



Is Watching TV Series an Adaptive Coping Strategy During the COVID-19 Pandemic? Insights From an Italian Community Sample

Valentina Boursier^{1*}, Alessandro Musetti², Francesca Gioia¹, Maèva Flayelle³, Joël Billieux³ and Adriano Schimmenti⁴

¹ Department of Humanities, University of Naples Federico II, Naples, Italy, ² Department of Humanities, Social Sciences and Cultural Industries, University of Parma, Parma, Italy, ³ Institute of Psychology, Faculty of Social and Political Sciences, University of Lausanne, Lausanne, Switzerland, ⁴ Faculty of Human and Society Sciences, Kore University of Enna, Enna, Italy

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*Correspondence:

Valentina Boursier
valentina.boursier@unina.it

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Social distancing and lockdown due to the COVID-19 pandemic substantially impacted individuals' daily habits and well-being. Within such a context, digital technology may provide a welcome source of alternative forms of connection and entertainment. Indeed, streaming services showed a remarkable increase in membership subscriptions throughout the period considered. However, excessive involvement in watching TV series has recently become a subject of scholarly concern as it may represent an emerging form of addictive behavior with the features of what has been labeled as "binge-watching" (i.e., watching multiple episodes of TV series in a single session). The current study aimed to assess TV series watching behaviors and related motivations, as well as their relationships with depression, stress and anxiety, in a sample of Italian adults during the COVID-19 lockdown. Specifically, we aimed to explore which patterns of motivations and emotional states influenced either a high but healthy engagement in watching TV series, or promoted problematic and uncontrolled watching behavior under such circumstances. A total of 715 adults ($M = 31.70$, $SD = 10.81$; 71.5% female) from all over Italy were recruited (from 1st to 30th April 2020) through advertisements *via* social media platforms of Italian university communities and other online groups. Two multiple hierarchical regression analyses were performed with non-problematic and problematic TV series watching set as dependent variables. Results showed that people spent more time watching TV series during the pandemic lockdown, especially women who also reported higher levels of anxiety and stress than men. Moreover, both non-problematic ($R^2 = 0.56$; $p < 0.001$) and problematic ($R^2 = 0.33$; $p < 0.001$) TV series watching behaviors were equally induced by anxiety symptoms and escapism motivation, thereby suggesting that watching TV series during the COVID-19 lockdown probably served as a recovery strategy to face such a stressful situation. Finally, our findings also suggest that enrichment motives may protect from uncontrolled and potentially addictive watching behaviors. These findings, therefore, hold important implications, particularly for avoiding the over-pathologization of excessive involvement in online activities emerging as a result of specific distressing situations.

Keywords: anxiety, binge-watching, watching TV series motives, COVID-19, coping strategies

INTRODUCTION

The recent COVID-19 pandemic has caused worldwide derangement. Governments imposed lockdown and measures of social distancing, ruling restrictions that highly affected individuals' daily routine and impacted on people's behaviors and psychological well-being (1–5). A wide body of international literature has thus investigated how the outbreak emergency has affected mental health (2, 6–10), forcing individuals to cope with uncertainty, fears, isolation and feelings of stress, anxiety and depression (3, 11, 12). A recent meta-analytic study indeed provided evidence of increased rates of depression (24%), anxiety (26%), post-traumatic stress symptoms (15%), and poor sleep quality (34%) in the general population following the Covid-19 outbreak (13). More specifically, Italy was the first European country to face the pandemic emergency, and recent studies involving Italian samples suggested that lonely as well as depressive individuals have been more likely to perceive the COVID-19 outbreak and related containment measures as distressful (14–17).

Notably, the use of digital technology has been recommended, as it provides alternative forms of connection and entertainment in an unprecedented period of social distancing and lockdown even though the effects of social media consumption in this specific circumstance need to be carefully addressed (18, 19), as recently showed (14, 20). From the 1st weeks of pandemic, media companies reported an exponential growth in media consumption by different types of users among generations, especially highlighting an increasing search for updated information among young and middle-aged individuals (21). More particularly, streaming service trends revealed a definite impact of COVID-19 quarantining with a sharp increase in membership subscriptions—for example, a 104% increase in Netflix subscribers and 633% in Disney Plus subscribers were observed between January and April 2020 at the worldwide level (22, 23). As regards Italy specifically, since March 2020, Netflix and the newcomer Disney Plus have recorded an increase of accesses of 332 and 290%, respectively (24).

Over the last decade, the concept of watching television has undergone a transition. Video-on-demand (VoD) services (e.g., Netflix, Amazon Prime, Rakuten) revolutionized viewing practices impacting on consumers' engagement (25). Indeed, these online streaming platforms offer permanently available programs (26), which implies that, unlike traditional TV viewers, VoD subscribers can watch TV series at their own convenience [i.e., *what, when, where* and *how* they want; (27)]. In this regard, watching multiple episodes of a TV series all in one go has become a very popular viewing pattern (28–30). Consequently, the implications of these changes in viewing practices are increasingly fueling the scientific debate (31–37) on the potential harmfulness of what has been labeled “binge-watching” (i.e., watching multiple episodes of TV series in a single session).

Binge-watching became better known in 2013, when the Oxford Dictionaries placed it in the Word of the Year shortlist (38). Rapidly, binge-watching has become a daily and widespread habit among TV series viewers as a part of a trend (27) reflecting

a taste for immediate gratification (39) and/or a social tool to share opinions with friends, thereby reinforcing a sense of belongingness (40).

Previous research assessing binge-watching behaviors highlighted higher engagement among women (33, 41, 42) and young people (27, 43, 44). Moreover, scholars analyzed the relationships between psychopathological symptoms and binge-watching behaviors, pointing out a positive association between binge-watching and depression (27, 45) as well as anxiety (46). Thus, individuals experiencing negative affect and emotions might be more prone to engage in problematic binge-watching as a coping strategy (33, 47, 48). However, it was recently proposed that binge-watching induced by escapist motivations (i.e., motives related to coping with adverse life events or negative affect by immersing oneself in a TV series) can paradoxically contribute to recovery from stress (49).

In this regard, excessive involvement in watching TV series has recently become a matter of concern, leading scholars to debate on the differences between what reflects a non-problematic recreational activity (a healthy engagement or a “passion”) and what constitutes an excessive and uncontrolled form of behavior associated with negative consequences, functional impairment, and distress (34, 36, 47). Initial evidence indeed suggests that binge-watching may represent an emerging addictive behavior (50–52), which is reflected in individuals' loss of control over watching time (31, 50, 52, 53), impairment of day-to-day functioning (53), sleep quality (54, 55), and social relationships (53, 56).

Undoubtedly, the functionally impairing nature of the engagement has been evidenced as a critical dimension when considering problematic involvement in a specific behavior (57–59), and a key element that prevents from the risk of over-pathologizing everyday life activities (60). In this regard, particular attention should be paid to the motivations underlying binge-watching and its potential consequences (44, 48). Indeed, previous studies stated a wide range of motivations for engaging in watching TV series [e.g., social interaction, relaxation, escapism from reality, coping with stressful circumstances; (32, 42, 44, 47, 49, 61)]. Accordingly, relationships between various motives for watching TV series and unproblematic/problematic viewing behaviors (i.e., different levels of engagement or loss of control in binge-watching) is a key issue which needs to be considered (32). More specifically, individuals' engagement in watching TV series during the current pandemic deserves particular attention, as different motivations related to different levels of involvement in such activity might reflect adaptive or maladaptive responses to this unprecedented context.

The current study thus aimed to assess TV series viewing behaviors and related motivations, as well as their relationships with depression, stress and anxiety in a sample of Italian adults during the COVID-19 lockdown. Within this context, our particular aim was to explore which patterns of motivations and emotional states specifically influenced either a high but healthy involvement in watching TV series, or promoted a problematic and uncontrolled viewing behavior.

We not only hypothesized that psychopathological symptoms would affect TV series watching behaviors, but also that viewing

motivations would particularly discriminate between healthy and problematic involvement in this activity. In particular, we predicted that coping/escapism motive could be related to both healthy and problematic involvement, whereas differences could be found concerning other motivations to watch TV series, such as those related to emotional enhancement, personal enrichment, and the fostering of social connection.

METHODS

Participants and Procedure

A cross-sectional design was adopted during the COVID-19 pandemic emergency, covering the lockdown period in Italy that was declared on 9th March and was implemented across the entire country till 3rd May. A total of 715 adults from all over Italy participated in this study through an online survey system. Participants ranged in age from 18 to 72 ($M = 31.70$, $SD = 10.81$) and 71.5% of the sample were female ($n = 511$). Participants were recruited (from 1st to 30th April 2020) through advertisements in Italian university Web communities and other online groups (*via* social media platforms), which asked for dissemination among their members. There were no specific inclusion criteria, except being of legal age which, according to Italian law, is 18 years of age. The call for participation in the online study contained a website link for participants to click on to complete the questionnaire. Participation was voluntary, and confidentiality and anonymity were ensured. No course credits or remunerative rewards were given. Before filling out the survey, all of the participants were informed about the research aims and its scope, and the measures to be used in generating the data. The participants could withdraw from the study at any time. There were no missing responses because all of the questions were set as mandatory. The current study was approved by the University Federico II (Naples, Italy) Research Ethics Committee and was conducted according to the ethical guidelines for psychological research established by the Italian Psychological Association (AIP). Additional scales assessing individuals' social media use during the COVID-19 pandemic were also administered to this sample. Further findings of this broader research that are not directly relevant for the current study have been discussed elsewhere (14).

Measures

Sociodemographic Information and Time Spent Watching TV Series

In this section, information was collected about gender, age, number of family members at home during the COVID-19 lockdown, and hours spent watching TV series per day before and during forced isolation due to COVID-19. A Δ score was calculated to reflect the difference between hours spent watching TV series during and before the COVID-19 lockdown.

Watching TV Series Engagement and Loss of Control

The extent of TV series watching involvement and problematic binge-watching was assessed using the Italian version of the 40-item Binge-Watching Engagement and Symptoms Questionnaire [BWESQ – (32); Italian version by (62)]. Relevant to the present

research, only two subscales of the questionnaire were used in this study as reflecting adaptive vs. maladaptive TV series watching: *engagement* (e.g., “Watching TV series is one of my favorite hobbies.”) and *loss of control* (e.g., “I sometimes try not to spend so much time watching TV series, but I fail every time.”). Items are scored on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Higher average score on each subscale indicates greater involvement or problematic binge-watching, respectively. The Cronbach's α values obtained in this study were 0.87 (*engagement*) and 0.82 (*loss of control*).

Psychopathological Symptoms

The Depression Anxiety Stress Scale [DASS-21 – (63); Italian version by (64)] was used to measure psychopathological symptoms. The DASS-21 is a 21-item self-report tool using a 4-point Likert scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*), assessing depressive symptoms (e.g., “In the last 7 days, I felt no positive feelings”), anxiety symptoms (e.g., “In the last 7 days, I have had problems breathing”), and stress (e.g., “I found it hard to wind down”). Higher scores correspond to greater severity of psychopathological symptoms. The Cronbach's α values in this study were 0.90 (*depression*), 0.86 (*anxiety*), and 0.90 (*stress*).

Watching TV Series Motives

The Italian version of the Watching TV Series Motives Questionnaire [WTSMQ – (32); Italian version by (62)] was used to assess TV series watching motivations. It is a 22-item scale with four core dimensions: *coping/escapism* (e.g., “I watch TV series to escape reality and seek shelter in fictional worlds.”), *emotional enhancement* (e.g., “I watch TV series to be captivated and experience extraordinary adventures by proxy.”), *enrichment* (e.g., “I watch TV series to develop my personality and broaden my views.”), and *social* (e.g., “I watch TV series to relate to others more easily, because TV series give me something to talk about.”). Items are evaluated on a 4-point Likert scale ranging from 1 (*not at all*) to 4 (*to a great extent*), with a higher average score on each subscale indicating higher motivation for watching TV series. Cronbach's α values in this study were 0.87 (*coping/escapism*), 0.88 (*emotional enhancement*), 0.85 (*enrichment*), and 0.71 (*social*).

Statistical Analyses

Descriptive statistics were computed for all of the study variables. Gender differences were examined through *t*-test and the magnitude of the differences was evaluated with effect sizes (Cohen's *d*). Pearson's *r* correlations were used to explore the associations between the variables. Finally, two multiple hierarchical regression analyses were performed. First, adaptive engagement in watching TV series (i.e., *engagement*) was set as the dependent variable, with sociodemographic characteristics (age, gender, and the number of family members at home during COVID-19 restrictions) and increased time spent watching TV series during COVID-19 restrictions (step 1), anxiety, depression, and stress symptom scores (step 2), as well as WTSMQ domain scores (step 3), set as predictors. Second, maladaptive engagement in watching TV series (i.e., *loss of control*) was set as

TABLE 1 | Descriptive statistics and gender differences for all investigated variables.

	Full sample (N = 715)			Males (n = 204)	Females (n = 511)	<i>t</i> ₍₇₁₃₎	<i>d</i>	95% CI
	M (SD)	Observed range	Possible range	M (SD)	M (SD)			
Δ h/day watching TV series during and before the COVID-19	0.84 (1.16)	−4 – 5	−24 – 24	0.70 (0.97)	0.89 (1.22)	−1.97*	0.17	[−0.38, 0.00]
BWESQ-Engagement	1.89 (0.67)	1 – 3.88	1 – 4	1.81 (0.59)	1.91 (0.70)	−2.03*	0.15	[−0.21, 0.00]
BWESQ-Loss of control	1.48 (0.53)	1 – 4	1 – 4	1.48 (0.50)	1.49 (0.53)	0.81	0.02	[−0.10, 0.07]
WTSMQ-Coping/Escapism	2.02 (0.68)	1 – 4	1 – 4	1.98 (0.62)	2.04 (0.71)	−1.17	0.09	[−0.17, 0.04]
WTSMQ-Enrichment	2.22 (0.83)	1 – 4	1 – 4	2.18 (0.79)	2.24 (0.84)	−0.83	0.07	[−0.19, 0.08]
WTSMQ-Emotional-enhancement	2.15 (0.81)	1 – 4	1 – 4	2.20 (0.79)	2.13 (0.83)	0.98	0.09	[−0.07, 0.20]
WTSMQ-Social	1.33 (0.49)	1 – 4	1 – 4	1.42 (0.56)	1.29 (0.46)	2.84**	0.25	[0.04, 0.21]
Depression	0.99 (0.75)	0 – 3	0 – 3	0.91 (0.70)	1.02 (0.77)	−1.86	0.15	[−0.24, 0.01]
Anxiety	0.69 (0.67)	0 – 3	0 – 3	0.59 (0.60)	0.73 (0.68)	−2.72**	0.22	[−0.24, −0.3]
Stress	1.36 (0.74)	0 – 3	0 – 3	1.23 (0.71)	1.41 (0.75)	−2.79**	0.25	[−0.29, −0.05]

p* < 0.05; *p* < 0.01.

TABLE 2 | Pearson's *r* correlations between the variables.

	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	−0.01	0.06	−0.16**	−0.07	−0.01	−0.04	−0.03	0.04	0.11**	−0.07	−0.10**	−0.10**
2. Age	–	−0.25**	−0.22**	−0.33**	−0.25**	−0.37**	−0.43**	−0.34**	−0.20**	−0.25**	−0.18**	−0.21**
3. Number of family members at home		–	−0.01	0.04	0.07	0.03	0.03	0.00	0.10**	0.06	0.05	0.06
4. Hour per day spent watching TV series during COVID-19 pandemic			–	0.57**	0.33**	0.40**	0.35**	0.33**	0.09*	0.14**	0.13**	0.07
5. BWESQ-Engagement				–	0.61**	0.66**	0.61**	0.69**	0.37**	0.28**	0.24**	0.22**
6. BWESQ-Loss of control					–	0.52**	0.35**	0.47**	0.40**	0.31**	0.27**	0.24**
7. WTSMQ-Coping/Escapism						–	0.62**	0.74**	0.47**	0.48**	0.34**	0.39**
8. WTSMQ-Enrichment							–	0.69**	0.45**	0.32**	0.27**	0.27**
9. WTSMQ-Emotional-enhancement								–	0.45**	0.34**	0.22**	0.28**
10. WTSMQ-Social									–	0.26**	0.23**	0.19**
11. Depression										–	0.70**	0.74**
12. Anxiety											–	0.70**
13. Stress												–

p* < 0.05; *p* < 0.01.

the dependent variable, using the same set of predictors. A level of *p* < 0.05 was set as the level for statistical significance.

RESULTS

Descriptive Statistics

Descriptive statistics are reported in **Table 1** for both the full sample and differentiated by gender, along with the level of significance for gender differences. Participants reported 2.81 h/day spent watching TV series during the pandemic, with an increase of about one episode per day (0.84 h in average) in respect to their pre-COVID-19 watching habits. Females showed a higher increased amount of time watching TV series during the COVID-19 pandemic than males. Females also reported a higher extent of engagement in watching TV series, and higher levels of anxiety and stress symptoms. Males reported a higher motivation in bonding with others through watching TV series.

Subsequently, the intercorrelations between the investigated variables were examined (see **Table 2**). More time spent watching TV series during the COVID-19 pandemic was significantly and positively associated with engagement in watching TV series scores and, to a lesser extent, also with loss of control over TV series watching, coping/escapism, enrichment, and emotional enhancement motives for watching TV series. No further associations were found between increased amount of time spent watching TV series during the COVID-19 pandemic and psychopathological symptoms domain scores.

As reported in **Table 3**, the first hierarchical regression analysis revealed that younger age ($\beta = 0.33$, $p < 0.001$), and increased amount of time spent watching TV series during the COVID-19 pandemic ($\beta = 0.15$, $p < 0.001$) positively predicted adaptive engagement in watching TV series (i.e., *engagement*) at Step 1. These control variables accounted for 14% of the variance. With the inclusion of psychopathological symptoms as

TABLE 3 | Regression: predictors of engagement in watching TV series during the COVID-19 pandemic.

	<i>F</i>	<i>R</i> ²	ΔR^2	<i>B</i>	<i>SE</i>	<i>t</i>	<i>P</i>
Step 1	28.87 ($p < 0.001$)	0.14	0.14				
Age				-0.21	0.00	-9.20	< 0.001
Gender*				-0.09	0.05	-1.79	0.07
Number of family members at home				-0.02	0.02	-0.87	0.38
Δ h/day watching TV series during and before the COVID-19 pandemic				0.09	0.02	4.36	< 0.001
Step 2	22.69 ($p < 0.001$)	0.18	0.04				
Age				-0.02	0.00	-7.68	< 0.001
Gender				-0.07	0.05	-1.29	0.20
Number of family members at home				-0.02	0.02	-0.90	0.37
Δ h/day watching TV series during and before the COVID-19 pandemic				0.09	0.02	4.40	< 0.001
Depression				0.15	0.05	3.04	< 0.01
Anxiety				0.07	0.05	1.36	0.17
Stress				-0.01	0.05	-0.18	0.86
Step 3	80.70 ($p < 0.001$)	0.56	0.38				
Age				0.00	0.00	-0.93	0.35
Gender				-0.10	0.04	-2.63	< 0.01
Number of family members at home				0.02	0.01	1.25	0.21
Δ h/day watching TV series during and before the COVID-19 pandemic				0.05	0.01	3.24	0.01
Depression				-0.04	0.04	-1.06	0.29
Anxiety				0.09	0.04	2.26	0.02
Stress				-0.07	0.04	-1.84	0.07
WTSMQ-Coping/Escapism				0.26	0.04	6.21	< 0.001
WTSMQ- Enrichment				0.15	0.03	4.80	< 0.001
WTSMQ- Emotional-enhancement				0.30	0.03	8.71	< 0.001
WTSMQ- Social				0.01	0.04	0.38	0.71

* Male coded as 1; female coded as 0.

predictors at Step 2, younger age ($\beta = 0.28, p < 0.001$), increased amount of time spent watching TV series during the COVID-19 pandemic ($\beta = 0.15, p < 0.001$), and depression symptoms ($\beta = 0.17, p < 0.01$) were positively associated with adaptive engagement in watching TV series. Finally, with the inclusion of motives for TV series watching at Step 3, the explained variance increased from 18 to 56%. Female gender ($\beta = 0.07, p < 0.01$), increased amount of time spent watching TV series during the COVID-19 pandemic ($\beta = 0.08, p = 0.01$), anxiety symptoms ($\beta = 0.09, p = 0.02$), and both coping/escapism ($\beta = 0.26, p < 0.001$), enrichment ($\beta = 0.18, p < 0.001$), and emotional enhancement ($\beta = 0.37, p < 0.001$) motivations for watching TV series had a significant positively predictive effect on non-problematic watching engagement.

As reported in **Table 4**, the second hierarchical regression analysis revealed that younger age ($\beta = 0.24, p < 0.001$) and increased amount of time spent watching TV series during the COVID-19 pandemic ($\beta = 0.08, p = 0.02$) positively predicted maladaptive engagement over TV series watching (i.e., *loss of control*) at Step 1. These control variables accounted for 7% of the variance. At Step 2, younger age ($\beta = 0.18, p < 0.001$), increased amount of time spent watching TV series during the COVID-19 pandemic ($\beta = 0.08, p = 0.02$), depression symptoms ($\beta = 0.22, p < 0.001$), and anxiety symptoms ($\beta = 0.11, p = 0.04$) were positively related to loss of control over TV

series watching during the COVID-19 pandemic. Finally, with the inclusion of motives for TV series watching at Step 3, the explained variance increased from 14 to 33%. Loss of control over TV series watching was positively predicted by anxiety symptoms ($\beta = 0.12, p = 0.01$), coping/escapism ($\beta = 0.29, p < 0.001$), emotional enhancement ($\beta = 0.20, p < 0.001$), and social ($\beta = 0.17, p < 0.001$) motivations for watching TV series, and negatively predicted by the enrichment motive for watching TV series ($\beta = -0.10, p < 0.03$).

DISCUSSION

Recent literature has evidenced that the COVID-19 outbreak and related protective measures involved many risks to individuals' mental health (1–3, 5–8, 10, 12). In order to contribute to the ongoing debate on the psychological consequences of forced isolation due to the current pandemic, where the functionally impairing nature of one's engagement in web-related activities is an important issue to consider (65), the purpose of this study was to explore TV series watching behaviors (both from an adaptive and maladaptive perspective) and their underlying motivations, as well as their relationships with psychopathological symptoms during the COVID-19 lockdown in a sample of self-selected Italian adults.

TABLE 4 | Regression: predictors of loss of control over TV series watching during the COVID-19 pandemic.

	<i>F</i>	<i>R</i> ²	ΔR^2	<i>B</i>	<i>SE</i>	<i>t</i>	<i>P</i>
Step 1	13.46 ($p < 0.001$)	0.07	0.07				
Age				−0.01	0.00	−6.52	< 0.001
Gender				−0.01	0.04	−0.20	0.84
Number of family members at home				0.00	0.01	0.34	0.73
Δ h/day watching TV series during and before the COVID-19 pandemic				0.04	0.02	2.29	0.02
Step 2	16.83 ($p < 0.001$)	0.14	0.07				
Age				−0.01	0.00	−4.76	< 0.001
Gender				0.02	0.04	0.44	0.66
Number of family members at home				0.00	0.01	0.35	0.73
Δ h/day watching TV series during and before the COVID-19 pandemic				0.04	0.02	2.28	0.02
Depression				0.15	0.04	3.83	< 0.001
Anxiety				0.09	0.04	2.06	0.04
Stress				−0.02	0.04	−0.61	0.54
Step 3	31.72 ($p < 0.001$)	0.33	0.19				
Age				0.00	0.00	−1.47	0.14
Gender				−0.02	0.04	−0.65	0.52
Number of family members at home				0.01	0.01	0.99	0.32
Δ h/day watching TV series during and before the COVID-19 pandemic				0.02	0.01	1.10	0.27
Depression				0.03	0.04	0.81	0.42
Anxiety				0.09	0.04	2.45	0.01
Stress				−0.05	0.04	−1.35	0.18
WTSMQ-Coping/Escapism				0.23	0.04	5.71	< 0.001
WTSMQ- Enrichment				0.06	0.03	−2.12	0.03
WTSMQ- Emotional-enhancement				0.13	0.03	3.95	< 0.001
WTSMQ- Social				0.19	0.04	4.73	< 0.001

*Male coded as 1; female coded as 0.

The present findings firstly show that people spent more time watching TV series during the pandemic lockdown. In particular, consistent with the existing literature on binge-watching [e.g., (33, 41, 42)], women still proved more engaged in watching TV series during the COVID-19 emergency, while also showing higher levels of anxiety and stress than men. These results thus enter in resonance with previous data showing women's higher propensity to experience negative affect and low sense of mastery in negative circumstances, thus engaging in abstract and dysfunctional ruminative coping (66), and that female gender constitutes a risk factor for anxiety during the COVID-19 pandemic (67). Conversely, men were found to be more interested in bonding with others through watching TV series in such life circumstances. These findings can also be interpreted according to recent studies that showed gender inequality in experiencing the consequences of the COVID-19 restrictions, which differently impacted men's and women's lives as well as gender-role attitudes (e.g. work-family balance) (68–70).

As previously reported (46), the positive association between TV series watching involvement and anxiety—as also evidenced in the current sample—supports the idea that individuals experiencing unpleasant affect are more prone to use binge-watching as a coping strategy to get recovery from undesirable emotions, thus facing and regulating their negative moods (33, 47–49). Indeed, individuals' adaptive reaction to negative

life circumstances might be facilitated by web-related activities, which can positively contribute to alleviate negative feelings, even though sometimes paving the way for problematic online engagement (71). It has also been demonstrated that while emotional enhancement and enrichment motivation for watching TV series is more strongly related to non-problematic watching behavior, coping-escapism motive is usually more strongly associated with problematic patterns of TV series watching (32, 62).

Interestingly, in the current sample loss of control over TV series watching was positively predicted by anxiety symptoms and coping/escapism motivation for watching TV series, but also by emotional enhancement and social drivers. It appears, therefore, that both “positive” and “negative” reinforcement motivations for watching behavior played a role in predicting the possibility of losing control while immersing oneself in TV series during the COVID-19 lockdown. In line with current neuroscientific research, it could be hypothesized that the pleasure deriving from the alleviation of pain combines with the pleasure deriving from positive emotions and relationships, thereby generating a complex rewarding process that may lead in some cases to a loss of control over the behavior (72). However, it is noteworthy that the enrichment motive was negatively associated with a maladaptive engagement in TV series watching. This might suggest that watching TV series for exploring new

ideas, increasing knowledge, and enriching one's own perspective on contexts and situations may protect from uncontrolled and potentially addictive watching behaviors.

Non-problematic engagement in TV series watching was positively predicted by anxiety symptoms, coping/escapism, enrichment and emotional enhancement motivations for watching TV series, as well as by the increased amount of time spent watching TV series during the COVID-19 pandemic, and this especially for women. Therefore, besides the opposite effect of the enrichment motive, the results of both regression analyses do not highlight a clear distinction between non-problematic and problematic patterns of TV series watching behaviors, which were likely less dissociated from each other in the unprecedented context of the COVID-19 lockdown.

Be that as it may, the fact that both non-problematic and problematic TV series watching behaviors appear to be equally induced by anxiety and coping/escapism motivation — as hypothesized — centrally strengthens the notion that watching TV series during the COVID-19 lockdown probably served as a recovery strategy to face such a stressful situation. Furthermore, the current pattern of predictors once again reinforces that TV series watching activity, despite a high involvement, should not be considered as problematic *per se* as it might actually represent an effective coping strategy to deal with emotional distress by allowing viewers to find temporary shelter in the fictional world of a TV series, while experiencing pleasure, and fulfilling self-development and social needs during those times of isolation due to the COVID-19 pandemic.

We may reasonably assume, then, that TV series watching seemed to fuel viewers' minds with a different world, thereby distracting individuals from the pandemic distress. In this context, the possibility to watch TV series for personal enrichment might be key to prevent excessive watching behavior becoming a compulsive and uncontrollable habit (59), rather than a temporary and adequate coping strategy.

Limitations of this study need to be acknowledged. First, the current cross-sectional design limited the ability to formally test causative effects. Second, the well-known risk of biases due to the use of self-reported measures is also prevailing. Third, despite the representation of the entire Italian peninsula

in our sample, the different geographic areas of Italy have been differently affected by the COVID-19-related health crisis, thereby limiting the generalizability of the present results. Finally, if these watching TV series behaviors and related motivations should be regarded as resulting from such specific circumstances, it would be worthwhile considering analyzing the lasting effects of the pandemic on individuals' viewing behaviors through longitudinal study designs. Moreover, differences and similarities between different cultural contexts might be also explored.

Despite these limitations, the present findings hold important implications, not only for binge-watching research, but also for avoiding the over-pathologization and stigmatization of excessive online behaviors that may emerge as a result of specific distressing situations and that, as recently showed (14, 20, 73), might instead be effective although attentively addressed in some limited periods for sustaining temporary recovery from psychological distress.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethical Committee of Psychological Research of the Department of Humanities of the University of Naples Federico II. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

VB was responsible for preparing the first draft of the article. AM analyzed the data. FG edited the manuscript. MF conceptually contributed to the development of the work. JB and AS critically revised the whole work for important intellectual content. All authors contributed to the study design, article, and approved the final version of the paper.

REFERENCES

- Brooks SK, Webster RK, Smith LE, Woodland L, Weissley S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*. (2020) 395:912–20. doi: 10.1016/S0140-6736(20)30460-8
- Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry*. (2020) 7:547–60. doi: 10.1016/S2215-0366(20)30168-1
- Polizzi C, Lynn SJ, Perry A. Stress and coping in the time of COVID-19: pathways to resilience and recovery. *Clin Neuropsychiatry*. (2020) 17:59–62. doi: 10.36131/CN20200204
- Schimmenti A, Billieux J, Starcevic V. The four horsemen of fear: an integrated model of understanding fear experiences during the COVID-19 pandemic. *Clin Neuropsychiatry*. (2020) 17:41–5. doi: 10.36131/CN20200202
- Schimmenti A, Starcevic V, Giardina A, Khazaal Y, Billieux J. Multidimensional assessment of COVID-19-related fears (MAC-RF): a theory-based instrument for the assessment of clinically relevant fears during pandemics. *Front Psychiatry*. (2020) 11:748. doi: 10.3389/fpsy.2020.00748
- Goyal K, Chauhan P, Chhikara K, Gupta P, Singh MP. Fear of COVID 2019: first suicidal case in India! *Asian J Psychiatry*. (2020) 49:101989. doi: 10.1016/j.ajp.2020.101989
- Okruszek L, Aniszewska-Stańczuk A, Piejka A, Wiśniewska M, Zurek K. Safe but lonely? Loneliness mental health symptoms and COVID-19. *Front Psychol*. (2020) 11:579181. doi: 10.31234/osf.io/9njps

8. Orgilés M, Morales A, Delvecchio E, Mazzeschi C, Espada JP. Immediate psychological effects of the COVID-19 quarantine in youth from Italy and Spain. *PsyArxiv preprints*. (2020). doi: 10.31234/osf.io/qaz9w
9. Sani G, Janiri D, Di Nicola M, Janiri L, Ferretti S, Chieffo D. Mental health during and after the COVID-19 emergency in Italy. *Psychiatry Clin Neurosci*. (2020) 74:372. doi: 10.1111/pcn.13004
10. Hossain MM, Sultana A, Purohit N. Mental health outcomes of quarantine and isolation for infection prevention: a systematic umbrella review of the global evidence. *Epidemiol Health*. (2020) 42:e2020038. doi: 10.4178/epih.e2020038
11. Banerjee D, Rai M. Social isolation in Covid-19: the impact of loneliness. *Int J Social Psychiatry*. (2020) 66:269. doi: 10.1177/0020764020922269
12. Casale S, Flett GL. Interpersonally-based fears during the COVID-19 pandemic: reflections on the fear of missing out and the fear of not mattering constructs. *Clin Neuropsychiatry*. (2020) 17:88–93. doi: 10.36131/CN20200211
13. Krishnamoorthy Y, Nagarajan R, Saya GK, Menon V. Prevalence of psychological morbidities among general population, healthcare workers and COVID-19 patients Amidst the COVID-19 pandemic: a systematic review and meta-analysis. *Psychiatry Res*. (2020) 2020:113382. doi: 10.1016/j.psychres.2020.113382
14. Boursier V, Gioia F, Musetti A, Schimmenti A. Facing loneliness and anxiety during the COVID-19 isolation: the role of excessive social media use in a sample of Italian adults. *Front Psychiatry*. (2020) 11:586222. doi: 10.3389/fpsy.2020.586222
15. Di Blasi M, Gullo S, Mancinelli E, Freda MF, Esposito G, Gelo OCG, et al. Psychological distress associated with the COVID-19 lockdown: a two-wave network analysis. *J Affective Disord*. (2021) 284:18–26. doi: 10.1016/j.jad.2021.02.016
16. Moccia L, Janiri D, Pepe M, Dattoli L, Molinaro M, De Martin V, et al. Affective temperament, attachment style, and the psychological impact of the COVID-19 outbreak: an early report on the Italian general population. *Brain Behav Immunity*. (2020) 87:75–9. doi: 10.1016/j.bbi.2020.04.048
17. Rossi A, Panzeri A, Pietrabissa G, Manzoni GM, Castelnuovo G, Mannarini S. The anxiety-buffer hypothesis in the time of COVID-19: when self-esteem protects from the impact of loneliness and fear on anxiety and depression. *Front Psychol*. (2020) 11:2177. doi: 10.3389/fpsyg.2020.02177
18. American Psychological Association. *Five Ways to View Coverage of the Coronavirus*. (2020). Available online at: <https://www.apa.org/helpcenter/pandemics> (accessed March 19, 2020).
19. Wiederhold BK. Using social media to our advantage: alleviating anxiety during a pandemic. *Cyberpsychol Behav Soc Netw*. (2020) 23:197–8. doi: 10.1089/cyber.2020.29180.bkw
20. Gioia F, Fioravanti G, Casale S, Boursier V. The effects of the fear of missing out on people's social networking sites use during the COVID-19 pandemic: the mediating role of online relational closeness and individuals' online communication attitude. *Front Psychiatry*. (2021) 12:146. doi: 10.3389/fpsy.2021.620442
21. Mander J. *Coronavirus: How Consumers Are Actually Reacting*. (2020). Available online at: <https://blog.globalwebindex.com/trends/coronavirusand-consumers/> (accessed March 22, 2020).
22. Comparitech. *50+ Netflix Statistics and Facts Stats That Define the Company's Dominance [2020 Version]*. (2020). Available online at: <https://www.comparitech.com/blog/vpn-privacy/netflix-statistics-facts-figures/> (accessed June 6, 2020).
23. Statista. *Coronavirus Impact: Growth in time Spent Streaming TV and Video Worldwide in the Weekend of March 13 to 14, 2020*. (2020). Available online at: <https://www.statista.com/statistics/1107559/video-streaming-consumption-growth-worldwide-coronavirus/> (accessed June 6, 2020).
24. Corriere della Sera. *In Quarantena Il Boom Delle Tivù in Streaming Aumenta l'inquinamento Digitale*. (2020). Available online at: https://www.corriere.it/pianeta2020/20_maggio_02/quarantena-boom-tivu-streaming-aumenta-l-inquinamento-digitale-cf7b3e92-8aea-11ea-a2b6-57bd451de7e.shtml (accessed June 6, 2020).
25. Feeney N. When, exactly, does watching a lot of Netflix become a 'binge'? *Atlantic*. 18. Available online at: <https://www.theatlantic.com/entertainment/archive/2014/02/when-exactly-does-watching-a-lot-of-netflix-become-a-binge/283844/> (accessed June 6, 2020).
26. Jenner M. Binge-watching: video-on-demand, quality TV and mainstreaming fandom. *Int J Cult Stud*. (2017) 20:304–20. doi: 10.1177/1367877915606485
27. Ahmed AAAM. New era of TV-watching behavior: binge watching and its psychological effects. *Media Watch*. (2017) 8:192–207. doi: 10.15655/mw/2017/v8i2/49006
28. Deloitte's digital media trends survey. *A New World of Choice for Digital Consumers*. 12 ed. (2018). Available online at: https://www2.deloitte.com/content/dam/insights/us/articles/4479_Digital-media-trends/4479_Digital-media%20trends_Exec%20Sum_vFINAL.pdf (accessed June 6, 2020).
29. Deloitte's digital media trends survey. *Piecing It Together*. 13 ed. (2019). Available online at: https://www2.deloitte.com/content/dam/insights/us/articles/4782_digital-media-trends-13th-edition/DI_Digital-media-trends-13th-edition.pdf (accessed June 6, 2020).
30. YouGov Omnibus. *58% of Americans Binge-Watch TV Show*. (2017). Available online at: <https://today.yougov.com/news/2017/09/13/58-americans-binge-watch-tv-shows/> (accessed June 6, 2020).
31. Flayelle M, Maurage P, Billieux J. Toward a qualitative understanding of binge-watching behaviors: a focus group approach. *J Behav Addict*. (2017) 1:457–71. doi: 10.1556/2006.6.2017.060
32. Flayelle M, Canale N, Vögele C, Karila L, Maurage P, Billieux J. Assessing binge-watching behaviors: development and validation of the "Watching TV Series Motives" and "Binge-watching Engagement and Symptoms" questionnaires. *Comp Hum Behav*. (2019) 90:26–36. doi: 10.1016/j.chb.2018.08.022
33. Orosz G, Bothe B, Tóth-Király I. The development of the Problematic Series Watching Scale (PSWS). *J Behav Addict*. (2016) 5:144–50. doi: 10.1556/2006.5.2016.011
34. Steins-Loeber S, Reiter T, Averbach H, Harbarth L, Brand M. Binge-watching behaviour: the role of impulsivity and depressive symptoms. *Eur Addict Res*. (2020) 26:141–50. doi: 10.1159/000506307
35. Steiner E, Xu K. Binge-watching motivates change: uses and gratifications of streaming video viewers challenge traditional TV research. *Int J Res New Media Technol*. (2018). 26:365. doi: 10.1177/1354856517750365
36. Toth-Király I, Bothe B, Toth-Faber E, Håga G, Orosz G. Connected to TV series: quantifying series watching engagement. *J Behav Addict*. (2017) 6:472–89. doi: 10.1556/2006.6.2017.083
37. Walton-Pattison E, Dombrowski SU, Presseau J. "Just one more episode:" frequency and theoretical correlates of television binge watching. *J Health Psychol*. (2018) 23:17–24. doi: 10.1177/1359105316643379
38. Oxford Dictionaries. *Binge Watching*. (2013). Available online at: <https://www.oxfordlearnersdictionaries.com/definition/english/binge-watching> (accessed June 6, 2020).
39. Pena L. *Breaking Binge: Exploring The Effects of Binge Watching on Television Viewer Reception*. Syracuse University. (2015).
40. Umesh S, Bose S. Binge-watching: a matter of concern *Indian J Psychol Med*. (2019) 41:182–4. doi: 10.4103/IJPSYM.IJPSYM_279_18
41. Merrill K, Rubenking B. Go long or go often: influences on binge-watching frequency and duration among college students. *Soc Sci*. (2019) 8:10. doi: 10.3390/socsci8010010
42. Pittman M, Sheehan K. Sprinting a media marathon: uses and gratifications of binge-watching television through Netflix. *First Monday*. (2015) 20:6138. doi: 10.5210/fm.v20i10.6138
43. Rubenking B, Bracken CC. Binge-watching: a suspenseful, emotional, habit. *Commun Res Rep*. (2018) 35:381–91. doi: 10.1080/08824096.2018.1525346
44. Shim H, Kim KJ. An exploration of the motivations for binge-watching and the role of individual differences. *Comput Hum Behav*. (2018) 82:94–100. doi: 10.1016/j.chb.2017.12.032
45. Tukachinsky R, Eyal K. The psychology of marathon television viewing: antecedents and viewer involvement. *Mass Commun Soc*. (2018) 21:275–95. doi: 10.1080/15205436.2017.1422765
46. Tefertiller AC, Maxwell LC. Depression, emotional states, and the experience of binge-watching narrative television. *Atlantic J Commun*. (2018) 26:278–90. doi: 10.1080/15456870.2018.1517765

47. Flayelle M, Maurage P, Karila L, Vögele C, Billieux J. Overcoming the unitary exploration of binge-watching: a cluster analytical approach. *J Behav Addict.* (2019) 8:586–602. doi: 10.1556/2006.8.2019.53
48. Flayelle M, Maurage P, Vögele C, Karila L, Billieux J. Time for a plot twist: beyond confirmatory approaches to binge-watching research. *Psychol Popular Media Cult.* (2019) 8:308–18. doi: 10.1037/ppm0000187
49. Halfmann A, Meier A, Reinecke L. Trapped between self-control failure and norm violation: how users' mobile messaging behavior during task engagement influences feelings of guilt. In: *11th Conference of the Media Psychology Division, German Psychological Society, DGPs.* Chemnitz (2019).
50. Devasagayam R. Media bingeing: a qualitative study of psychological influences. In: *Once Retro Now Novel Again: 2014 Annual Spring Conference Proceedings of the Marketing Management Association.* ISSN 2325–3576. Chicago, IL (2014). p. 40–4.
51. Riddle K, Peebles A, Davis C, Xu F, Schroeder E. The addictive potential of television binge watching: comparing intentional and unintentional binges. *Psychol Popul Media Cult.* (2018) 7:589–604. doi: 10.1037/ppm0000167
52. Sung YH, Kang EY, Lee WN. “My name is...and I'm a binge viewer”: an exploratory study of motivations for binge watching behavior. In: *American Academy of Advertising Conference Proceedings.* American Academy of Advertising (2015). p. 169. Available online at: <http://search.proquest.com/openview/d97d5159639f3988b8f2e662897598ff/1?pq-origsite=gscholar>
53. De Feijter D, Khan JV, Van Gisbergen MS. Confessions of a 'guilty' couch potato understanding and using context to optimize binge-watching behavior. In: *TVX '16 Proceedings of the ACM International Conference on Interactive Experiences for TV and Online Video.* Chicago, IL: ACM (2016). doi: 10.1145/2932206.2932216
54. Brookes S, Ellithorpe M. Good for your mood, bad for your health: narrative involvement, health behaviors, and binge watching. In: *67th ICA Annual Conference.* San Diego, CA.
55. Exelmans L, Van den Bulck J. Binge viewing, sleep, and the role of pre-sleep arousal. *J Clin Sleep Med.* (2017) 13:1001–8. doi: 10.5664/jcsm.6704
56. Hernández Pérez JF, Díaz MMA. Nuevos modelos de consumo audiovisual: los efectos del binge-watching sobre los jóvenes universitarios [New forms of audiovisual consumption: Binge watching effects on university students]. *Revista Científica de Estrategias Tendencias e Innovación en Comunicación.* (2016) 13:201–21. doi: 10.6035/2174-0992.2017.13.11
57. Billieux J, van Rooij AJ, Heeren A, Schimmenti A, Maurage P, Edman J, et al. Behavioural addiction open definition 2.0-using the Open Science Framework for collaborative and transparent theoretical development: commentaries. *Addiction.* (2017) 112:1723–4. doi: 10.1111/add.13938
58. Kardefelt-Winther D, Heeren A, Schimmenti A, VanRooij A, Maurage P, Carras M, et al. How can we conceptualize behavioural addiction without pathologizing common behaviours? *Addiction.* (2017) 112:1709–15. doi: 10.1111/add.13763
59. Perales JC, King DL, Navas JF, Schimmenti A, Sescousse G, Starcevic V, et al. Learning to lose control: a process-based account of behavioral addiction. *Neurosci Biobehav Rev.* (2020) 108:771–80. doi: 10.1016/j.neubiorev.2019.12.025
60. Billieux J, Schimmenti A, Khazaal Y, Maurage P, Heeren A. Are we overpathologizing everyday life? *J Behav Addict.* (2015) 4:119–23. doi: 10.1556/2006.4.2015.009
61. Panda S, Pandey SC. Binge watching and college students: motivations and outcomes. *Young Consumers.* (2017) 18:425–38. doi: 10.1108/YC-07-2017-00707
62. Flayelle M, Castro-Calvo J, Vögele C, Astur R, Ballester-Arnal R, Challet-Bouju G, et al. Towards a cross-cultural assessment of binge-watching: psychometric evaluation of the “watching TV series motives” and “binge-watching engagement and symptoms” questionnaires across nine languages. *Comput Hum Behav.* (2020) 2020:106410. doi: 10.1016/j.chb.2020.106410
63. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behav Res Therapy.* (1995) 33:335–43. doi: 10.1016/0005-7967(94)00075-U
64. Bottesi G, Ghisi M, Altoè G, Conforti E, Melli G, Sica C. The Italian version of the Depression Anxiety Stress Scales-21: factor structure and psychometric properties on community and clinical samples. *Comprehens Psychiatry.* (2015) 60:170–81. doi: 10.1016/j.comppsy.2015.04.005
65. Király O, Potenza MN, Stein DJ, King DL, Hodgins DC, Saunders JB, et al. Preventing problematic internet use during the COVID-19 pandemic: consensus guidance. *Comprehens Psychiatry.* (2020) 100:152180. doi: 10.1016/j.comppsy.2020.152180
66. Nolen-Hoeksema S, Larson J, Grayson C. Explaining the gender difference in depressive symptoms. *J Personal Soc Psychol.* (1999) 77:1061–72. doi: 10.1037/0022-3514.77.5.1061
67. Özdin S, Bayrak Özdin S. Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: the importance of gender. *Int J Soc Psychiatry.* (2020) 1177:0020764020927051. doi: 10.1177/0020764020927051
68. Alon TM, Doepke M, Olmstead-Rumsey J, and Tertilt M. The impact of COVID-19 on gender equality. *NBER.* (2020) 26947:1–39. doi: 10.3386/w26947
69. Czymara CS, Langenkamp A, and Cano T. Cause for concerns: gender inequality in experiencing the COVID-19 lockdown in Germany. *Eur Soc.* (2021) 23:S68–81. doi: 10.1080/14616696.2020.1808692
70. Reichelt M, Makovi K, and Sargsyan A. The impact of COVID-19 on gender inequality in the labor market and gender-role attitudes. *Eur Soc.* (2021) 23:S228–45. doi: 10.1080/14616696.2020.1823010
71. Kardefelt-Winther D. A conceptual and methodological critique of Internet addiction research: towards a model of compensatory Internet use. *Comput Hum Behav.* (2014) 31:351–4. doi: 10.1016/j.chb.2013.10.059
72. Moccia L, Mazza M, Di Nicola M, Janiri L. The experience of pleasure: a perspective between neuroscience and psychoanalysis. *Front Hum Neurosci.* (2018) 12:359. doi: 10.3389/fnhum.2018.00359
73. Giardina A, Di Blasi M, Schimmenti A, King DL, Starcevic V, Billieux J. Online gaming and prolonged self-isolation: evidence from Italian gamers during the COVID-19 outbreak. *Clin Neuropsychiatry.* (2021) 18:65–74.

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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