

Searching for Certainty During a Pandemic

A Longitudinal Investigation of the Moderating Role of Media Consumption on the Development of Posttraumatic Stress Symptoms During COVID-19

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Abstract: The current study longitudinally examined the moderating effects of consuming different types of media (*i.e.*, formal [news] and informal [social media, WhatsApp]) in the association among COVID-19–related worries, intolerance of uncertainty (IU), and posttraumatic stress symptoms (PTSSs). Data were collected at two time points during July and September 2020, with approximately 60 days between measurements. Results showed that both COVID-19–related worries and IU were found to be positively associated with PTSSs. An interaction with formal media consumption was found, so that when one's formal media consumption was high, he or she were most vulnerable to the aforementioned effects on the development of PTSSs. Our findings point to the interactive effects of both COVID-19 worries and IU with media consumption on the development of PTSSs. Although media consumption might provide information during uncertainty, it may also intensify PTSSs during times of crisis. Implications and limitations are discussed.

Key Words: COVID-19, mental health, media use, intolerance of uncertainty, PTSD symptoms, anxiety

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The sudden onset of the coronavirus (COVID-19) pandemic has manifested in diverse psychological outcomes, such as anxiety and depression, in part due to significant uncertainty and feeling that individuals' fates throughout the world is shrouded in fog (Rettie and Daniels, 2021). Despite the immense effects on mental health (Cao et al., 2020; Glowacz and Schmits, 2020), longitudinal examinations of posttraumatic stress symptoms (PTSSs) have been limited. Based on research of previous public health crises and the current ongoing attempts to identify risk factors for psychological distress, it is known that general and financial worries about the pandemic, fear of the unknown, and the feeling of uncertainty play an important role in one's psychological distress (Koffman et al., 2020; Main et al., 2011). However, much less is known about factors that may moderate the effects of such worries and uncertainty on mental health during the pandemic. A possible moderating factor may be media consumption, as media may provide information and thus reduce uncertainty (Finch et al., 2016). The current study longitudinally examines the moderating role of media consumption on the association among being worried about the virus, intolerance of uncertainty (IU), and the development of PTSSs during the COVID-19 pandemic in Israel.

PSYCHOLOGICAL DISTRESS AFTER THE COVID-19 PANDEMIC OUTBREAK—WHAT DO WE KNOW?

Studies on the psychological implications of COVID-19 are being conducted in many countries, showing a wide variety of mental health

problems, including sleep difficulties, depression, and anxiety (*e.g.*, Cao et al., 2020; Guo et al., 2020). In addition, a previous cross-sectional study that took place at the onset of the pandemic identified the following sociodemographic risk factors for experiencing heightened distress: female sex, younger age, having a preexisting chronic illness, and having no children (Horesh et al., 2020). Other studies also corroborated the important role of these risk factors and added additional factors that contribute to higher distress, including IU at time of lockdown (Castelli et al., 2020; Glowacz and Schmits, 2020). However, most of these studies were cross-sectional and did not assess the longitudinal effects of risk factors on COVID-19–related distress, such as PTSSs.

COVID-19–RELATED WORRIES AND INTOLERANCE OF UNCERTAINTY

Recent research regarding the current pandemic conceptualized COVID-19–related distress as a multifaceted construct that includes different COVID-19 worries (Taylor et al., 2020). Included in those, for example, are worries about economic consequences, being infected with the virus, feeling of insecurity and loss of control, and worries about feeling alone due to social distancing (Boyras et al., 2020; Mertens et al., 2020). Past research on other health crises (*e.g.*, SARS literature; see Ho et al., 2005) suggest that individuals who experience more disease-related worries (*e.g.*, fear of infection, feeling unsafe) during disease outbreaks report higher posttraumatic stress (Ho et al., 2005). Individuals may experience different levels of worries, and the level of one's worries and anxiety may be related to his or her tolerance to uncertainty (Mertens et al., 2020). Thus, it is likely that some individuals will find the uncertainty that accompanies COVID-19 difficult to tolerate and may consequently face a higher risk for developing worries and concerns. Considering both factors—one's level of worries and one's IU—are important to more fully understand the psychological effects of COVID-19.

Uncertainty has been characterized as an inadequate understanding; a sense of incomplete, ambiguous, or unreliable information; and conflicting alternatives (Lipshitz and Strauss, 1997). The COVID-19 pandemic has resulted in a high degree of uncertainty worldwide, perhaps in unprecedented proportions (Durodić, 2020). Some believe that instead of seeking certainty, individuals should be open to uncertainty and develop ways of managing it during the pandemic (*e.g.*, explore paradoxes, reflect collectively; Rutter et al., 2020).

IU refers to an individual's negative emotions, cognitions, and coping behaviors when experiencing uncertainty (Birrell et al., 2011). Regarding the COVID-19 pandemic, studies show that IU is negatively related to psychological wellbeing and that people with higher IU are more likely to use maladaptive coping strategies (Rettie and Daniels, 2021; Satici et al., 2020). In addition, the existing literature on IU shows a strong relationship among IU, worries, anxiety disorders, and posttraumatic stress disorder (PTSD) symptoms (Buhr and Dugas, 2006; Fetzner et al., 2013).

PTSS AND THE COVID-19 PANDEMIC

PTSD is a chronic mental health condition that is triggered by a terrifying or threatening event, either through experiencing it or witnessing it.

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Symptoms are generally grouped into four types: intrusive memories, avoidance, negative changes in thinking and mood, and changes in physical and emotional reactions. In addition, symptoms may include flashbacks, nightmares, and severe anxiety, as well as uncontrollable thoughts about the event and an ongoing sense of threat (American Psychiatric Association, 2013). At the onset of the pandemic, it was challenging to officially define the COVID-19 crisis as a traumatic event, and the common implications due to the pandemic were usually described as anxiety, fear, and stress (e.g., Cao et al., 2020; Mertens et al., 2020; Tull et al., 2020). However, even at the pandemic's onset, researchers claimed that there should be more recognition of the specific peritraumatic and posttraumatic implications of this crisis (Horesh and Brown, 2020). Today, more than a year after the first cases of COVID-19 were identified in Europe and the United States, it seems important to assess the long-term effects of the pandemic on the development of PTSD symptoms. In line with the aforementioned, recent research has shown that in different countries around the world, there is a significant increase in the rates of PTSD symptoms due to COVID-19. For example, a study conducted in Italy demonstrated that one of five participants (20%) reported significant PTSSs (Castelli et al., 2020), indicating that the COVID-19 outbreak may be experienced as a psychological trauma, and a study conducted in China demonstrated the role of intense consumption of media during COVID-19 as increase mental health problems (Guo et al., 2020). The current study aims to further examine the role of media exposure vis-à-vis PTSSs during the pandemic. Of note, the previously reviewed studies examined the general occurrence of PTSSs, whereas the current study aims to assess PTSD symptoms specifically linked to the pandemic, by adapting items to be COVID-19-related. In addition, the present study examined whether IU and COVID-19-related worries can predict future PTSSs.

MEDIA CONSUMPTION DURING THE COVID-19 PANDEMIC

Based on studies examining previous public health crises and other global disasters, Garfin et al. (2020) discussed the diverse implications of exposure to the media. The authors generally claimed that media consumption is a threat to one's psychological state. In addition, they mentioned that, in addition to the suffering that the exposure can create, burden on health systems due to disproportionate help-seeking behavior and storage of basic items due to panic buying are also evident, as a result to repeated exposure (Garfin et al., 2020). The authors' message is in line with a meta-analysis on media exposure during disasters and mass violence events, showing negative consequences of media consumption (Hopwood et al., 2017). However, the discussion by Garfin et al. (2020) and the meta-analysis by Hopwood et al. (2017) do not seem to differentiate between the types of media consumption.

With regard to the COVID-19 pandemic, studies on media have focused on identifying patterns of media usage during the crisis and their implications. These studies generally show that media consumption, especially the consumption of negative information and "fake news," can increase psychological distress (Jokic-Begic et al., 2020; Levaot et al., 2022). However, as mentioned previously, there seem to be mixed findings regarding different types of media consumption and their implications. On the one hand, studies show that seeking additional information on the pandemic, through either news outlets or social media, is an independent predictor for fear of COVID-19, regardless of media type (Mertens et al., 2020). On the other hand, some studies shed light on the disadvantage of social media consumption as opposed to the advantage of formal media consumption. For example, the use of social media was correlated with peritraumatic distress, whereas the use of formal media was positively associated with psychological resilience (i.e., better ability to adapt to the challenges of life; Herrman et al., 2011; Levaot et al., 2022).

Although it may seem reasonable that the rule of "the more information, the better" applies during times of uncertainty and unexpected crisis, some studies point out to the harmful role of both types of media consumption (i.e., formal and informal). For example, a study showed that Israeli civilians who were exposed to news broadcasting during missile attacks were more likely to display anxiety symptoms (Bodas et al., 2015), and consumption of information through Twitter and YouTube was associated with PTSD symptoms after exposure to hurricane Sandy (Goodwin et al., 2013). Thus, it seems that consuming both types of media during stressful times is not always helpful, although it may provide information during uncertainty. Media consumption may intensify the effects of both contextual and personality variables on psychological distress. In the context of the current study, COVID-19-related worries, as a contextual variable, and IU, as a personality variable, will be examined vis-a-vis PTSD related to COVID-19. For those showing high levels of media consumption, in both formal and informal outlets, the effect of worries and IU on distress may be stronger compared with those with low levels of media consumption. This suggested that interaction role of media consumption was shown in a study conducted in the context of the Israel-Gaza conflict, demonstrating that the effect of exposure to missile attacks was more strongly related to PTSD symptoms among those who felt that they cannot control their media consumption (i.e., ability to watch or listen only to relevant information) compared with those who felt they had high control over it (Hoffman et al., 2016). Similarly, in the current pandemic, media consumption has been found to affect psychological outcomes depending on the way participants perceived the impact of media as positive or negative (Levaot et al., 2022).

Although the difference between the implications of different types of media consumption is not clear, it is evident that, during crisis, media consumption plays a role in one's coping and mental health (Palgi et al., 2017). The current study will thus examine the possible interaction role of media consumption while distinguishing between the different types of media (i.e., formal and informal).

COVID-19 IN ISRAEL

With the first cases of COVID-19 at late December 2019, all Israeli news channels, as well as social media platforms, were dealing with incoming information about this novel pandemic on a daily basis. As soon as the first cases were identified in Israel, on late February 2020, restrictions were announced and were upheld very tightly by the government for nearly 2 months. Since then, and until the arrival of vaccines on December 2020, Israeli citizens went in and out of lockdown. Our study focuses on an earlier stage in the pandemic, before the arrivals of vaccines, when restrictions were still upheld, and social isolation was prevalent.

THE CURRENT STUDY

To the best of our knowledge, longitudinal prediction of PTSSs during COVID-19 was not assessed yet, including not by adapting items to be COVID-19-related. In addition, the moderating role of consuming different types of media during COVID-19 was not assessed in relation to PTSSs. Therefore, the current study examined the possible effects of consuming different types of media (i.e., formal and informal) as a moderator in the relationship among COVID-19-related worries, IU, and PTSSs. The current study used a longitudinal design that included two time points to examine the following hypotheses:

1. COVID-19-related worries at time 1 will be positively associated with PTSSs at time 2, so that the more worried a person is, the more PTSSs he/she will report.
2. IU at time 1 will be positively associated with PTSSs at time 2, so that the more intolerant a person is toward uncertainty, the more symptoms he/she will report.

3. Both formal and informal media consumption at time 1 will interact with the aforementioned effects (1 and 2), such that, for people with high levels of formal media and informal consumption, the aforementioned associations will be stronger than for people with low levels of formal and informal media consumption.

METHOD

Participants

The current study is part of a large-scale one that included multiple time measurements (Horesh et al., 2020). The data of the current study are based on two time points, during July and September 2020, with approximately 60 days between measurements. Inclusion criteria were 1) aged 18 years and older; 2) residing in Israel at the time of the survey; 3) able to read and understand Hebrew well; and 4) completed questionnaires at both time points. The sample at time 1 comprised 271 participants, and the sample at time 2 comprised 159 participants. The final sample comprised 141 individuals (52%) who completed questionnaires at the both time points, aged 21–83 years (mean, 36.10; SD, 17.53), and a majority of the participants were female (70.2%, $n = 99$). No significant differences were found between the total sample at time 1 and the final sample (*i.e.*, attended both assessments) with respect to demographic variables, media consumption, levels of worry, and level of IU. Sociodemographic characteristics of participants are presented in Table 1.

Procedure

After obtaining ethical approval for the study from the Ethical Committee of the Department of Psychology at Bar-Ilan University, participants were recruited via snowball sampling. Ads with a link to

a Qualtrics questionnaire were posted on social media, as well as sent via email and WhatsApp. During the first time point (July 2020), Israel authorities announced the end of the first lockdown, but guidelines and restrictions were tightened. The second time point (September 2020) took place with the announcement of the second lockdown.

Measures

1. Sociodemographic and medical questions: assessed family status, education, income, country of origin, and additional background variables, as well as having a preexisting chronic illness.
2. Media consumption questions: participants were asked to answer three questions: 1) “During the past 2 weeks, how often have you watched or listened to news channels on television or on the radio?”; 2) “During the past 2 weeks, how often were you exposed to information about COVID-19 through social media such as Facebook and Instagram?”; and 3) “During the past 2 weeks, how often were you exposed to information about the COVID-19 through WhatsApp conversations?” All questions were coded on a 5-point scale from “not at all” to “several times a day.” In the current study, we merged social media and WhatsApp conversations into a one variable—informal media. Higher scores reflected higher levels of media consumption.
3. COVID-19–related worries: Participants were asked five questions on COVID-19–related worries, including general worry about the spread of the virus, worried that I/someone close to me would be infected, and financial worries (my own economic status/general economic status). All questions were rated on a 5-point scale from “not at all” to “very much.” The score was assessed by calculating the mean value of all five questions with higher scores reflecting a higher level of worry.
4. Intolerance of Uncertainty Scale (IUS-12; Carleton et al., 2007) comprises 12 items that assess reactions to impending uncertainty, ambiguous situations, and the future. It consists of two factors: prospective anxiety (seven items; *e.g.*, “I can’t stand being taken by surprise”) and inhibitory anxiety (five items; *e.g.*, “I must get away from all uncertain situations”). Each item is assessed using a 5-point Likert scale ranging from 1 (not at all characteristic of me) to 5 (highly characteristic of me). Higher scores reflect a higher level of IU. Internal reliability was high for the total IUS 12 score ($\alpha = 0.89$), the inhibitory factor ($\alpha = 0.87$), and the prospective factor ($\alpha = 0.82$).
5. The PTSD Checklist for *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* (PCL-5; Wortmann et al., 2016): PTSSs were assessed with the PCL-5, estimating the degree to which individuals have been struggling with DSM-5–related PTSD symptoms in the past month. Participants answered the 20 items on a 4-point rating scale from 0 (not at all) to 4 (extremely). Items were summed for a total score ranging from 0 to 80 and were also clustered according to DSM-5 criteria: reexperiencing, avoidance, negative alterations in mood and cognitions, and alterations in reactivity and arousal. A cutoff score of 31 is recommended for a probable diagnosis of PTSD (Wortmann et al., 2016). In the current study, we adapted all symptom items so that they would refer specifically to the COVID-19 pandemic (*e.g.*, “During the past month, did you have recurring, disturbing, and unwanted memories related to the COVID-19 pandemic?”). Higher scores reflected a higher level of PTSS following COVID-19. Cronbach’s alphas in the current study were $\alpha = 0.91$ (all items), $\alpha = 0.79$ (cluster B), $\alpha = 0.84$ (cluster C), $\alpha = 0.84$ (cluster D), and $\alpha = 0.8$ (cluster E).

RESULTS

Descriptive Analysis of Study Variables and Interveriable Correlations

Table 2 presents the means, standard deviation, and correlations for the study’s variables. Participants indicated that during the past

TABLE 1. Sociodemographic Characteristics of Participants

	%	N
Sex		
Male	30.8%	42
Female	70.2%	99
Marital status		
Single	32.6%	46
Married	40.4%	57
In a steady relationship	25.5%	36
Divorced	0.7%	1
Having children		
Yes	29.1%	41
No	70.2%	99
Birth country		
Israel	90.1%	127
Other	9.2%	13
Income		
Below the mean	53.9%	76
Mean	12.8%	18
Above the mean	32.6%	46
Education		
High school	4.3%	6
Academic	68.8%	97
Currently student	26.2%	37
Age, y		
21–35	70%	99
36–59	14.4%	19
60+	15.6%	23

TABLE 2. Means, Standard Deviation, and Correlations for the Study Variables

Variables	M	SD	PTSS	COVID-19–Related Worries	IU	Formal Media Consumption	Informal Media Consumption
PTSS	19.56	0.46	1	0.19*	0.31**	-0.14	0.16
PTSS, intrusion (B)	1.73	2.36		0.17*	0.26**	0.05	0.21**
PTSS, avoidance (C)	0.9	1.67		0.05	0.17*	0.01	0.02
PTSS, negative alterations in cognition and mood (D)	6.62	5.52		0.17*	0.29**	-0.14	0.13
PTSS, alterations in arousal and reactivity (E)	6.13	4.67		0.21*	0.27**	-0.15	0.18*
COVID-19–related worries	3.35	0.7		1	0.32**	0.07	0.38**
IU	30.23	8.88			1	0.13	0.16
IU, prospective anxiety	20.23	5.55	0.25**	0.35**		0.06	0.16
IU, inhibitory anxiety	9.99	4.31	0.32**	0.21*		-0.13	0.11
Formal media consumption	2.74	1.31				1	0.17*
Informal media consumption	3.13	1.09					1

Correlation values represent Pearson coefficients, including the use of bootstrapping to estimate the confidence intervals ($N = 141$).

* $p < 0.05$. ** $p < 0.01$.

2 weeks, they watched or listened to news channels on television or on the radio twice a week. They also indicated that during the past 2 weeks, they were exposed to information about COVID-19 through social media and WhatsApp conversations once every 2 days. As can be seen from the correlational analysis in Table 2, COVID-19–related worries at time 1 and IU at time 1 were positively related to PTSSs at time 2. With regard to the two factors that comprise the IUS (*i.e.*, prospective anxiety and inhibitory anxiety) at time 1, they both were positively related to PTSSs at time 2 and positively related to COVID-19 worries at time 1. IU at time 1 and COVID-19–related worries at time 1 were positively related to each other.

Prevalence of PTSSs

Using the recommended PCL-5 cutoff score of 31, 11% ($n = 16$) of the sample met the *DSM-5* criteria for probable PTSD. As can be seen from the correlation analysis in Table 2, all clusters were positively related to IU at time 1. All clusters except cluster C (avoidance) were positively related to COVID-19–related worries, and only clusters B (intrusion) and E (hyperarousal) were positively related to informal media consumption at time 1. Interestingly, clusters B and E seemed to be the most correlated with other study variables.

Examination of the Moderation Models

Two moderation models were conducted, via the SPSS PROCESS module, using model 2 (Hayes, 2013), one for each of the dependent variables: COVID-19–related worries as a contextual variable and IU as a personality variable. Each model included the PCL-5 total score as the dependent variable, COVID-19–related worries/IU as the independent variable, and both formal media and informal media consumption scores as the moderators.

COVID-19–Related Worries, Media Consumption, and PTSSs

The model was found to be significant ($F[5,141] = 3.73$, $p = 0.003$, $R^2 = 0.36$), and results showed a main effect between COVID-19–related worries at time 1 and PTSSs at time 2, meaning that the more worried a person was, the more symptoms he/she reported ($\beta = 0.162$, $p = 0.03$). These results confirmed hypothesis 1. Both formal media and informal media consumption at time 1 were not significantly associated with PTSSs at time 2 ($\beta = -0.055$, $p = 0.13$; $\beta = 0.036$, $p = 0.45$). Regarding the moderation examination, the model revealed a significant interaction between formal media consumption

and COVID-19–related worries ($\beta = 0.127$, $p = 0.01$) and an insignificant interaction between informal media consumption and COVID-19–related worries ($\beta = 0.039$, $p = 0.54$). Table 3 presents the effects of COVID-19–related worries on PTSSs, at different levels of formal media consumption (~1 SD below and above the mean). Figure 1 presents a graphic illustration of this effect.

As Figure 1 illustrates, at a high level of formal media consumption (~1 SD above the mean), participants with a greater amount of COVID-19–related worries reported a significantly higher level of PTSSs. By contrast, at a low level of formal media consumption (~1 SD below the mean), COVID-19–related worries were unrelated to PTSD symptoms.

IU, Media Consumption, and PTSSs

The model was found to be significant ($F[5,141] = 5.11$, $p = 0.0003$, $R^2 = 0.41$), and results showed a main effect between IU at time 1 and PTSSs at time 2, such that the more IU one reported, the more symptoms one endorsed ($\beta = 0.216$, $p = 0.001$). These results confirmed hypothesis 2. In addition, formal media consumption at time 1 was negatively associated with PTSSs at time 2 ($\beta = -0.077$, $p = 0.03$). However, informal consumption at time 1 was not significantly associated with PTSSs at time 2 ($\beta = 0.07$, $p = 0.11$). Regarding the moderation examination, the model revealed a significant interaction between formal media consumption ($\beta = 0.106$, $p = 0.03$), but not informal media consumption ($\beta = -0.02$, $p = 0.73$), and IU. Table 4 presents the association between IU and PTSSs, at different levels of formal media consumption (~1 SD below and above the mean). Figure 2 graphically illustrates these results.

As Figure 2 illustrates, at a high level of formal media consumption (~1 SD above the mean), participants with a higher level of IU reported a significantly higher level of PTSSs. By contrast, at a low level of formal media consumption (~1 SD below the mean), IU was unrelated to PTSSs.

TABLE 3. Associations Between COVID-19–Related Worries and PTSD Symptoms at Low Formal Media Consumption (~-1 SD) and High Formal Media Consumption (+1 SD)

Formal Media Consumption Level	Beta Coefficient	SD	t	p
Low	0.0086	0.0975	0.0881	0.9299
High	0.3680	0.0933	3.946	0.0001

Finally, when the prospective anxiety and inhibitory anxiety IU factors were examined separately, no significant interaction was found for neither factor ($p > 0.05$). Thus, the interaction between IU and media consumption was significant only for the total score of IU.

Additional Analysis: Exploratory Analysis of Specific Worries Items

Table 5 presents exploratory analysis of associations between specific COVID-19–related worries and media consumption. As can be seen from the correlational analysis, general worries about the pandemic and health worries were associated with IU, whereas media consumption was associated with financial worries.

DISCUSSION

The current study aimed to extend existing research on COVID-19's effects on mental health and to further illuminate the putative role of types of media consumption in the development of PTSSs. As longitudinal examinations of PTSSs during COVID-19 have been limited, the study longitudinally examined the possible effects of consuming different types of media (*i.e.*, news outlets, social media, WhatsApp) as moderators in the association among COVID-19–related worries, IU, and subsequent posttraumatic symptoms. Findings showed that, 6 months only after the outbreak of the pandemic in Israel, 11% ($n = 16$) of the sample met the *DSM-5* criteria for probable PTSD. This finding emphasizes the importance of identifying risk factors that might contribute to the development of PTSSs during this unique pandemic. Results further showed that the more COVID-19–related worries one reported at time 1, the more PTSSs he/she reported at time 2. Furthermore, there was an interaction effect between the level of worries and consumption of formal media, such that the association between worries and PTSSs was stronger for people who consume high amounts of formal media in comparison to those who consume smaller amounts. When IU was the IV, the model showed a similar main effect and a similar interaction to the one reported previously, including a negative main effect of consuming formal media on PTSSs.

Assessing PTSD symptoms questionnaire specifically linked to the pandemic by adapting items to be COVID-19–related is in line with viewing the pandemic as a potential traumatic event. In line with the current study's findings, recent COVID studies demonstrated the development of PTSD symptoms in hospitalized patients, health care workers, as well as in the general population (Liu et al., 2020; Matalon et al., 2021;

TABLE 4. Associations Between IU and PTSD Symptoms at Low Formal Media Consumption (~ -1 SD) and High Formal Media Consumption ($\sim +1$ SD)

Formal Media Consumption Level	Beta Coefficient	SD	<i>t</i>	<i>p</i>
Low	0.1008	0.0877	1.149	0.2527
High	0.3619	0.0840	4.309	0.0000

Mosheva et al., 2021; Tang et al., 2020). Nevertheless, our findings also demonstrated that a considerable part of our sample (89%) did not present a probable diagnosis for PTSD. This finding can be attributed to the considerable resilience of Israeli society, in part due the mandatory army service, which exposed many civilians to increased stress (Stein et al., 2021), as well as the fact that Israelis, in general, are used to coping with chronic stress, largely due to the country's countless armed conflicts. However, because at the time of writing this report, the pandemic is still a significant part of our lives, there is an urgent need for more longitudinal studies that will assess the long-term consequences of this crisis in terms of PTSD.

The two main effects in our study, that is, the associations of both IU and COVID-19–related worries with PTSSs, are consistent with the existing literature (Castelli et al., 2020; Glowacz and Schmits, 2020). For example, a study conducted in the United States demonstrated the associations among worry about infection or death from COVID-19, IU, and health anxiety (Tull et al., 2020). Moreover, the correlation analysis between PTSD symptoms clusters and study variables in the current study indicated that IU was associated with all clusters. This finding may be related to the fact that traumatic events are characterized with a strong sense of lack of control. Therefore, it seems that high IU during the pandemic might act as a strong catalyst for the development of PTSD symptoms.

Our results regarding the effect of media consumption on PTSSs are partially consistent with the existing literature. On the one hand, we found a significant negative association between formal media consumption and PTSSs over time. This main effect is in line with a recent study that presented the advantage of formal media use in fostering resilience (Levaot et al., 2022). As Goodwin et al. (2013) discuss, individuals might attribute objectivity of information to traditional media. Therefore, it is likely that consumption of formal media may foster a

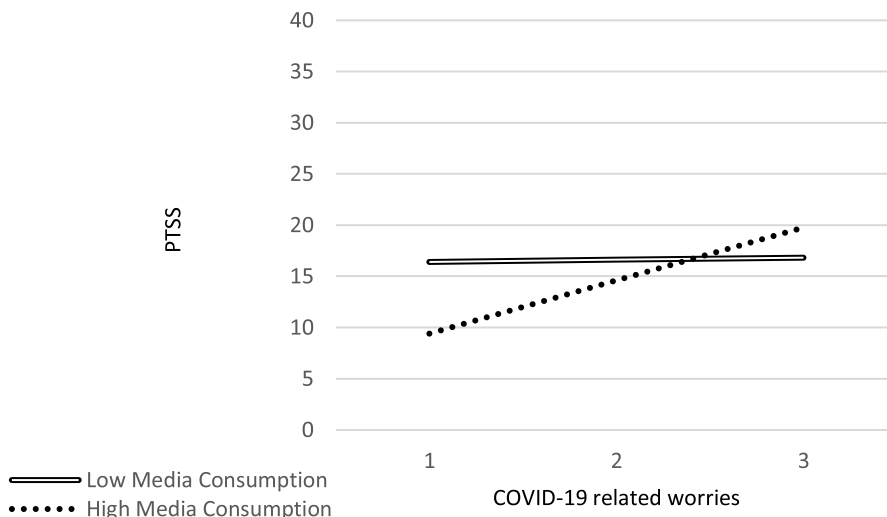


FIGURE 1. Associations between COVID-19–related worries and PTSD symptoms (PTSSs) at low formal media consumption (~ -1 SD) and high formal media consumption ($\sim +1$ SD).

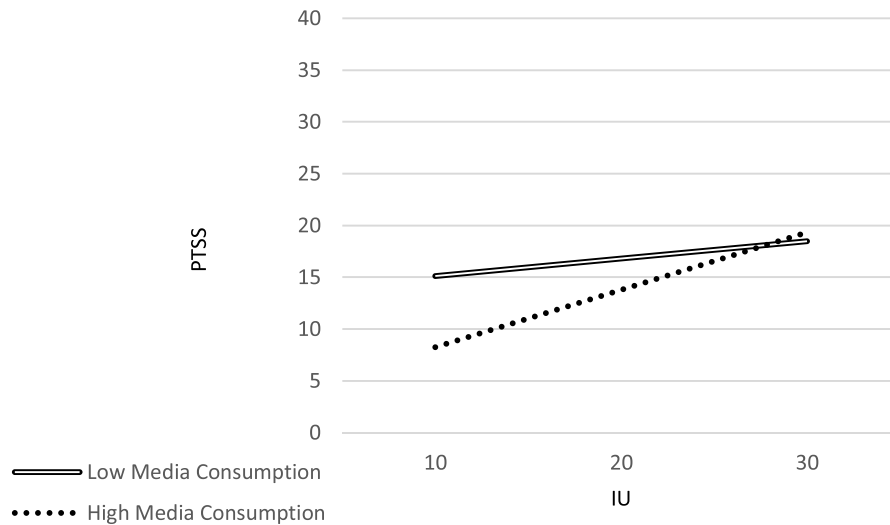


FIGURE 2. Associations between IU and PTSD symptoms (PTSSs) at low formal media consumption (~-1 SD) and high formal media consumption (~+1 SD).

sense of control among those exposed to it. Of note, this finding was found only in the model that included IU as an IV but not in the model that included COVID-19–related worries. Moreover, although this result was found for formal media, this was not the case for informal media. Previous studies did show that informal media consumption is related to higher distress, especially during crisis and traumatic events (Etzebarriet et al., 2020; Palgi et al., 2017). The lack of effect for informal media echoes recent attempts to raise awareness to the potential of social media to spread misinformation, rumors, and fake news, especially during crisis (Hagar, 2013; Jokic-Begic et al., 2020). It may be assumed that more and more people are aware of the fact that informal media includes nonreliable information, and therefore may treat such information with a grain of salt, thus reducing its negative effects on well-being. Future studies are thus encouraged to investigate the association between the level of trust one has in different types of media and its role in determining mental health outcomes.

Although our study shows the positive effect of formal media consumption on reduced risk for PTSSs, caution should be applied, because our moderation analysis showed also that formal media consumption is not necessarily good for everyone. Our results indicate that the association among one’s COVID worries, IU, and PTSS level is dependent on the level of formal media consumption. A combination of intense formal media consumption with high levels of worries or IU is associated with increased posttraumatic symptoms meaning that formal media consumption is not beneficial for those who are intolerant of uncertainty and or have high levels of worries- in this case, formal media consumption intensifies PTSS. The moderating role of formal

media consumption in our study is consistent with previous research on media and its moderating role during a traumatic event (Hoffman et al., 2016).

Contrary to the findings that were reported at the beginning of the pandemic, showing that for those with high levels of media use, the association between uncertainty and the feeling of panic was weaker (Xu and Sattar, 2020), our study showed that media consumption intensified the association among IU, COVID-19–related worries, and PTSSs, and was not beneficial. A possible explanation for this inconsistency may be the timing of the study. Although at the beginning of the pandemic media consumption played a major role in helping people establish a sense of certainty and control, it may be that these benefits did not last for long. Another explanation may be that individualistic cultures are commonly more likely to include a diversity of opinions, and it may be assumed that the contradictory information presented in the media might contribute to a sense of uncertainty. In Israel, most of the media channels reported contradicting perspectives about the pandemic, and health professionals who were interviewed expressed different opinions about the novel virus (*i.e.*, the danger of contagion, the risk of dying from COVID, see Farr, 2020; Jaffe-Hoffman, 2020; Klein-Leichman, 2020; Staff, 2020; Winer and Staff, 2020). This may have led to a prevalent sense of uncertainty among the general population.

Our findings should be viewed in the light of the study’s limitations. Most importantly, we conducted a snowball sampling, which is extremely prone to severe biases (Pierce et al., 2020), and the results should be discussed in the light of this. In addition, the assessment of PTSD symptoms was conducted using self-report and not via a clinical

TABLE 5. Correlation Between Study Variables and Specific COVID-19–Related Worries

Variables	PTSS	IU	Formal Media Consumption	Informal Media Consumption
General worry about the pandemic	0.12	0.18*	0.14	0.25*
I am worry that I will be infected	0.11	0.28**	0.00	0.25
I am worry that my relatives will be infected	0.20*	0.33**	-0.04	0.28
I am worry that will be an economic crisis after the pandemic	0.04	0.13	0.15*	0.24
I am worry that my own economic status will be harm because of the pandemic	0.17*	0.10	0.02	0.30*

Correlation values represent Pearson coefficients, including the use of bootstrapping to estimate the confidence intervals ($N = 141$).

* $p < 0.05$. ** $p < 0.01$.

assessment. Moreover, the sample included only 141 participants who are living in Israel, so a larger and a more culturally varied sample is needed. Finally, we addressed contextual worries as one factor, and we did not differentiate between different types of worries, meaning that, for example, financial worries and health worries were examined together. Future studies should further address the different type of worries and their associations with media consumption (see Table 5 presentation of exploratory analysis), as well as focus on sociodemographic risk factors for intense media consumption.

CONCLUSIONS

In summary, the current study revealed that when one's formal media consumption is high, he or she is most vulnerable to the effects of contextual stress (*i.e.*, COVID-19-related worries) and IU, on the development of PTSD symptoms. Although considering the aforementioned limitations, the current study has important strengths and implications. The major point of strength in the current study is related to the fact that most of existing studies were cross-sectional, which demonstrated a single point of view during this continual pandemic, while the current study applied a longitudinal design. The longitudinal perspective is important as we know today that the pandemic includes long-term consequences. In addition, our longitudinal findings are added to the recent attempts to lead an early prevention of PTSD (Linares et al., 2017). Theoretically, by adapting PTSS items to be COVID-19-related, the current study adds to our understanding about the development of PTSD symptoms in pointing out the interactive effects of both worries and IU with media consumption during this unique period. Practical implications include the potential benefits of psychoeducation regarding proper media consumption, especially for those who are at risk for experiencing more COVID-19-related worries and for those with high IU. Although IU and worries are known as malleable targets of psychotherapy, and therapists are already focusing on improving coping skills in regard to anxiety and the need for tolerance to uncertainty, our study emphasizes the importance to consider the moderating role of media consumption on the relationship among worries, IU, and PTSSs. In order for patients to benefit the most, interventions aim at anxiety management and behavioral interventions designed to increase monitoring over the media consumption seem feasible (Durham et al., 1994; Garrison and Christakis, 2012; Möller et al., 2012) and may reduce the risk for PTSSs during COVID-19 pandemic.

DISCLOSURE

The authors declare no conflict of interest.

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The study was conducted according to acceptable research standards, including having obtained informed consent of study subjects. The study has received ethical approval from the ethical committee of the department of psychology at Bar-Ilan University.

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