



Online News Addiction: Future Anxiety, Fear of Missing Out on News, and Interpersonal Trust Contribute to Excessive Online News Consumption

Reza Shabahang ^{1*}

 0000-0002-8717-9378

Mara S. Aruguete ²

 0000-0003-0588-1516

Hyejin Shim ³

 0000-0002-0912-6983

¹ University of Tehran, Tehran, IRAN

² Lincoln University, Missouri, USA

³ University of Missouri, Missouri, USA

* Corresponding author: rezashabahang74@gmail.com

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ABSTRACT

Following online news and updates have become an ever-increasing part of life in the information age. Surprisingly, however, there is no standardized measurement to examine excessive news consumption in the online context. This study was conducted in order to address online news addiction by developing and validating a questionnaire. Furthermore, this study investigated psychological determinants and consequences of online news addiction. A 9-item questionnaire was developed to assess participants' maladaptive online news consumption. Exploratory factor analysis suggested a one-factor model including 9 items, accounting for 51.47 of the total variance. The confirmatory factor analysis showed support for this one-factor model. The results revealed that the online news addiction questionnaire had acceptable internal consistency reliability. Future anxiety, fear of missing out on news, and interpersonal trust were associated with online news addiction. High future anxiety and fear of missing out on news predicted the tendency to consume news excessively. Contrarily, those with high interpersonal trust expressed lower online news addiction. Additionally, online news addiction was a significant predictor of problematic internet use. These findings increase knowledge of online news addiction and indicate that online news consumption can be viewed as potential addictive behavior that may contribute to problematic internet use.

Keywords: online news, online news consumption, future anxiety, fear of missing out, interpersonal trust, problematic internet use

INTRODUCTION

Internet addiction has become a popular concept used to describe excessive use of the internet combined with aspects of substance use disorders including withdrawal, tolerance, and negative repercussions (Simsek, Elciyar, & Kizilhan, 2019). Rather than having a compulsive tendency to use the internet in general, individuals with internet addictions appear to develop compulsions for particular internet activities (e.g., gaming or social media; Griffiths & Szabo, 2014; Simsek et al., 2019). Though not officially recognized in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), internet gaming and social media addictions have been extensively researched and scales have been developed using DSM-5 criteria for substance use disorders (e.g., van den Eijnden, Lemmens, & Valkenburg, 2016). Despite recent technological advances

making it easier than ever to access online news, there has been little investigation of the addictive properties of internet news checking. The main purpose of the present study is to develop a valid and reliable scale of online news addiction.

The digital revolution has made news more accessible than ever. Access to breaking news stories is free and “on demand” in most online sources. The recent growth of news “teasers” has increased accessibility even more dramatically. For example, there is evidence that news aggregators (e.g., Google News, Apple News) tend to increase internet news consumption (Athey, Mobius, & Pál, 2017) as do exposure to hyperlinks of news articles on social media and other online platforms (Roos, Mela, & Shachar, 2020). App notifications of breaking stories also increase news viewing when compared to a control condition without exposure to notifications (Stroud, Peacock, & Curry, 2020). While much research attention has been devoted to the increased spread of “fake” news, little attention has been paid to overconsumption of online news in general. To our knowledge, there is only one article proposing a measure of news addiction (Vasylenko, Rudmin, & Latifi, 2012). However, the measure is not specific to online news consumption. It is reasonable to assume that recent increases in online news consumption may be associated with addictive properties (e.g., withdrawal, tolerance, life interference) similar to online gaming and social media. For example, withdrawal could be manifested in the form of irritability or negative affect when prevented from accessing online news; tolerance may mean a need to spend increasing periods of time checking online news; life interference may indicate a failure to fulfill basic activities (e.g., sleeping enough, maintaining relationships) due to checking online news. The present study seeks to investigate the addictive properties of online news checking by providing a reliable and valid measure of online news addiction. Further, we investigate potential predictors of maladaptive online news consumption including future anxiety, fear of missing out on news, and interpersonal trust.

From a clinical perspective, internet-use addictions tend to share similar developmental and maintenance characteristics. The Interaction of Person-Affect-Cognition-Execution (I-PACE) Model was proposed as a theoretical framework to explain the addictive use of internet sites (Brand, Young, Laier, Wölfling, & Potenza, 2016). The I-PACE model postulates that predisposing factors (e.g., personality, genetics) can influence problematic internet use. However, the predisposition is not deterministic insofar as mediating and moderating variables (e.g., affective reactions, internet-related cognitive biases) interact with predisposing factors to influence the amount of internet use. Finally, conditioning processes involving reinforcement serve to maintain and strengthen problematic use behaviors (Brand et al., 2016). An implication of the I-PACE model is that treatment of problematic internet use should focus on mediating/moderating variables because these are seen as changeable. The present study examines online news addiction using the I-PACE Model. We conceptualize Interpersonal Trust as a core characteristic which serves as a predisposing factor. Future Anxiety and Fear of Missing Out (FOMO) are conceptualized as mediating variables. High Future Anxiety and FOMO are hypothesized to interact with low trust to produce a habit of online news checking. Once news checking gets established, the behavior gets negatively reinforced via reduction of uncertainty and anxiety relief. Therefore, we hypothesize that interpersonal trust, future anxiety, and FOMO will predict online news addiction.

Personality variables (e.g., impulsivity, narcissism) are known predictors and can be viewed as predisposing factors for problematic internet use (Elhai et al., 2020). Interpersonal trust is a personality trait that refers to believing in or relying on people due to positive expectations of their behavior. Interpersonal trust has a pervasive effect on behavior in virtually every context from interactions with family and friends to economic transactions. Low interpersonal trust has been associated with excessive internet gaming and social media use (Wartberg, Kriston, & Thomasius, 2020). Based on these findings, we expect that participants’ interpersonal trust will have a negative association with online news addiction.

Future anxiety occurs when the future is viewed with a preponderance of negative cognitive and emotional responses (Zaleski, 1996). This causes the future to be regarded with mostly fear rather than hope (Zaleski, 1996). Future anxiety is likely to be related to actual social and political events that cause people to anticipate future danger (Zaleski, Sobol-Kwapinska, Przepiorka, & Meisner, 2017). While some future anxiety might be useful for planning and developing responses to anticipated problems, a high level of future anxiety could be incapacitating. Indeed, traditional media sources (such as television news) have been linked to anxiety over crime victimization (Shi, Roche, & McKenna, 2019), worries about the economy, anti-Muslim sentiment (Jacobs,

Boukes, & Vliegenthart, 2018), and lowered psychological well-being (Boukes & Vliegenthart, 2017). Given the established correlates between news consumption and worries about the future, it is reasonable to assume that online news addiction will be associated with future anxiety. While knowledge of social and political events may increase future anxiety, checking the news may provide an immediate reinforcement by decreasing uncertainty. Based on the I-PACE Model (Brand et al., 2016), we hypothesize that future anxiety will predict online news addiction.

Fear of Missing Out (FOMO) was originally conceptualized as a negative psychological reaction people experience when they suspect that they are excluded from their social group, or that others may be having more rewarding experiences than they are having (Przybylski, Murayama, DeHaan, & Gladwell, 2013). FOMO is associated with negative mood, lower life satisfaction, and increased engagement with social media (Przybylski et al., 2013). Those experiencing FOMO desire to maintain continuous online connectivity because they fear missing something important. FOMO is hypothesized to be a major mediating factor in problematic internet use (see Elhai et al., 2020 for a review). While FOMO was originally applied to social media, Hato (2013) extended the concept to include continuous checking of smartphones for informational purposes in addition to social purposes. Therefore, those high in FOMO may feel a strong need to stay connected with recent social happenings, the most up-to-date news, and newest updates, leading to a habit of compulsively checking phones and other devices (Hato, 2013). We expect that FOMO will predict online news addiction in much the same way in which it predicts problematic social media use. Participants high in FOMO will fear missing out on important breaking news, which may lead to compulsive online news checking.

The main purpose of the present study is to develop and evaluate an online news addiction questionnaire. Additionally, we will examine predictors (interpersonal trust, future anxiety, and FOMO) of online news addiction. Finally, we investigate the extent to which online news addiction contributes to problematic internet use in general. We hypothesize the following:

- Low interpersonal trust will predict greater online news addiction.
- High future anxiety and FOMO will predict greater online news addiction.
- Online news addiction will account for a significant portion of the variance in problematic internet use, showing that it deserves further study as an addictive internet behavior.

METHOD

A mixed-method design integrating qualitative and quantitative methods was utilized to answer research hypotheses. The objective of the current study was to develop and evaluate the psychometric properties of Online News Addiction Questionnaire (ONAQ) for measuring excessive news consumption in the online context. Furthermore, this study sought to investigate the influence of future anxiety, fear of missing out on news, and interpersonal trust on online news addiction. Exploring the relationship between times spent on online news and problematic internet use was another purpose of this study. Ethical considerations, such as participant satisfaction, data retention and destruction, and the informed participation were taken into account in accordance with the declaration of Helsinki (World Medical Association, 2013).

Participants

Participants included a convenience sample of college students from Guilan University in Iran in 2020. Online semi-structured interviews were held with 13 college students who reported consuming online news excessively ($M_{age} = 23.54$, $SD_{age} = 4.66$). The online pilot study was conducted on a representative sample ($n = 32$) of larger survey group ($M_{age} = 22.78$, $SD_{age} = 4.71$). At the end, a convenience sample of 503 college students (54.5% female, 45.5% male) aged from 18 to 40 years ($M = 21.65$, $SD = 4.15$) completed an online survey including measures of online news addiction, future anxiety, fear of missing out on news, interpersonal trust, and problematic internet use. The inclusion criteria of this study were access to news resources, age between 18 and 40 years, and written consent.

Procedure

The development of the ONAQ was conducted in a standardized manner (Beatty et al., 2020; Rattray & Jones, 2007). The item-development phase aimed to collect information on excessive consumption of online

news. The questionnaire items were generated using online semi-structured interviews ($n = 13$), exploring literature about excessive news consumption (Dewenter, 2003; Diddi & Larose, 2006; Vasylenko, Rudmin, & Latifi, 2012), considering official criteria of substance use disorders (DSM-5, American Psychiatric Association, 2013; International Classification of Diseases, ICD -11, World Health Organization, 2020), evaluating content validity using an online panel of experts ($n = 7$), and conducting an online pilot study ($n = 32$).

Initially, an advertisement was posted to university social media groups recruiting students who accessed online news extensively. Thirteen college student respondents were then interviewed by video call using a telecommunications application. These interviews, relevant publications, and criteria for substance use disorders (DSM-5 and ICD-11) provided direction for developing the ONAQ. Seven themes related to online news addiction emerged: internal frustration, craving, obsession, withdrawal, tolerance, loss of control, and life interference. A pool of 15 candidate items were developed. The 15 items were submitted to a seven-member expert panel in an online process. At least five experts are sufficient for controlling chance agreement (Zamanzadeh, Ghahramanian, Rassouli, Abbaszadeh, & Alavi, 2015). The panel validated the items according to relevance, clarity, and simplicity (Thorn & Deitz, 1989). Then, an online pilot study was conducted on a convenience sample of college students of Guilan University to assess the adequacy and feasibility of the ONAQ ($n = 32$). Considering expert feedback and findings of pilot study, the final 12-item version of ONAQ was developed.

The link to the final online survey was sent directly to student members of university social media groups. To ensure that data were gathered from the intended population, each participant was asked to enter their academic email or student number. The response rate was 39%. Participants received a survey administered in Persian including the ONAQ, the Dark Future Scale (Zaleski, Sobol-Kwapinska, Przepiorka, & Meisner, 2017), an adapted version of Checking the Phone out of a Fear of Missing Out Scale (Hato, 2013), the Interpersonal Trust Scale (Rotter, 1967), and a nine-item version of Problematic Internet Use Questionnaire (Laconi et al., 2019). Content validity index (CVI), content validity ratio (CVR), exploratory factor analysis (EFA), confirmatory factor analysis (CFA), inter-item correlation, corrected item-total correlation, and Cronbach's alpha were used to evaluate the validity and reliability of the ONAQ. EFA ($n = 252$) and CFA ($n = 251$) were conducted using subsamples derived from the total sample ($n = 503$) for more precise results (Fabrigar, Wegener, MacCallum, & Strahan, 1999). According to the recommended sample sizes for factor analysis by Comrey and Lee (1992), in which 200 is graded as fair, our EFA and CFA sample sizes are considered adequate. Furthermore, we used Pearson correlation coefficients and multiple regression analyses for total responses ($N = 503$) to explore psychological correlates of online news addiction.

Measurements

Online News Addiction Questionnaire (ONAQ): The ONAQ was developed for the present study to measure maladaptive news consumption. Items are rated on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Higher scores indicate higher maladaptive news consumption. The psychometric properties of the ONAQ are evaluated in the present study using CVI, CVR, EFA, CFA, inter-item correlation, corrected item-total correlation, and Cronbach's α .

Dark Future Scale: The Dark Future Scale (Zaleski et al., 2017) is the short version of Future Anxiety Scale (Zaleski, 1996) which measures the tendency to worry about and anticipate disaster in the future. This scale consists of 5 items (e.g., "I am terrified by the thought that I might sometimes face life's crises or difficulties" and "I am afraid that in the future my life will change for the worse"). The items were rated from 0 (*decidedly false*) to 6 (*decidedly true*), with higher scores indicating higher concern about the future. The scale has satisfactory validity and reliability (Zaleski et al., 2017).

Checking the Phone Out of a Fear of Missing Out Scale (C-FoMO): C-FoMO (20 items; 5 subscales) was developed by Hato (2013) to explore the extent to which individuals check their mobile phones out of fear of missing out. We used an adapted version of the C-FoMO-news factor (4 items) to measure the extent to which respondents check online news sources out of a fear of missing out on news (e.g., "If I don't check online news sources regularly, I get nervous that I might miss out on the latest headlines" and "If I don't check online news sources regularly, I feel anxious that I won't know what's happening in the world). Items are rated on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The higher the score, the greater the fear of missing out on news. Hato (2013) reported appropriate psychometric properties of C-FoMO and its subscales.

Table 1. Exploratory factor analysis of items in the ONAQ (n = 252)

Item	Factor	h ²	Mean	SD
1. I spend too much time scanning online news. (<i>longer time than intended</i>)	0.61	0.37	2.59	1.26
2. I feel frustrated when I can't access online news. (<i>internal frustration</i>)	0.72	0.52	2.28	1.25
3. When I am not accessing online news, I keep thinking about it until I actually search news on internet. (<i>craving</i>)	0.74	0.55	2.38	1.26
4. It is hard for me to resist the temptation to follow news on the internet. (<i>craving</i>)	0.78	0.6	2.38	1.30
5. I find it difficult to control my thoughts about following news on internet. (<i>obsession</i>)	0.64	0.41	2.22	1.16
6. Following online news make me feel better. (<i>emotional relief</i>)	0.79	0.62	2.56	1.26
7. I feel irritable when I stop following online news. (<i>withdrawal</i>)	0.61	0.37	2.12	1.14
8. I need to spend longer period of time on online news to become as satisfied as before. (<i>tolerance</i>)	0.78	0.61	2.02	1.12
9. I continue to follow online news despite failure to fulfill important personal/work/school obligations. (<i>continuing to use despite recurrent problems associated with use</i>)	0.75	0.57	2.42	1.23

Note: Item responses ranged from 1 = strongly disagree to 5 = strongly agree. The ONAQ was originally developed in Persian, and the English version presented here is translated.

Interpersonal Trust Scale (ITS): ITS (Rotter, 1967) is a 25-item scale assessing the generalized expectancy that another individual or group can be relied upon (e.g., "In these competitive times, one has to be alert or someone is likely to take advantage of you"). Each item is rated on a 5-point Likert scale, ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). A high score on this scale indicates a high degree of interpersonal trust. The validity and reliability of the ITS has been established (Chun & Campbell, 1974; Rotter, 1967).

The Problematic Internet Use Questionnaire (PIUQ-9): The PIUQ-9 (Laconi et al., 2019) is a brief version of Problematic Internet Use Questionnaire (Demetrovics, Szeredi, & Rozsa, 2008; e.g., "Does it happen to you that you wish to decrease the amount of time spent online but you do not succeed?"). The PIUQ-9 is comprised of 9 items rated on a 5-point Likert scale (ranging from *never* = 1 to *always* = 5). Higher scores indicate higher risk of problematic internet use. The scale includes one general problem factor and two specific factors: obsession/neglect and control disorder. Laconi et al. (2019) reported satisfactory psychometric properties of the PIUQ-9 across a number of European languages and cultures.

RESULTS

We initially examined the psychometric properties of the ONAQ. Content validity ratio (CVR; Lawshe, 1975) and content validity index (CVI; Waltz & Bausell, 1983) were used to establish and quantify the content validity of the ONAQ. CVR and CVI were rated on a 3-point (essential, useful but not essential, not necessary) and a 4-point (not relevant, somewhat relevant, quite relevant, highly relevant) rating system, respectively. CVR (.90) and CVI (.89) values of the ONAQ indicated satisfactory content validity.

The internal consistency of the ONAQ was estimated by computing Cronbach's alpha with the full sample of 503 participants. Internal consistency with the complete 12-item scale was high ($\alpha = .92$, 95% CI = [.91, .93]), which implies that the instrument has excellent reliability (George & Mallery, 2003). However, a high value of alpha ($> .90$) may indicate redundancies and the need to reduce items (Tavakol & Dennick, 2011). To discover redundant items, the residual matrix from the one-factor EFA was evaluated. The residual matrix proved that three items were highly correlated with other items. The analyses were repeated after eliminating these items. Reducing the questionnaire to 9 items did not adversely affect the internal consistency reliability ($\alpha = .90$, 95% CI = [.89, .91]).

Exploratory factor analysis was implemented to investigate the factor structure of the 9 remaining items of ONAQ ($n = 252$). Kaiser-Meyer-Olkin (KMO = .93) and Bartlett's test of sphericity ($\chi^2 = 1100.431$; $df = 36$; $p < .001$) suggested suitability of data for structure detection. A principle component analysis (PCA) was performed with Varimax rotation to clarify and simplify the results of the factor analysis. The scree plot obtained from exploratory factor analysis revealed a one-factor solution. The one-factor structure accounted for 51.47% of the variance (Table 1).

A CFA was conducted to assess the fit of the one-factor model of the ONAQ using maximum-likelihood estimation analysis among the remaining subsample of 251 responses (of 503 total). The model fit indices

Table 2. Goodness-of-fit indices for the one-factor model of the ONAQ (n = 251)

Goodness of fit indices	Tested model
χ^2	59.81
df	27
p-value	< .01
χ^2/df	2.22
Tucker-Lewis Index (TLI)	.96
Comparative Fit Index (CFI)	.97
Root Mean Square Error of Approximation (RMSEA)	.07

Table 3. Inter-item correlations of the items in ONAQ (n = 503)

Items	1	2	3	4	5	6	7	8	9
1	1								
2	.51**	1							
3	.46**	.55**	1						
4	.49**	.52**	.59**	1					
5	.43**	.52**	.56**	.60**	1				
6	.41**	.46**	.48**	.48**	.43**	1			
7	.45**	.58**	.61**	.58**	.57**	.54**	1		
8	.46**	.50**	.60**	.52**	.53**	.51**	.64**	1	
9	.37**	.41**	.43**	.51**	.45**	.44**	.45**	.49**	1

Note. * $p < .05$. ** $p < .01$.

Table 4. Item characteristics compose of mean (SD), scale mean if item deleted, scale variance if item deleted, corrected item-total correlations, and Cronbach's α if item deleted (n = 503)

Items	Mean (SD)	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlations	Cronbach's α if item deleted
1	2.58 (1.24)	18.26	54.16	.59	.90
2	2.30 (1.29)	18.54	52.26	.67	.89
3	2.33 (1.26)	18.51	51.85	.72	.89
4	2.36 (1.27)	18.48	51.63	.72	.89
5	2.20 (1.15)	18.64	53.67	.68	.89
6	2.62 (1.25)	18.22	53.57	.62	.89
7	2.12 (1.14)	18.72	52.76	.74	.88
8	1.99 (1.10)	18.85	53.76	.71	.89
9	2.34 (1.22)	18.50	54.44	.58	.90

were as follows: the χ^2 and the χ^2/df (cutoff ≤ 3 ; Marsh & Balla, 1994), Tucker Lewis index (TLI; cutoff ≥ 0.90 ; Bentler and Bonnet, 1980), comparative fit index (CFI; cutoff ≥ 0.90 ; Bentler, 1990), and root mean square error of approximation (RMSEA; cutoff $\leq .08$; Browne & Cudeck, 1993). Considering the recommended cut-off for good fit, the one-dimensional model indicated acceptable fit across all indices (Table 2).

Internal consistency of the ONAQ was explored by assessing inter-item correlation, corrected item-total correlation, and Cronbach's α . Excellent inter-item correlations (range = .37 to .64; Table 3) and corrected item-total correlations (range = .58 to .74; Table 4) indicate item redundancy ($n = 503$). Positive and significant correlation coefficients suggest that the items on the ONAQ are assessing the same content. Furthermore, the Cronbach's α of the ONAQ was .90 and findings related to Cronbach's α if item deleted also approved internal consistency of the questionnaire (Table 4).

After establishing the psychometric properties of the ONAQ, Pearson correlation coefficients and multiple regression analyses were used to examine the relationships between online news addiction and other measured variables. Table 5 presents ranges, mean scores, standard deviations, skewness, kurtosis, and Cronbach's alpha for each measure. The skewness and kurtosis values are in an acceptable range, which describes a normal distribution (Kline, 2011). Internal consistency estimates for all variables measured with Cronbach's α were excellent.

Table 5. Descriptive statics of study's variables (n = 503)

	Min-Max	M	SD	Skewness	Kurtosis	α
Future anxiety	0-30	15.60	7.75	-.14	-.91	.87
Fear of missing out on news	4-21	9.92	5.99	1.01	.32	.94
Interpersonal Trust	25-125	64.35	14.57	.29	.71	.88
Obsession and neglect disorder	3-15	8.06	3.23	.10	-.81	.83
Control disorder	6-30	16.84	5.15	-.04	-.37	.81
Problematic internet use	9-45	24.91	7.70	.03	-.42	.87
Online news addiction	9-45	21.70	8.04	.34	-.41	.89

Note. Obsession/neglect disorder and control disorder are subscales of the nine-item Problematic Internet Use Questionnaire.

Table 6. Correlation matrix of study's variables (n = 503)

	1	2	3	4	5	6	7
1. Future anxiety	1						
2. Fear of missing out on news	.44**	1					
3. Interpersonal Trust	-.40**	-.12**	1				
4. Obsession and neglect disorder	.43**	.35**	-.20**	1			
5. Control disorder	.45**	.23**	-.25**	.67**	1		
6. Problematic internet use	.48**	.30**	-.25**	.87**	.95**	1	
7. Online news addiction	.46**	.63**	-.34**	.34**	.29**	.33**	1

Note. Obsession and neglect disorder and control disorder are subscales of the nine-item Problematic Internet Use Questionnaire; * $p < .05$. ** $p < .01$.

Table 7. Summary statistics for the regression equation predicting online news addiction (n = 503)

Predictive Variables	R ²	ΔR ²	B	Standard error	β	t	p
Final model							
Future anxiety	.48	.48	.13	.04	.13	3.30	.001
Fear of missing out on news			.74	.05	.55	15.30	.0001
Interpersonal Trust			-.12	.02	-.22	-6.23	.0001

Table 8. Summary statistics for the regression equation predicting problematic internet use by online news addiction (n = 503)

Predictive Variables	R ²	ΔR ²	B	Standard error	β	t	p
Final model							
Problematic internet use	.11	.11	.32	.04	.33	7.94	.0001

We investigated the relationship between online news addiction and other measured variables using Pearson correlations. **Table 6** shows that online news addiction is significantly correlated with future anxiety ($r = .46$; $p < .01$), fear of missing out on news ($r = .63$; $p < .01$), interpersonal trust ($r = -.34$; $p < .01$), and problematic internet use ($r = .33$; $p < .01$).

To determine the extent to which future anxiety, fear of missing out, and interpersonal trust account for online news addiction, a multiple regression analysis was computed (see **Table 7**). Future anxiety, fear of missing out, and interpersonal trust were entered as predictors. The sum of the predictor variables accounted for .48 of the variance in online news addiction, and the model was significant ($R^2 = .48$, $p < .01$). Future anxiety ($\beta = .13$; $p < .01$), fear of missing out on news ($\beta = .55$; $p < .01$), and interpersonal trust ($\beta = -.22$; $p < .01$) significantly predicted online news addiction.

The role of online news addiction in predicting problematic internet use was evaluated using multiple regression analysis. Online news addiction accounted for 11 percent of the variance of problematic internet use ($R^2 = .11$, $p < .01$; **Table 8**). This result indicates the importance of online news addiction as an activity that contributes to problematic internet use in general.

DISCUSSION

The main purpose of this study was to develop a reliable and valid instrument that could be used to assess online news addiction. We developed and tested the psychometric properties of the Online News Addiction Questionnaire (ONAQ). The ONAQ was evaluated using CVI, CVR, EFA, CFA, inter-item correlation, corrected

item-total correlation, and Cronbach's α . Our results show that the single-factor, 9-item scale features strong reliability and validity estimates. Furthermore, scores on the scale accounted for a significant amount of the variance in problematic internet use. To our knowledge, the ONAQ is the first scale developed to measure online news addiction, which our research shows is a prominent factor in problematic internet use. This instrument could further the investigation of online news addiction and could have clinical use for the assessment of maladaptive internet use behaviors.

Our secondary goal was to examine some of the predictors of internet news addiction. According to the I-PACE model, predisposing factors (e.g., genetics, personality traits) work together with mediating and moderating variables (e.g., affective reactions, internet-related cognitive biases) to influence compulsion to use the internet. Problematic use behaviors are maintained and strengthened through conditioning processes involving reinforcement (Brand et al., 2016). In this model, mediating/moderating variables are the focus of treatment since they can most easily be altered. We examined interpersonal trust (a predisposing factor), fear of missing out, and future anxiety (mediating/moderating variables) as predictors of online news addiction. In support of the I-PACE model (Brand et al., 2016), we found that interpersonal trust, fear of missing out, and future anxiety significantly predicted online news addiction.

We found that participants with low interpersonal trust were more inclined toward online news addiction. Similarly, low interpersonal trust has been associated with excessive internet gaming and social media use (Wartberg et al., 2020). Our findings suggest that interpersonal trust may serve as a predisposing factor for internet addiction in a general sense. People who experience low interpersonal trust may feel more comfortable in online environments in which face-to-face interaction is unlikely. Low interpersonal trust may also be a protective factor in online environments. For example, young adults with low interpersonal trust are less likely to experience cyber victimization (Butt, Jamil, & Khalid, 2019). Moreover, people who use social media as a main news source tend to have lower levels of trust in the news than those who rely on other sources (Kalogeropoulos, Suiter, Udris, & Eisenegger, 2019). Therefore, low interpersonal trust may serve as a predisposing factor and also as a protective factor to avoid exploitation in online environments.

Future anxiety and fear of missing out on news were both predictive of greater tendency toward online news addiction. Both of these factors feature anxiety as a core component. Our research supports previous studies showing that news consumption predicts future anxiety (Jacobs et al., 2018; Shi et al., 2019) and that FOMO predicts problematic internet use (Elhai et al., 2020). Participants high in FOMO and future anxiety experience fear and uncertainty related to missing important breaking news. As these fears increase in frequency and intensity, they result in high levels of distress. Compulsive online news checking may serve as a coping mechanism to reduce the distress. Compulsive checking is aided by alerts, notifications, and hyperlinks that make it easier than ever to keep up with ever-changing news (Athey et al., 2017; Roos et al., 2020; Stroud et al., 2020). Checking the news provides a negative reinforcement through the temporary reduction of anxiety. Therefore, online news addiction is strengthened and maintained through negative reinforcement.

There are important clinical implications of our findings. While personality factors such as interpersonal trust may be stable and difficult to change, future anxiety and FOMO are likely to be subject to greater change in those suffering from maladaptive internet use. Our results suggest that working to alleviate the worries caused by future anxiety and FOMO may be a promising route to treating online news addiction and other maladaptive internet use behaviors. Also, increasing the difficulty of checking the news by disabling alerts and notifications may lower compulsive checking. Further research should examine the lability of future anxiety and FOMO in addition to the efficacy of making behavioral changes that reduce the likelihood of compulsive checking behaviors.

Limitations

Our research has several limitations. First, our homogeneous population of university students does not represent the larger population of internet users. We might expect older internet users to be even more subject to online news addiction. Second, our data were collected in the midst of a world-wide pandemic (COVID-19) which affected the lives of most people. Estimates of online news addiction, fear of missing out on the news, and future anxiety may have been especially high due to the unpredictable nature of the pandemic. While we were unable to assess a cutoff score to establish the difference between excessive and non-

excessive internet news checking, it should be noted that the mean score on the ONAQ in our sample was above the midpoint on the scale range. Finally, our research is correlational, so we can only speculate about the causal factors involved in online news addiction. Nonetheless, our research provides a starting point for additional study of online news addiction by providing a valid and reliable instrument to assess the problem in addition to some predictors.

Conclusion

This study introduces a valid and reliable questionnaire to capture maladaptive news consumption in the online context. The results suggest that high future anxiety, high fear of missing out on news, and low interpersonal trust predict maladaptive online news consumption. Furthermore, the findings demonstrated the link between online news consumption and problematic internet use.

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