defined binge-watching as 3.82 hours per viewing, or 4.55 episodes.

Regarding the self-assessment of binge-watching, the average duration of participants was 5.76 hours, and the average number of episodes was 7.42. Interestingly, participants' self-assessment results were lower than the values they defined, suggesting a tendency to underestimate the extent of their binge-watching habits. This aligns with prior research, which has shown that individuals often underreport screen time and media consumption.^{30,31}

Our results identified Tencent Video, iQIYI, and Bilibili as the primary platforms used for binge-watching by CCSs. This reflects the growing influence of these platforms in shaping the online media landscape. Tencent Video, in particular, has become a dominant player in the streaming industry, offering a diverse array of content to meet the preferences of young viewers.³² Similarly, in the West, leading streamers such as Netflix and Amazon Prime have become the main binge-watching platforms.^{33–35}

Comparing our findings with those of previous literature reveals a global trend in binge-watching behavior. Similar to studies in Western contexts, CCSs engage in prolonged binge-watching sessions, reflecting the cross-cultural universality of this phenomenon. The findings emphasize the need for understanding binge-watching within a broader cultural context, considering both the shared and unique aspects of this behavior.

Crucially, our study unearthed a compelling association between BWA and the mental health of CCSs. The regression analysis demonstrated that BWA had a significant impact on feelings of loneliness, anxiety, and depression.

BWA was positively associated with increased levels of loneliness, with a beta coefficient of 0.424. This result mirrors findings from prior research, which consistently link excessive screen time and media consumption, including binge-watching, to heightened feelings of loneliness.^{18,22,36} The solitary nature of binge-watching, characterized by long hours spent in isolation, may contribute to these increased feelings of social disconnectedness.³⁷ Our analysis revealed that BWA had a positive effect on anxiety, as indicated by a beta coefficient of 0.400. This aligns with previous studies that suggest a positive correlation between excessive screen time and anxiety.^{38–40} The immersive nature of binge-watching, which may involve emotional investment in the content, could contribute to heightened anxiety levels.¹⁰

BWA was also positively associated with depression, as indicated by a beta coefficient of 0.450. This aligns with previous research that has identified a strong link between media addiction and depressive symptoms.^{41–43} The intense and immersive nature of binge-watching, which can lead to neglecting other aspects of life, may also contribute to the development of depressive symptoms.⁴⁴

Our findings align with previous research on binge-watching and its effects on mental health, both in China and globally. This study reinforces the existing knowledge that links BWA to feelings of loneliness, anxiety, and depression. These findings resonate with those of studies conducted in Western and other non-Western contexts that have underlined the universality of these associations.

Conclusion

In conclusion, our study provides insights into binge-watching among Chinese university students. Participants watched about 10.83 episodes per session, and each session lasted about 7.22 hours; however, they often underestimated their binge-watching habits. Tencent Video, iQIYI, and Bilibili as the primary platforms used for binge-watching by CCSs.

Our study revealed an association between BWA and the mental health of CCSs. It was found that BWA substantially affects loneliness, anxiety, and depression; this finding is consistent with prior research linking screen time, including binge-watching, to social disconnectedness and depressive symptoms, a phenomenon that seems to transcend cultural boundaries.

As binge-watching captures global attention, our study highlights the importance of addressing its mental health implications. The study adds to the knowledge about this media behavior, stressing the need for responsible consumption and interventions promoting digital well-being among college students and the wider population. The findings can guide future research and public health initiatives in this digital era.

Limitations and Recommendations

In this study, several limitations must be acknowledged. First, the research primarily focused on CCSs, potentially limiting the generalizability of the findings when it comes to other demographic and cultural contexts. In addition, the study relied on self-reported data, which may be subject to social desirability bias and reporting inaccuracies. Furthermore, the cross-sectional research design used in this study does not permit the establishment of causal relationships. The study focused on a limited set of variables but neglected other potential influencing factors, such as social support and coping strategies. A single-method approach using quantitative measures may only partially capture the nuanced experiences of individuals.

To overcome these limitations, future research should adopt a more diverse and inclusive sampling strategy that considers different demographics and cultural backgrounds. Longitudinal studies can provide insights into the dynamics of binge-watching behavior and its effects on mental health over time. Exploring the impact of content genres and themes on mental health and conducting qualitative research to gain a deeper understanding of individuals' experiences would contribute to a comprehensive understanding. Moreover, mediation and moderation analysis could help uncover the underlying mechanisms and conditional factors in the relationship between binge-watching and mental health. Finally, future research could focus on developing and testing interventions and educational programs to promote responsible binge-watching and improve mental health outcomes.

Acknowledgement

We extend heartfelt gratitude to the participants, reviewers, and the creators of the assessment tools. Special thanks to MAPI Research Trust for granting permission to use HADS in this study.

Disclosure

The authors report no conflicts of interest in this work.

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