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Vulnerable Narcissism and Fear of Missing Out as Predictors of Cyber Trolling in University Students

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Abstract

As cyber trolling has become a common issue among young adults, understanding the underlying psychological phenomena that serve as the foundation of such behaviors. This study was conducted to investigate the relationship among vulnerable narcissism, fear of missing out and cyber trolling behavior in university students. It was hypothesized that 1) there will be a positive relationship between vulnerable narcissism, fear of missing out, and cyber trolling behavior in university students, 2) Vulnerable narcissism and fear of missing out will positively predict the cyber trolling behavior in university students, 3) there will be gender differences in terms of study variables. A correlational research framework was employed. The group included 200 college students from various universities in Lahore with an age range of 18 to 30 years (M = 20.63, SD = 2.32) including 91 males and 104 females. Purposive sampling was used to access the sample. A self-constructed demographic sheet, Maladaptive Covert Narcissism Scale (Cheek et al., 2013), Fear of Missing Out Scale (Mazlum et al., 2022), and Online Trolling Behavior Scale (Hamarta et al., 2021) were used for assessment. The results revealed a positive correlation among vulnerable narcissism, fear of missing out, and cyber trolling behavior in university students. The results also revealed that fear of missing out positively predicted cyber trolling behavior (β = .28, p < .001) in university students, however, vulnerable narcissism did not predict it (β = .04, p = .66). The results also showed gender differences in terms of fear of missing out and cyber trolling behavior indicating men showed higher levels of fear of missing out (Men: M = 52.93, SD = 10.74; Women: M = 47.65, SD = 11.28) and cyber trolling behavior (Men: M = 39.23, SD = 13.17; Women: M = 32.02, SD = 13.48). The present study contributes to the field of cyber psychology by enhancing the understanding of psychological factors associated with cyber trolling behavior among university students. The findings highlight the importance of examining these factors to better understand problematic online behaviors and may provide useful insights for developing awareness strategies that encourage healthier online interactions among young adults.

Keywords: vulnerable narcissism, fear of missing out, cyber trolling behavior

Introduction

Internet users in Pakistan increased by 27.1% between January 2023 and January 2024 (Kemp, 2024). It is reported that 45.7% of the total population of Pakistan are internet users and 29.5% of the total population of Pakistan are social media users (Kemp, 2024). Problematic internet usage is more common in youth with 35% of Iranians aged 15–23, 34.5% of African high school and university students, and 27.1% of young adults in Bangladesh (Ruckwongpatr

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et al., 2022). Cyber trolling and fear of missing out (FoMO) are two of the negative effects of growing technology and social media use. According to a study conducted in 2017, 38% of Americans adults reported seeing online trolling on a daily basis (Kunst, 2019). Approximately 41% of U.S. adults aged 18 to 29 reported experiencing online harassment, with 34% stating they experienced severe forms of harassment, which could include trolling behavior (Pew Research Center, 2020).

Narcissism is a condition in which individuals are too self-centered and require an excessive degree of attention (Miller et al., 2011). Vulnerable narcissism is one of the forms of narcissism, which involves an underlying sense of insecurity and hypersensitivity to criticism, coupled with a constant need for validation and admiration from others. Individuals with vulnerable narcissism often present a facade of modesty while harboring deep-seated feelings of inadequacy and a fear of rejection (Miller et al., 2011). Vulnerable narcissism is characterized by emotional volatility, defensiveness, and a tendency to view oneself as a victim, seeking reassurance and support from others to maintain fragile self-esteem. It involves a constant need for validation and admiration due to an underlying fear of rejection (Pincsus et al., 2009). Vulnerable narcissism is characterized by sensitivity to criticism, a need for external validation, and concerns regarding social acceptance (Miller et al., 2011). These characteristics may make individuals more sensitive to social comparison and online validation needs, which are closely associated with fear of missing out (Stimson & Daly, 2020). Therefore, examining FoMO alongside vulnerable narcissism may provide a better understanding of how personality vulnerabilities relate to online behaviors. Fear of missing out (FoMO) is an inescapable anxiety stemming from the fear of not being part of exciting or important activities happening around oneself. It often leads to a compulsive need to constantly check social media and participate in various activities to stay connected (Elhai et al., 2016). FoMO is often associated with frequent monitoring of social media and staying connected to the internet (Stimson & Daly, 2020). The high prevalence of FoMO may have implications for well-being and digital behavior and may be associated with a recurring pattern of seeking attention and validation online. Online platforms provide a sense of anonymity that allows individuals to express their opinion and engage in trolling without fear of personal consequences (Joinson et al., 2010). Further, in online space the detachment from face-to-face communication can lead to reduced inhibitions and empathy, encouraging individuals to engage in trolling behavior without considering the impact on the target (Suler, 2004).

Given that FoMO is associated with heightened concerns regarding social belonging and online engagement, individuals experiencing higher levels of FoMO may demonstrate increased involvement in various online activities. In this context, cyber trolling represents one form of problematic online behavior that warrants further investigation. Cyber trolling behavior involves engaging in hostile, inflammatory, or offensive online activities with the intention of provoking, harassing, or antagonizing individuals or groups. Trolls often use anonymity or pseudo anonymity to spread hate, misinformation, or derogatory language, disrupting digital communication (Wang et al., 2021). Cyber trolling behavior refers to a pattern of online actions aimed at causing emotional distress, disrupting discussions, or instigating conflicts. Trolls often employ anonymity to post offensive comments, hate speech, or false information to provoke others (Buckels et al., 2014). Interestingly, there's a link between vulnerable narcissism and cyber trolling, as some with vulnerable traits might resort to trolling to feel powerful or get

attention (March & Marrington, 2019). It is suggested that people may engage in trolling to conform with what they perceive as societal norms, due to peer pressure and their desire to belong to a specific group of internet users or groups (Bessi et al., 2017). Trolling can be as a means of venting frustration and seeking a sense of retribution can be used by students who feel that they have been treated in an unfair manner or who have unresolved grievances (Gollwitzer et al., 2013). To conclude it can be suggested that vulnerable narcissism is associated with FoMO (Carone et al., 2023), aggression, and trolling (Rohmann et al., 2024)., while FoMO is usually associated with low self-esteem, low self-compassion, and loneliness (Wong et al., 2020). Further, FoMO is positively associated with online trolling (Santos et al., 2023).

Brailovskaia et al (2023) explored the connection between FoMO, vulnerable narcissism and social media addiction. Sample included 745 including Male=365 and Female=380. Results showed that people with vulnerable narcissism use dysfunctional strategies as coping mechanism. The research also showed that the connection amongst vulnerable narcissism and dysfunctional strategies like social media addiction was mediated by FoMO. The results showed higher levels of all three variables in males and a positive correlation among FoMO, Vulnerable Narcissism and social media addiction. Another study conducted by Rohmann et al. (2024) investigated the personality traits and psychological mechanisms of trolls, also the effect of self-esteem on narcissism and trolling behavior. The results suggested that people with vulnerable narcissism and grandiose narcissism tend to engage more in trolling behaviors. The results also suggested that high self-esteem weakens the relationship among narcissism and trolling behavior. Another study conducted by Carone et al. (2023) investigated the involvement of defense mechanism, grandiose narcissism and vulnerable narcissism to the fear of missing out in emerging adulthood. Sample consisted of young adults ranging from age of 18 to 29 years. The findings revealed that grandiose and vulnerable narcissism contributed to FoMO. Lopes et al. (2017) examined the association among dark triad personalities and online trolling behavior in Facebook users. The sample size was 135 among which 22 were male and 113 were female university students. Results suggested that narcissism and psychopathy were more related with trolling behavior.

Considering these findings together, the existing literature indicates that vulnerable narcissism and FoMO may represent important factors in understanding online behaviors; however, their role in cyber trolling among Pakistani university students remains insufficiently examined. Further, Panatik et al. (2022) analyzed the effects of dark triad personality on cyber bullying behavior among university students. The sample subset for the research was Malaysian University students and the sample size was 400. The result showed that all three traits of dark triad personality model are correlated with cyber bulling and the results also showed that narcissism is correlated with cyber bullying. In another study, Siyez et al. (2023) reported that narcissism and impulsivity were each independently and additively positively associated with both bullying and cyberbullying perpetration. A study by Jiang et al. (2023) revealed fear of missing out mediated the relationship among narcissism and problematic social media use, and this influence was more powerful with other-inferior narcissism. It also showed that social capital intensified the mediation effect of fear of missing between the relationship of narcissism and problematic social media use. Lee et al. (2023) examined the gender differences and effects of anonymity on online trolling and cyber victimization. The findings

revealed that men were more prone to engaging in online trolling than females. The results also revealed that anonymity does not predict online trolling or cyber victimization. Akat et al. (2023) suggested significant correlations among the dark triad, online trolling, and empathy and the mediation effect of dark triad on online trolling was mediated by empathy.

Although previous research has generally reported associations between personality traits and problematic online behaviors, findings also suggest that these relationships may vary depending on individual and contextual factors. For instance, while vulnerable and grandiose narcissism have been associated with trolling behaviors, Rohmann et al. (2024) found that self-esteem may weaken the relationship between narcissistic traits and trolling behavior. Similarly, Lee et al. (2023) reported that anonymity did not significantly predict online trolling or cyber victimization, suggesting that specific contextual factors may not consistently account for variations in problematic online behaviors. These variations highlight the need for further investigation into the specific psychological factors associated with cyber trolling behavior. However, previous research has largely examined vulnerable narcissism and fear of missing out separately or in relation to broader forms of problematic online engagement, while the association between these factors and cyber trolling behavior remains comparatively less explored. Furthermore, limited research has examined these associations among university students in the Pakistani context. Therefore, the present study aims to extend existing literature by examining the association between vulnerable narcissism, fear of missing out, and cyber trolling behavior among university students.

Internet and social media usage has increased globally since Covid-19 Pandemic. According to reports, internet users in Pakistan increased by 27.1% between January 2023 and January 2024 (Kemp, 2024). According to statistics, 45.7% of the total population of Pakistan are internet users and 29.5% of the total population of Pakistan are social media users (Kemp, 2024). It has been reported that approximately 54.38 million (38.9 %) users aged 18 and above were using social media in Pakistan at the start of 2024 (Kemp, 2024). Cyber trolling and FOMO are two of the negative effects of growing technology and social media use. According to a study conducted in 2017, 38% of Americans adults reported seeing online trolling on a daily basis (Kunst, 2019). Another study in 2017 revealed that 26% of Americans reported being a victim of cyber trolling. These numbers have increased significantly since 2017. Previous studies have linked vulnerable narcissism to online disinhibition and negative online interactions, which could contribute to cyber trolling behavior (Brailovskaia et al., 2022). Vulnerable narcissism also contributes to FOMO (Carone et al., 2023) which is usually associated with low self-esteem, low self-compassion, and loneliness (Wong et al., 2020) as well as online trolling behavior (Santos et al., 2023). Cyber trolling is linked to low self-esteem, vulnerable narcissism, and a need for validation (Rohmann et al., 2022).

Hypotheses

H1: There will be positive relationship between vulnerable narcissism, fear of missing out and cyber trolling behavior in university students

H2: Vulnerable narcissism and fear of missing out will positively predict the cyber trolling behavior in university students.

H3: There is likely to be a gender difference in terms of vulnerable narcissism, fear of missing out and cyber trolling behavior in university students.

Method

Research Design

Correlational research design was used.

Sample and Sampling Technique

The sample size consisted of 200 young adults aged between 18 to 30 years from various public and private sector universities in Lahore. Purposive sampling was used to access the students. Participants were selected from a variety of Lahore universities, both public and private. The researchers approached the participants and upon volunteer participation they were explained the purpose and nature of the study. University students between the ages of 18 and 30 who were enrolled in undergraduate or graduate programs and regularly used the internet and social media platforms met the inclusion criteria. The details of the demographics of the participants is given in Table 1.

Table 1

Descriptive Statistics of Demographic Variables (N-200)

Characteristic	*n* (%)	*M(SD)*
Age		20.63(2.32)
Gender		
Men	91(45.5%)	
Women	104(52%)	
Unspecified	5(2.5%)	
Education (in years)		13.79(1.55)
Relationship status		
Single	178(89%)	
Engaged	11(5.5%)	
Married	8(4%)	
Divorced	3(1.5%)	
Family monthly income		161443.27(113677.13)
Family system		
Joint	74(37%)	
Nuclear	121(60.5%)	
Residence		
Urban	155(77.5%)	
Rural	37(18.5%)	
Internet Usage Time (Hours)		10.06(7.19)
For what purpose do you use the internet?		
Entertainment	116(58%)	
Business	44(22%)	
Information	87(43.5%)	
Others	49(24.5%)	
Social media Usage Time (Hours)		6.07(5.76)
For what purposes do you use social media?		
Business	32(16%)	
Time pass	76(38%)	
Interacting with family or friends	83(41.5%)	
Entertainment	88(44%)	
Others	36(18%)	
No. of social media accounts		3.29(1.82)

Which Social Media app do you frequently use?	
Facebook	45(22.5%)
Instagram	137(68.5%)
Twitter	30(15%)
TikTok	54(27%)
YouTube	65(32.5%)
Others	29(14.5%)
Do you interact with people other than your family or friends on social media?	
Yes	101(50.5%)
No	79(39.5%)
Relationship in social media with friends	
Close	126(63%)
Not close	62(31%)

Assessment Measures

The following measures were used:

Maladaptive Covert Narcissism Scale (Cheek et al., 2013)

This scale was utilized to assess the levels of vulnerable narcissism. It contained 23 items on a 5-point Likert scale (1= "very uncharacteristic or untrue", 2 = "uncharacteristic", 3 = "neutral", 4 = "characteristic", 5 = "very characteristic or true"). Higher score indicates higher level narcissism. The reliability coefficient of the entire measure was a = .89.

Fear of Missing Out Scale (Mazlum et al., 2022)

This scale was utilized to assess the level of fear of missing out in university students. It consisted of 17 items including two sub-dimensions: private and social, with 9 items of private factor and 8 items of social factor. The scale is a 5-point Likert ("completely disagree" = 1, "disagree" = 2, "neither agree nor disagree" = 3, "agree" = 4, "completely agree" = 5). High score indicates elevated degree of FoMO overall and in the respective subscale. The reliability coefficient for the entire measure was a = .88.

Online Trolling Behavior Scale (Hamarta et al., 2021)

This scale was used to measure the level of online trolling behavior. It consisted of 16 items and three sub-dimensions which include harm-based trolling, fraudulent based trolling and provocation-based trolling. The scale is a 4-point Likert (1 = "strongly disagree", 2 = "disagree", 3 = "agree", 4 = "strongly agree"). Higher score indicates elevated degree of online trolling behavior overall and the respective subscale. The reliability coefficient for the entire measure was a = .89.

Procedure

Ethical approval for conducting the study was obtained from the Institute prior to data collection. Permission for a scale to be used in the study has been obtained from the relevant authors. Authorization for data collection was obtained from the respective universities. Data was collected from different universities of Lahore through in person administration following ethical guidelines. Informed consent of the participants was taken and they were briefed about the nature and purpose of the research. The right to withdraw at any moment was given to the candidates. Confidentiality for their information was ensured. For the present study 241 participants were volunteered, 200 responses selected after data cleaning and 41 responses

discarded due to invariant responding (straight-lining across all scale items) and systematic patterned responding (e.g., alternating or zigzag patterns). After the data collection process, the data was entered and analyzed using SPSS, the response rate was 83%.

Results

SPSS version 26.0 was used for the analyses. To find outliers and missing values, data screening was first done. Reliability assessments were then carried out for each scale and sub-scale (refer to Table 2). To further examine the relationship between the research variables, a Pearson product moment correlation analysis was performed (see Table 3). Furthermore, multiple linear regression analysis was administered to predict the cyber trolling behavior (See Table 4 & 5). Further, independent-samples t-test analyses were done to find gender differences in term of study variable (See Table 6).

Table 2

Psychometric Properties Scales and Sub-scales

Scales	*k*	*M*	*SD*	Range	Cronbach *α*
Maladaptive Covert Narcissism Scale	23	68.55	12.26	33-98	.80
Fear Of Missing Out Scale	17	50.1	11.2	17-77	.84
Private Factor Subscale	9	27.35	6.18	9-45	.73
Social Factor Subscale	8	22.72	6.94	8-38	.84
Cyber Trolling Scale	16	35.55	13.65	16-72	.92
Harm Based Trolling Subscale	9	20.34	7.95	9-43	.87
Provocation Based Trolling Subscale	4	8.48	4.23	4-20	.85
Fraud Based Trolling Subscale	3	6.73	3.2	3-14	.80

The results of Table 2 showed that all the scales had good Cronbach alpha to carry out the further analyses.

The correlation analysis indicated significant positive correlation among vulnerable narcissism, fear of missing out, and cyber trolling behavior (see Table 3). These findings suggest that students reporting higher levels of vulnerable narcissistic traits and FoMO also tended to report greater involvement in cyber trolling behaviors. The results showed that a positive relationship of vulnerable narcissism with harm-based trolling, fraud-based trolling. Furthermore, fear of missing out showed a positive relationship with harm based, provocation based, and fraud based trolling behaviors. The results indicated that private and social factors of fear of missing out showed positive relationship with cyber trolling behavior in university students. Additionally, the correlation between research variables and demographic variables was ascertained. Overall results indicated that gender showed a negative relationship with cyber trolling behavior and fear of missing out. Furthermore, the family system reported negative relationship with cyber trolling behavior and its subscales harm and fraud-based trolling. Further, residence status showed positive relationship with cyber trolling behavior and all of its subscales. Furthermore, no. of friends on social media showed a positive relationship with cyber trolling behavior and its subscale harm-based trolling

Table 3

Descriptive Statistics and Correlation Between Study Variables

Variable	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Gender[a]	-.07	.14	.08	.01	-.05	-.10	-.11	-.05	-.23**	-.18*	-.21**	-.26**	-.25**	-.26**	-.14*
2.Family Income	-	.11	.00	.06	.14	.21**	-.04	.10	.03	.00	.04	-.07	-.09	.03	-.11
3.Family System[b]	-	-	-.06	.03	-.16*	-.02	-.09	-.07	-.14	-.12	-.12	-.20**	-.20**	-.10	-.22**
4.Residence[c]	-	-	-	-.04	-.02	.11	.43**	-.03	-.09	-.13	-.03	.26**	.20**	.23**	.28**
5.Internet Usage Time	-	-	-	-	.59**	.13	-.08	.02	-.03	-.05	-.00	-.02	-.04	-.00	-.00
6.Social Media Usage Time	-	-	-	-	-	.10	-.02	-.01	.04	-.02	.08	.12	.11	.11	.11
7.No. of Social Media Accounts	-	-	-	-	-	-	.12	.13	.04	.06	.02	.11	.11	.08	.06
8.No. of social media Friends	-	-	-	-	-	-	-	-.07	.04	.02	.05	.19**	.20**	.13	.12
9.Vulnerable Narcissism	-	-	-	-	-	-	-	-	.49**	.47**	.38**	.18*	.18**	.12	.14*
10.Fear of Missing Out	-	-	-	-	-	-	-	-	-	.84**	.87**	.30**	.33**	.20**	.18**
11.Private Factor	-	-	-	-	-	-	-	-	-	-	.46**	.17*	.20**	.13	.03
12.Social Factor	-	-	-	-	-	-	-	-	-	-	-	.33**	.34**	.21**	.27**
13.Cyber Trolling Behaviour	-	-	-	-	-	-	-	-	-	-	-	-	.95**	.86**	.76**
15.Harm Based	-	-	-	-	-	-	-	-	-	-	-	-	-	.73**	.61**
16.Provocation Based	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.54**
17.Fraud Based	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[a] 0= male, 1= female; [b] 0 = joint, 1= nuclear; [c]0 = urban, 1= rural

**p<05. **p<01. ***p<001.*

Table 4
Multiple Linear Regression Analysis Predicting Cyber Trolling Behavior

Predictors	*B*	*SE*	95%*CI*		*β*
			LL	*UL*	
Constant	15.69**	5.58	4.68	26. 70	-
Vulnerable Narcissism	.05	.09	-.13	.22	.04
Fear of Missing out	.34**	.09	.15	.52	.28**
R^2				.09	
F (2,197)				9.52***	

**p<.05. **p<.01. ***p<.001.*

The table 4 showed that overall variance explained by the model was 9% with F (2,197) = 9.52, $p < .001$. The regression analysis indicated that fear of missing out significantly predicted cyber trolling behavior ($\beta = .28$, $p < .001$), whereas vulnerable narcissism was not a significant statistical predictor. This suggests that, within the current sample, FoMO accounted for unique variance in cyber trolling behavior beyond the contribution of vulnerable narcissism.

Table 5
Multiple Linear Regression Analysis of FoMO Subscales Predicting Cyber Trolling Behavior

Predictor	*B*	*SE*	95%*CI*		*β*
			LL	*UL*	
Constant	17.32**	5.59	6.31	28.32	-
Vulnerable Narcissism	.07	.09	-.10	.24	.06
Private Factor	.01	.18	-.35	.36	.01
Social Factor	.60**	.15	.30	. 90	.31**
R^2				.11	
F (3,196)				6.28***	

**p<.05. **p<.01 ***p<.001.*

The same analysis was conducted to examine whether FoMO subscales predicted cyber trolling behavior (see Table 5). Table 5 showed that overall variance explained by the model was 11% with F (3, 196) = 6.28, $p < .001$. The results showed social factor of fear of missing out positively predicted the cyber trolling behavior ($\beta = .31$, $p < .001$) in university students. However, vulnerable narcissism and the private factor of fear of missing out did not predict it.

Table 6
Results of Independent Sample t test for Gender Differences in Study Variable

Variable	Male (n = 91)		Female (n = 104)				
	M	*SD*	*M*	*SD*	*t*(193)	*p*	*Cohen's d*
Vulnerable Narcissism	69.23	12.63	67.98	12.04	1.00	.48	-
Fear of missing out	52.93	10.74	47.65	11.28	1.96	.00	.48
Private Factor	28.64	5.89	27.35	6.34	1.73	.01	.37
Social Factor	24.30	6.93	21.31	6.80	1.63	.00	.44
Cyber Trolling Behavior	39.23	13.17	32.02	13.48	2.84	.00	.54
Harm Based	22.44	7.59	18.38	7.98	2.88	.00	.52
Provocation Based	9.63	4.37	7.38	3.89	1.40	.00	.54
Fraud Based	7.16	3.30	6.26	3.08	3.15	.05	.28

**p<.05. **p<.01 ***p<.001.*

Table 6 showed significant gender differences in fear of missing out and cyber trolling behavior in university students. The results indicated that men showed higher levels of fear of missing out (M = 52.93, SD = 10.74) than women (M = 47.65, SD = 11.28). Further, the result indicated that cyber trolling behavior was also higher in men (M = 39.23, SD = 13.17) than women (M = 32.02, SD = 13.48). The same trend was found in subscales of fear of missing out and cyber trolling behavior, however, no gender differences were reported in vulnerable narcissism. This indicates that gender may represent a relevant demographic factor associated with these online behaviors.

Discussion

The aim of this research was to investigate the connection among vulnerable narcissism, fear of missing out and cyber trolling behavior in university students. The increase in the use of internet and social media has given rise to a number of issues that were not faced by people living in the pre-internet era. Fear of missing out and cyber trolling are the most prevalent. Hence, it is important to analyze the relationship between these variables and find out about their connection with vulnerable narcissism. The present study indicates a significant positive relationship between vulnerable narcissism, fear of missing out and cyber trolling behavior in university students. These results align with a previous study conducted by Brailovskaia et al. (2023) to explore the connection between fear of missing out, vulnerable narcissism and social media addiction. The sample comprised of 745 social media users including Male=365 and Female=380. The results showed a positive correlation among FoMO, vulnerable narcissism and social media addiction. Another research was conducted by Rohmann et al. (2024) to assess the personality traits and psychological mechanisms of trolls. The results suggested that people with vulnerable narcissism and grandiose narcissism tend to engage more in trolling behaviors. These results support the results of the present research. The findings of the present research align with research carried out by Carone et al. (2023) investigated the contribution of defense mechanism, grandiose narcissism and vulnerable narcissism to the fear of missing out in emerging adulthood. Their results showed that both grandiose and vulnerable narcissism contributed to FoMO. Further, in another study by Leite et al. (2023) to measure moderation effects of online behaviors among personality traits and addiction to Internet. Their results revealed that Narcissism was positively related with cyberstalking and trolling. Narcissism was also positively related with Addiction to Internet through Cyberstalking and Trolling.

The findings of the current research showed that vulnerable narcissism did not predict cyber trolling behavior in university students. These findings go in line with previous research carried out by Lopes et al. (2017) to investigate the connection between dark triad personalities and online trolling behavior in Facebook users. The sample size was 135 university students including 22 male and 113 female. Results suggested that narcissism was more associated to the tendency of seeing yourself as superior while psychopathy was more related with trolling behavior. Another by Volkmer et al. (2023) examined how social exclusion was influencing people's motivation to engage in trolling behavior; and the connections among humor styles and trolling behavior. The results showed that the differences in troll motivation were not explained by Machiavellianism and narcissism which supports the results of the current research. The present study also indicated that fear of missing out significantly positively predicted cyber trolling behavior in university students. These findings go in line with previous research done by Santos et al. (2023) to analyze the role of self-esteem and FoMO on online

trolling, examining the mediating role of antisocial online content exposure in social media users. Results revealed that FoMO was directly related to online trolling. Another study was done by Richter et al. (2018) to examine the association between FoMO, social media abuse, and parenting styles. Results showed that FoMO was positively related with social media abuse, So the findings of the present research are well supported. Further, gender differences in Fear of Missing Out were revealed during the research indicating Men had higher FoMO than women. These results go in line with a study carried out by Brailovskaia et al. (2023) to explore the connection between FoMO, vulnerable narcissism and social media addiction. The study also investigated the comparison between male and female groups. Sample of the study was social media users. Sample size was 745 including Male=365 and Female=380. The results showed higher levels of Fear of Missing Out in males than females. Another study was done by Parveiz et al. (2023) to explore the connection between fear of missing out, social comparison and social media addiction. The sample size was 200 participants within the age range of 18 to 30 among which there were 108 women and 92 men. The results showed that women are less likely to have fear of missing out as compared to men. These studies support the results of current study.

Furthermore, gender differences were found in terms of cyber trolling behavior in the present study. Men were more likely to show cyber trolling behavior than women. These findings go in line with research done by Lee et al. (2023) to examine the gender differences and effects of anonymity on online trolling and cyber victimization. The sample population was college students. The sample size was 151. Results showed that males were more prone to get involved in online trolling than females. Another study was conducted by Santos et al. (2023) to examine the association among online trolling, exposure to antisocial online content, frequency of social media uses, and gender. The sample included 429 participants that were at least 18 years old. The results showed higher levels of online trolling in men than in women. These studies support the results of current study.

Conclusion

In conclusion, the results revealed that vulnerable narcissism, fear of missing out and cyber trolling behavior had significant positive relationships with each other. Vulnerable narcissism and cyber trolling behavior had a significant positive relationship with both subscales of FoMO. Further vulnerable narcissism had a significant positive relationship with harm-based and fraud-based trolling, while FoMO had a significant positive relationship with all three subscales of cyber trolling behavior. Further men showed higher levels in cyber trolling behavior and fear of missing out.

Limitations and Suggestions

The present study has certain limitations that should be considered.

- First, the study was conducted among university students; therefore, the findings may not be generalized to the broader population.
- Future research may include participants from diverse populations to enhance the generalizability of findings.

- Additionally, the sample was collected only from universities in Lahore, and future studies may consider recruiting participants from different geographical regions to provide broader insights.
- Furthermore, the current study focused on young adults; future research may examine other age groups to explore possible differences across developmental stages.

Implications

The study bridges gap previously left in studies conducted in Pakistan on these variables. The study contributes to the field of cyber psychology on understanding what type of people usually engage in cyber trolling. The study will raise awareness about cyber trolling and types of trolling.

Author Declarations

Conflict of Interest

The authors declare that there is no conflict of interest.

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