

LONELINESS AND DOOMSCROLLING AMONG YOUNG ADULTS: MEDIATING ROLE OF MIND WANDERING

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DOI: <https://doi.org/10.5281/zenodo.22056788>

Keywords

loneliness, doomscrolling, mind wandering, young adults, social media, digital behavior.

Article History

Received: 07 January 2026

Accepted: 17 March 2026

Published: 31 March 2026

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Abstract

In recent years, problematic digital behaviors (such as excessive social media use) have been identified as a risk factor for loneliness among young adults. The current study evaluated the association between loneliness and doomscrolling among young adults and proposed that the association between these factors may be mediated by mind wandering. The cross-sectional quantitative research design was used and the sample consisted of 154 students from the university (77 male and 77 female) and they were convenience sampled. The UCLA Loneliness Scale, the Doomscrolling Scale, and the Mind Excessively Wandering Scale (MEWS) were used to assess loneliness, doomscrolling and mind wandering, respectively. The results showed statistically significant positive relationships for all three variables. The mediation analysis revealed evidence of full mediation, with a full explanation of the effect of loneliness on doomscrolling through mind wandering. Males also reported significantly higher loneliness and doomscrolling than females, as well. The results provide new empirical evidence for such a cognitive pathway between loneliness and compulsive digital use via attentional dysregulation and have implications for the design of mental health interventions for young adults with loneliness and maladaptive digital engagement.

INTRODUCTION

We live in a strange time. People have never been more digitally connected, and yet loneliness among young adults has quietly grown into one of the most serious psychological problems of our generation. Loneliness, at its core, is the painful gap between the social connection a person wants and the connection they actually have (Cacioppo & Cacioppo, 2018), and research has made it clear that this gap is widening among young adults at a pace that should concern all of us (Qualter et al., 2015). What makes this especially troubling is that loneliness is not just an emotional experience. It is a psychological state that slowly damages mental and physical health

(Ma et al., 2026a, 2026b), quietly increasing the risk for depression, anxiety (Ramzan et al., 2020, 2025), cognitive decline, and in severe cases, premature death (Holt-Lunstad et al., 2015; Mahnaz & Akram, 2026).

For a growing number of them, the answer lives inside their phones. More specifically, it lives in something called doomscrolling. Academically, doomscrolling is described as the compulsive and repetitive consumption of negative or threatening online content that continues despite the emotional harm it causes (Ytre-Arne & Moe, 2021). Emerging research has begun linking this behavior to depression, anxiety, and broader psychological distress (Buchanan et al., 2024), but

the deeper question of who is most vulnerable to it, and why, has not yet been fully answered.

Loneliness, we believe, is one of the most honest answers to that question. When people feel lonely, they reach for their phones almost instinctively, searching for something to fill the silence (Nowland et al., 2018). Research has consistently found associations between loneliness and problematic internet use, compulsive scrolling, and greater exposure to negative online content (Throuvala et al., 2019). But the cognitive process sitting in the middle, the internal mechanism through which loneliness actually becomes the compulsive behavior of doomscrolling, remains unclear. That is the gap this study is trying to close.

The concept we believe fills that gap is mind wandering. Mind wandering refers to those ordinary moments when attention quietly slips away from the present task and starts drifting through unrelated territory (Smallwood & Schooler, 2015). Studies suggest we spend close to half of our waking hours in this kind of mental drift (Killingsworth & Gilbert, 2010). Loneliness, almost by definition, removes the attentional anchor, creating an internal world that is emotionally painful and an external world that feels unrewarding, and that combination is precisely the kind of psychological soil in which mind wandering grows most freely (Marchetti et al., 2016). Worse still, when a lonely mind wanders, it tends to drift toward rumination and negative self-evaluation (Struijs et al., 2017).

But mind wandering also quietly undermines self-regulation, the capacity to monitor what we are doing and steer ourselves back toward our intentions, which depends heavily on attentional resources that mind wandering steadily consumes (Hofmann et al., 2012). A person who is lonely, whose mind is already wandering and whose self-regulation is already depleted, is in exactly the wrong psychological place to resist the pull of endless, emotionally charged digital content (Ward et al., 2017). This, we argue, is the hidden pathway from loneliness to doomscrolling. No study has examined this specific pathway before. The present research fills that gap by testing a mediation model in which mind wandering

serves as the cognitive bridge between loneliness and doomscrolling among young adults.

No previous work has investigated this particular chain of effects. This paper aims to fill that void by investigating a mediation process wherein mind-wandering acts as the cognitive link between loneliness and doomscrolling in young adults. In addition to advancing theory regarding the interrelationships between the three constructs, such research also holds potential implications for application since mind-wandering could be a key to mitigating the adverse effects of doomscrolling on psychological well-being. Should this be true, the focus on improving attentional control would become a promising avenue for intervention? This is the argument that will be substantiated using the evidence collected and analyzed in what follows.

1.1 Theoretical Framework

The theoretical framework of this study consists of Compensatory internet use theory, Uses and gratifications theory and Control failure theory. This theoretical framework provides a better understanding how loneliness and doomscrolling among young adults are linked with each other and how mind wandering mediates the relationship between them.

1. Compensatory Internet Use Theory

The Compensatory Internet Use Theory explains why lonely people continue to return to the Internet, proposing that individuals seek out online environments to compensate for unmet social needs in their physical lives (Kardefelt-Winther, 2014). The issue becomes that this compensation does not genuinely compensate, but rather often makes the problems of loneliness worse, creating a cycle of avoidant behavior that only increases reliance on online environments as a coping mechanism (Twenge et al., 2018).

2. Uses and Gratifications Theory

Uses and Gratifications Theory proposes that people actively choose media to fulfill specific psychological needs, including the need for information, social connection, and emotional stimulation (Katz et al., 1973). When these needs

are chronically unmet, as they are for lonely individuals, media consumption can shift from purposeful and satisfying to compulsive and hollow (Elhai et al., 2018).

3. Control Failure Theory

The Control Failure Theory posits that negative emotional states impair the executive attentional capacity required to maintain focus, leading to uncontrolled mind wandering (McVay & Kane, 2010). Loneliness is a chronic and cognitively demanding state uniquely positioned to cause such control failures. Individuals experiencing loneliness must allocate considerable cognitive capacity to regulating negative emotional states, leaving little room for sustained attention that could otherwise regulate mind wandering (Mooneyham & Schooler, 2013).

1.2 Problem Statement

The phenomenon of loneliness in young adults aged 18 to 26 has reached alarming proportions worldwide, but little is known about the cognitive processes which underlie its relationship with detrimental digital behaviors. Although there is a growing body of evidence indicating a relationship between loneliness and excessive social media usage, there is a total lack of empirical studies on the mediating role of mind wandering in this relationship. Mind wandering, which is associated with uncontrollable attention disengagement, is hypothesized to act as a cognitive mediator which transforms loneliness into compulsive digital consumption behaviors. The current study aims to examine whether mind wandering acts as a mediator in the relationship between loneliness and doomscrolling in young adults aged 18 to 26.

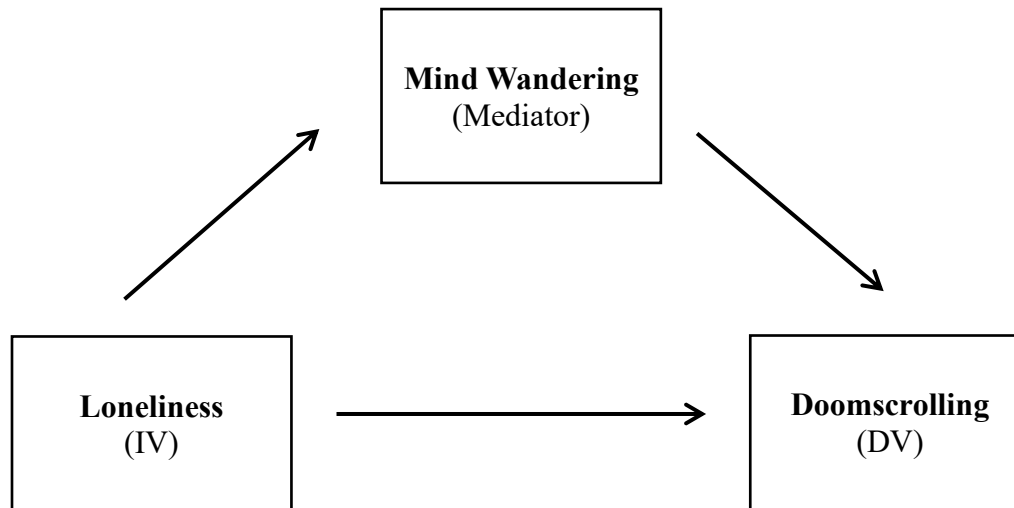
1.3 Rationale of the Study

This emerging relationship between psychological well-being and digital behavior is one of the most important areas of research in contemporary mental health studies. Young adulthood (ages 18–26) is a developmental period characterized by high loneliness due to life transitions and a tendency to replace social interactions with digital ones. Young adults are the biggest users of social networking sites and consequently the biggest victims of digital addiction, including doomscrolling. Although loneliness has been related to excessive social media behavior, and mind wandering has been related to negative emotions and passive viewing, no published research to date has directly investigated the mediating role of mind wandering in the relationship between loneliness and doomscrolling. If mind wandering is established as a mediator, it provides promise for intervention, because psychological interventions designed to improve attention and mindfulness among lonely young adults can be useful tools to reduce harmful digital behaviors.

1.4 Objectives of the Study

- To examine the relationship between loneliness and doomscrolling among young adults.
- To assess the association between loneliness and mind wandering.
- To investigate the relationship between mind wandering and doomscrolling.
- To determine whether mind wandering plays a role in mediating the relationship between loneliness and doomscrolling.

1.5 Conceptual Framework



The conceptual model proposes that loneliness is positively associated with doomscrolling, and this relationship is mediated by mind wandering, such that individuals who feel lonelier are more likely to experience increased mind wandering, which in turn leads to higher engagement in doomscrolling behavior.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

What is most alarming in contemporary times, however, is the disproportionate level of loneliness found in young adults, who, despite living in a time with unprecedented levels of digital connectivity, are found to be amongst the loneliest individuals in any age group (Qualter et al., 2015). Loneliness in young adulthood has been repeatedly linked to clinically significant levels of depression, anxiety, low self-esteem, and a variety of maladaptive coping strategies (Victor & Yang, 2012). Lonely individuals are more likely to view ambiguous social situations as threatening and are more likely to ruminate excessively on negative social information (Cacioppo & Hawkley, 2010; Elhai et al., 2017). Such a pattern of thought is particularly concerning in an online environment where negative and emotionally arousing information is not only plentiful but is also carefully curated for maximum engagement.

2.1 Loneliness and Doomscrolling among Young Adults

Loneliness has always been described as a subjective experience of disconnection, which is a result of a perceived discrepancy between the social relationships people want and those they actually have (Perlman & Peplau, 1981). The consequences of loneliness during this period of life are far-reaching. The relationship between loneliness and digital behavior adds another layer to this equation. For lonely young adults, passive social media use appears to make loneliness worse rather than better (Verduyn et al., 2020).

On the other way, Doomscrolling is the compulsive consumption of negative and alarming information on digital platforms, characterized not only by the nature of the information but also by the compulsive and self-destructive nature of the act itself (Ytre-Arne & Moe, 2021). The COVID-19 pandemic brought doomscrolling into public consciousness, but it is a behavioural pattern rooted in deep psychological vulnerabilities that existed long before 2020 (Sharma & Sharma, 2020).

The Cognitive-Behavioral Model emphasizes the role of distorted thinking in maintaining compulsive internet behavior (Congman et al., 2019). Lonely individuals often have maladaptive thoughts about their own social value and tend to catastrophize social life (Davis, 2001). These thinking patterns combine with negative

emotional states to produce problematic internet behaviors, including doomscrolling, maintained through negative reinforcement (Andreassen et al., 2017). The human brain also has a negativity bias, a tendency to automatically focus on negative information more than neutral or positive information (Baumeister et al., 2001). This negativity bias is manipulated by social media algorithms programmed to maximize interactions by prioritizing emotionally engaging content (Ytre-Arne & Moe, 2021). In lonely young adults who are already emotionally unstable, this represents a near-perfect combination for a pattern of dangerous digital consumption (Elhai et al., 2018).

Hypothesis (H1): *Loneliness will be positively associated with doomscrolling among young adults.*

2.2 Mind Wandering and Loneliness

Research has found that people spend nearly half of their wakeful hours thinking about something other than their current activity (Killingsworth & Gilbert, 2010). This phenomenon, known as mind wandering, is defined as the spontaneous decoupling of attention from the present environment toward internally generated and stimulus-independent thought (Smallwood & Schooler, 2015). When uncontrolled and dominated by negative self-referential thoughts, it is a major source of psychological problems and cognitive deficits (Seli et al., 2016).

Previous studies describe how anxiety and emotional distress increase the negative, threat-based content of mind wandering (Eysenck et al., 2007). A now-famous series of studies demonstrated that individuals are significantly less happy while experiencing episodes of mind wandering than when focused, regardless of what they are doing (Killingsworth & Gilbert, 2010). In lonely individuals, the attentional dysregulation associated with loneliness contributes to increased mind wandering, which in turn contributes to increased loneliness, creating a vicious cycle from which there is no respite without intervention (Poerio et al., 2013).

Hypothesis (H2): *Loneliness will be positively associated with mind wandering among young adults.*

2.3 The Role of Mind Wandering

Loneliness results in a lack of attentional control which leads to a constant negative affective state which in turn increases the rate and negative valence of mind-wandering episodes (Eysenck et al., 2007). A mind that is already wandering, unfocused, and primed for negative content is precisely the kind of mind that is most susceptible to being captured by algorithmically curated feeds of unpleasant content that define the doomscrolling experience. Research further explains why this attentionally adrift mind gravitates online, as lonely individuals seek digital stimulation to compensate for unmet social needs (Kardefelt-Winther, 2014).

Hypothesis (H3): *Mind wandering will be positively associated with doomscrolling among young adults.*

The cognitive and structural similarities between mind wandering and doomscrolling should also be highlighted (Ahmad et al. 2022). Both are characterized by low-effort, low-resistance engagement that unfolds in the absence of deliberate goal-directed intention. Both tend to be sustained not by genuine satisfaction but by the path of least resistance in an attentionally depleted cognitive system (Javaid & Ramzan, 2026). Ruminative thinking has been independently linked to both minds wandering and doomscrolling, as well as to negative emotional outcomes like loneliness and compulsive media use (Nolen-Hoeksema et al., 2008). While there is a strong theoretical basis for this model, there has been no empirical investigation of this specific pathway, making the current research a novel and timely contribution to cognitive, clinical, and digital psychology.

Hypothesis (H4): *Mind wandering will significantly mediate the relationship between loneliness and doomscrolling among young adults.*

METHOD

3.1 Research Design

A quantitative cross-sectional correlational research design was used. This design was considered appropriate given the objective of examining relationships among study variables at a single point in time

3.2 Population

The sample consisted of 154 students (77 males, 77 females) selected through convenient sampling. Participants were young adults aged 18 to 26, enrolled in intermediate, undergraduate, or postgraduate programs at government sector universities and colleges in Faisalabad, Pakistan.

3.2.1 Inclusion and Exclusion Criteria

Young adults between the ages of 18 and 26 years enrolled in intermediate, undergraduate, or postgraduate programs at government sector universities and colleges in Punjab were included in the study. Students from private sector institutions, those outside the specified age range, and students studying or residing outside Faisalabad were excluded.

3.3 Operational Definitions

3.3.1 Loneliness

Loneliness is defined as a feeling of loneliness that is caused by not having enough or the right kind of social interaction (Russell, 1996). It is considered as a one-dimensional phenomenon reflecting people's global feelings of social and emotional isolation, not limited to a specific relationship domain. Loneliness was measured in the present study with the UCLA Loneliness Scale (Version 3) with higher scores indicating higher perceived loneliness.

3.3.2 Doomscrolling

Doomscrolling can be described as a repetitive and compulsive habit of consuming negative and/or alarming information online, despite causing emotional suffering (Ytre-Arne & Moe, 2021). Doomscrolling was operationalized in this study following the four criteria presented in the instrument: compulsive checking behavior, distress tolerance, disruption to daily functioning, and severity of the habit. It was evaluated by Doomscrolling Questionnaire (Melnik & Stadnik, 2024) and the scores were higher, the more severe doomscrolling behavior was.

3.3.3 Mind Wandering

The operational definition of mind wandering is that it involves a spontaneous disengagement of

attention from an external task towards internally generated thoughts and mental imagery that are neither related to the external task just performed nor part of the ongoing task (Smallwood & Schooler, 2015). This study was conducted on excessive and spontaneous mind wandering, as defined by Mowlem et al., (2019) as a perceived loss of control over shifting thoughts and a failure to maintain attention on one train of thought, and not deliberate or goal directed mind wandering. It was measured through the Mind Excessively Wandering Scale (Mowlem et al., 2019): higher scores indicate more often and more disturbingly mind wandering episodes.

3.4 Instruments

3.4.1 UCLA Loneliness Scale (Version 3)

The UCLA Loneliness Scale (Russell, 1996) is a 20 item self-report instrument that attempts to measure the subjective experience of loneliness and social isolation. Items are rated on a 4-point Likert scale (1 = Never to 4 = Often) and total scores are calculated by adding across the items after reversing positively worded items; higher scores reflect greater loneliness. The scale is widely validated for use across age groups and across cultures and the original validation studies reported high internal consistency (α from .89 to .94) and good test-retest reliability over a one-year period. The scale had an acceptable level of internal consistency ($\alpha = .845$) in the present study.

3.4.2 Doomscrolling Scale

Doomscrolling Questionnaire (Melnik & Stadnik, 2024) is a 12-item self-report instrument for measuring the compulsive engagement with negative and distressing digital content. The instrument is structured around four criteria (subscales) that include three items each, representing unique behavioral and cognitive aspects of the severity of doomscrolling. A five-point Likert scale from 1-5 is used to rate items, and total scores (corrected with the coefficient of the instrument) are used to determine the severity in the following levels: minimal, mild, and above. The internal consistency of the scale was good ($\alpha = .851$) in the present study.

3.4.3 Mind Excessively Wandering Scale (MEWS).

MEWS (Mowlem et al., 2019) is a 15 item self-report scale designed to assess the frequency and disruptiveness of mind wandering events, based on the self-reported thoughts of adult ADHD patients. To score the items are rated on a 4-point Likert scale ranging from 1 to 4 with higher scores indicating greater levels of excessive mind wandering. The scale was developed and validated by Mowlem et al. (2019) who found an excellent internal consistency ($\alpha > .90$) and high sensitivity and specificity (each .90) for distinguishing clinical and non-clinical mind wandering profiles, and has been cross-culturally validated in several populations. The scale had good internal consistency ($\alpha = .904$) in the present study.

3.5 Procedure

Data were collected through printed and online self-report questionnaires administered to intermediate, undergraduate, and postgraduate students. The objectives of the study were explained to participants and voluntary participation was requested. Written informed consent was obtained from all participants prior

to data collection. Confidentiality of responses was assured, and data were used solely for research purposes.

3.6 Ethical Considerations

Written informed consent was obtained from all participants prior to data collection. Participants were briefed about the purpose of the research, and their right to withdraw at any time without consequence was emphasized. All data obtained were kept strictly confidential and used solely for the purposes of this research.

RESULTS AND FINDINGS

4.1 Results

Data were analyzed using SPSS version 25. Reliability analysis (Cronbach's alpha), descriptive statistics, Pearson product-moment correlation, independent samples t-test, one-way ANOVA, and mediation analysis via PROCESS SPSS macro (Hayes, 2022) Model 4 with 5,000 bootstrap samples were employed to test the study hypotheses. The present study aimed to investigate the relationship among loneliness, doomscrolling, and mind wandering among university students ($N = 154$). The findings are presented in tabular form below.

Table 1
Demographic Characteristics as Percentage of the Sample ($N = 154$)

Characteristics	N	%
Gender		
Male	77	50.0%
Female	77	50.0%
Family System		
Nuclear	120	77.9%
Joint	34	22.1%
Age Group		
18–20 years	47	30.5%
21–23 years	78	50.6%
24–26 years	29	18.8%

Education Level		
Intermediate	20	13.0%
Bachelors	91	59.1%
Masters	43	27.9%
Socioeconomic Status		
Upper class	5	3.2%
Middle class	29	18.8%
Lower class	120	77.9%
Daily Social Media Usage		
2-4 hours	13	8.4%
4-6 hours	17	11%
6-8 hours	34	22.1%
8-10 hours	47	30.5%
10-12 hours	24	15.6%
More than 12 hours	19	12.3%

Note. SES = Socioeconomic Status.

Table 1 presents the demographic characteristics of the sample. The sample consisted of 154 university students with equal gender distribution (50% male, 50% female). Majority of participants belonged to nuclear family systems (77.9%). Regarding age, most participants were in the 21-23 years group (50.6%), followed by 18-20 years (30.5%) and 24-26 years (18.8%). In terms of

education, bachelor's students were the majority (59.1%), followed by masters (27.9%) and intermediate (13.0%). Most participants belonged to lower SES (77.9%). Social media usage data indicated that the largest proportion used social media for 8-10 hours daily (30.5%), followed by 6-8 hours (22.1%).

Table 2
Reliability Analysis of Study Scales (N = 154)

Scale	No. of Items	α	Interpretation
UCLA Loneliness Scale	20	.845	Excellent
Doomscrolling Scale	12	.851	Excellent
Mind Excessively Wandering Scale (MEWS)	15	.904	Excellent

Note. α = Cronbach's alpha. Benchmarks: $\geq .90$ = Excellent; .80-.89 = Good; .70-.79 = Acceptable.

Table 2 presents the reliability coefficients for all three scales. The Cronbach's alpha for the UCLA

Loneliness Scale was .845, for the Doomscrolling Scale was .851, and for the MEWS was .904. All

values exceeded the recommended threshold of .70, confirming excellent internal consistency.

Table 3

Descriptive Statistics for Study Variables (N = 154)

Variable	N	Min	Max	M	SD	Skewness
Loneliness	154	23	71	45.20	9.87	.109
Doomscrolling	154	24	112	51.70	18.22	.772
Mind Wandering	154	15	57	34.84	9.72	.295

Note. M = Mean; SD = Standard Deviation. Skewness values within ± 2 indicate approximately normal distribution.

Table 3 shows the descriptive statistics for the study variables. All skewness values were within the acceptable range of ± 2 , confirming normal

distribution of data and supporting the use of parametric statistical analyses.

Table 4

Correlation among Loneliness, Doomscrolling, and Mind Wandering (N = 154)

Variable	1	2	3
1. Loneliness	1		
2. Doomscrolling	.232**	1	
3. Mind Wandering	.429**	.552**	1

Note. ** $p < .01$ (2-tailed).

Table 4 presents the Pearson product-moment correlations. Loneliness was significantly and positively correlated with doomscrolling ($r = .232$, $p < .01$) and mind wandering ($r = .429$, $p < .01$).

Mind wandering showed a strong positive correlation with doomscrolling ($r = .552$, $p < .01$), supporting H1, H2, and H3.

Table 5

Mediation Analysis

Antecedent	M (Mind Wandering)				Y (Doomscrolling)			
	B	SE	p	β	B	SE	p	B
X (Loneliness)	a .423	.072	<.001	.429	c' -.011	.139	.938	-.008
M (Mind Wandering)	-	-	-		b 1.039	.141	<.001	.552
	$R^2 = .1842$				$R^2 = .3049$			
	$F(1, 152) = 34.33$, $p < .001$				$F(2, 151) = 33.12$, $p < .001$			

Note. SE = standard error; X = Loneliness (predictor); M = Mind Wandering (mediator); Y = Doomscrolling (outcome). Indirect effect ($a \times b$) = .440, Boot SE = .100, 95% CI [.247, .640]. Bootstrap samples = 5,000.

$a = .423^{**}$

Figure 1

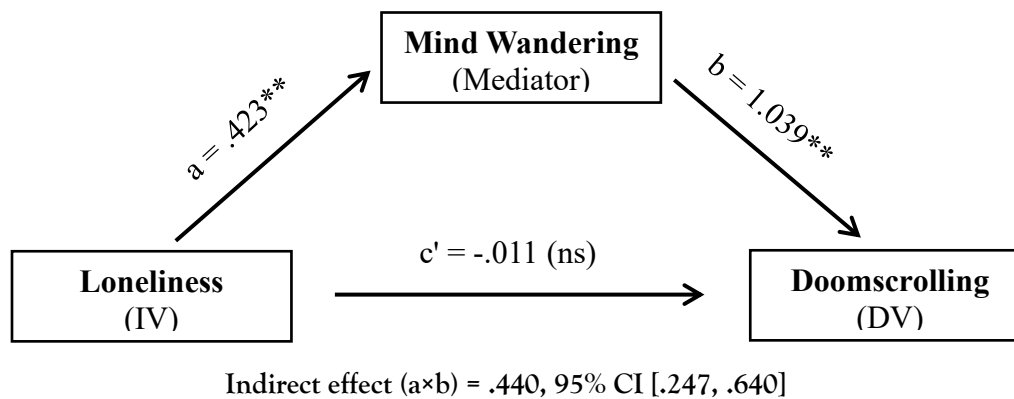


Table 5 presents results of the simple mediation analysis conducted using PROCESS macro (Hayes, 2022) Model 4. Loneliness significantly predicted mind wandering ($b = .423$, $SE = .072$, $p < .001$), which in turn significantly predicted doomscrolling ($b = 1.039$, $SE = .141$, $p < .001$).

The direct effect of loneliness on doomscrolling was non-significant ($b = -.011$, $SE = .139$, $p = .938$), while the indirect effect through mind wandering was significant ($b = .440$, 95% CI [.247, .640]), confirming full mediation and supporting H4.

Table 6

Difference of Loneliness, Doomscrolling, and Mind Wandering among Males and Females

	Male M	Male SD	Female M	Female SD	t	df	p	Cohen's d
Loneliness	47.69	9.02	42.71	10.11	3.223	152	.002	0.52
Doomscrolling	55.81	17.91	47.60	17.69	2.861	152	.005	0.46
Mind Wandering	36.16	8.20	33.53	10.93	1.684	140.99	.094	0.27

Note. $n(\text{male}) = 77$, $n(\text{female}) = 77$. For Mind Wandering, equal variances not assumed (Levene's $F = 8.506$, $p = .004$).

Table 6 reveals a significant mean difference in loneliness between males ($M = 47.69$, $SD = 9.02$) and females ($M = 42.71$, $SD = 10.11$), $t(152) = 3.223$, $p = .002$, with males scoring higher.

Similarly, males reported significantly higher doomscrolling than females, $t(152) = 2.861$, $p = .005$. No significant gender difference was found in mind wandering, $t(140.99) = 1.684$, $p = .094$.

Table 7

Difference of Loneliness, Doomscrolling, and Mind Wandering among Nuclear and Joint Family System

Variables	Nuclear M	Nuclear SD	Joint M	Joint SD	t	df	p	Cohen's d
Loneliness	44.28	10.14	48.47	8.17	-2.217	152	.028	0.45
Doomscrolling	51.47	18.51	52.53	17.39	-.299	152	.765	0.06
Mind Wandering	34.39	9.93	36.44	8.91	-1.086	152	.279	0.22

Note. n(nuclear) = 120, n(joint) = 34.

Table 7 reveals a significant difference in loneliness between nuclear (M = 44.28, SD = 10.14) and joint family students (M = 48.47, SD = 8.17), $t(152) = -2.217$, $p = .028$, with joint

family students reporting higher loneliness. No significant differences were found in doomscrolling or mind wandering based on family system.

Table 8

Difference of Loneliness, Doomscrolling, and Mind Wandering among Education Levels

Variables	Intermediate M (SD)	Bachelors M (SD)	Masters M (SD)	F(2,151)	η^2	Post-Hoc
Loneliness	47.55 (8.58)	45.82 (9.70)	42.79 (10.49)	2.060	.027	NS
Doomscrolling	53.00 (17.20)	51.25 (18.12)	52.05 (19.24)	.085	.001	NS
Mind Wandering	36.20 (6.53)	35.57 (10.31)	32.67 (9.50)	1.531	.020	NS

Note. η^2 = eta squared, NS = non-significant

Table 8 reveals no significant difference among education groups in loneliness $F(2, 151) = 2.060$, $p = .131$, doomscrolling $F(2, 151) = .085$, $p =$

.918, or mind wandering $F(2, 151) = 1.531$, $p = .220$.

Table 9

Difference of Loneliness, Doomscrolling, and Mind Wandering among Social Media Usage Groups

Variables	2-4 hrs M(SD)	4-6 hrs M(SD)	6-8 hrs M(SD)	8-10 hrs M(SD)	10-12 hrs M(SD)	>12 hrs M(SD)	F(5,148)	η^2	Post-Hoc
Loneliness	45.69 (11.89)	42.35 (9.45)	43.38 (9.40)	45.55 (9.65)	44.71 (8.64)	50.42 (10.73)	1.642	.053	NS
Doomscrolling	46.23 (18.32)	41.88 (14.82)	52.24 (13.64)	48.64 (16.30)	58.38 (21.44)	62.42 (21.80)	3.767**	.113	6>2, 5>2, 6>4
Mind Wandering	34.38 (11.81)	30.00 (9.39)	32.59 (9.32)	34.66 (9.11)	38.96 (9.70)	38.79 (8.33)	2.870*	.088	5>2

Note. Social media usage groups: 2-4 hours (n=13), 4-6 hours (n=17), 6-8 hours (n=34), 8-10 hours (n=47), 10-12 hours (n=24), more than 12 hours (n=19). η^2 = eta squared. * $p < .05$. ** $p < .01$.

Table 9 indicates no significant difference in loneliness among social media usage groups, $F(5, 148) = 1.642$, $p = .152$. However, significant differences were found in doomscrolling $F(5, 148) = 3.767$, $p = .003$, and mind wandering $F(5, 148) = 2.870$, $p = .017$. Post hoc analysis (Tukey HSD) indicated that participants using social media for 4–6 hours ($M = 41.88$, $SD = 14.82$) reported significantly lower doomscrolling

compared to those using it for 10–12 hours ($M = 58.38$, $p = .039$) and more than 12 hours ($M = 62.42$, $p = .007$). Similarly, for mind wandering, the 4–6 hours group ($M = 30.00$, $SD = 9.39$) reported significantly lower scores than the 10–12 hours group ($M = 38.96$, $p = .037$), suggesting that greater social media usage is associated with increased doomscrolling and mind wandering.

Table 10

Difference of Loneliness, Doomscrolling, and Mind Wandering among Socioeconomic Status Groups

Variables	Upper Class	Middle Class	Lower Class	F(2,151)	η^2	Post-Hoc
	M (SD)	M (SD)	M (SD)			
Loneliness	40.80 (14.96)	43.62 (8.51)	45.77 (9.94)	1.068	.014	NS
Doomscrolling	60.00 (16.33)	53.93 (16.99)	50.82 (18.57)	.876	.011	NS
Mind Wandering	29.80 (10.35)	33.69 (8.09)	35.33 (10.04)	1.030	.013	NS

Note. SES groups: Lower class, Middle class, Upper class. η^2 = eta squared, NS = non-significant

Table 10 indicates no significant difference among socioeconomic status groups in loneliness $F(2, 151) = 1.068$, $p = .346$, doomscrolling $F(2, 151) = .876$, $p = .418$, or mind wandering $F(2, 151) = 1.030$, $p = .360$.

Findings of the present study show a significant correlation among loneliness, doomscrolling, and mind wandering. Full mediation was confirmed, with mind wandering fully mediating the relationship between loneliness and doomscrolling. Gender differences were found, with males scoring higher on both loneliness and doomscrolling. Joint family students reported higher loneliness than nuclear family students. Significant differences in doomscrolling and mind wandering were found based on social media usage hours. No significant differences were found based on age group, education level, or socioeconomic status.

4.2 Discussion

The present study aimed to examine the relationship among loneliness, doomscrolling, and mind wandering, with a specific focus on the mediating role of mind wandering in the

relationship between loneliness and doomscrolling among university students. The findings are discussed in light of the study hypotheses and existing literature.

The first hypothesis, that there exists a positive correlation between loneliness and doomscrolling proved valid ($r = .232$, $p < .01$). It is in agreement with the theory developed by Kardefelt-Winther (2014), according to which lonely people use technology as an escape from social needs deprivation, which typically leads to compulsive and empty digital consumption. As lonely youth lack meaningful relationships offline, they tend to be more susceptible to negative information presented on social media through algorithms, characteristic of doomscrolling (Ytre-Arne & Moe, 2021). Moreover, the finding can be explained by the results obtained by Elhai et al. (2018), showing the relationship between psychological needs' deprivation and problematic use of digital media.

The second hypothesis, that loneliness would be positively associated with mind wandering, was also supported ($r = .429$, $p < .01$). This finding is consistent with the Control Failure Theory

proposed by McVay & Kane (2010), which posits that negative emotional states deplete the executive attentional resources needed to maintain focus, resulting in increased and involuntary mind wandering. The finding is further supported by Marchetti et al. (2016), who demonstrated that spontaneous thought and vulnerability to negative mood are closely intertwined, and by Mooneyham & Schooler (2013), who showed that emotionally taxing states are among the strongest predictors of attentional disengagement.

The third hypothesis, that mind wandering would be positively associated with doomscrolling, was supported with the strongest correlation in the study ($r = .552, p < .01$). This is theoretically consistent with the notion that mind wandering, by consuming attentional and self-regulatory resources, leaves individuals cognitively ill-equipped to resist low-effort, high-stimulation digital content (Ward et al., 2017). Hofmann et al. (2012) demonstrated that executive functioning and self-regulation depend heavily on attentional resources, which mind wandering systematically depletes. Nolen-Hoeksema et al. (2008) further supported this link by establishing the shared cognitive architecture of ruminative thinking, mind wandering, and compulsive media use.

Above all else, the fourth and main hypothesis that mind wandering will mediate the effect of loneliness on doomscrolling received full support. The results of the mediation analysis showed that after controlling for the effect of mind wandering, the direct effect of loneliness on doomscrolling disappeared, whereas the indirect effect still remained significant ($b = .440, 95\% \text{ CI } [.247, .640]$). For the first time ever, the findings provided evidence that there exists a cognitive mediation model connecting these constructs. Lonely people are likely to engage in negative mind wandering (Struijs et al., 2017), which makes them prone to doomscrolling.

The study found that there were gender differences with males showing significantly higher scores of loneliness and doomscrolling. This might be due to the difference in the extent to which individuals rely on their social support

system since females have been shown to have larger social support networks than males (Victor & Yang, 2012). These larger networks offer better emotional support and thus reduce loneliness as well as the tendency to engage in activities such as doomscrolling on social media. It was also interesting to note that students from joint family systems were significantly lonelier than students from nuclear families since the presence of members from one's close family within the same household may not mean that emotional bonding takes place (Luhmann et al., 2016). Differences in doomscrolling and mind wandering scores were found among students depending on the time they spent using social media. Post hoc tests revealed that the group spending between 4 to 6 hours on social media had significantly lower levels of both behaviors compared to the other two groups.

4.3 Limitations of the Study

- The sample was collected only from government sector universities in Faisalabad, limiting generalizability to other regions and university types.
- The cross-sectional design prevents any conclusions about the direction of causality over time.
- Self-report measures are subject to social desirability bias and retrospective recall limitations.
- English-language scales were used, which may have introduced comprehension difficulties for some participants.
- The sample size relative to the broader young adult population limits statistical power and generalizability.

4.4 Suggestions for Future Research

- Future studies should employ longitudinal designs to establish temporal and causal relationships among the study variables.
- Culturally adapted or Urdu versions of the scales should be used to ensure greater accessibility within the Pakistani context.
- Samples should be drawn from both public and private sector universities across multiple cities to enhance generalizability.

- Experimental designs employing mindfulness-based attention training should be used to test whether reducing mind wandering mitigates doomscrolling in lonely individuals.
- Future research should examine additional mediators and moderators, such as self-compassion, social support, and smartphone dependency.
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4.5 Implications of the Study

The findings of the present study carry meaningful implications for both research and practice. At the theoretical level, the study provides the first empirical evidence for a cognitive mediation pathway linking loneliness to doomscrolling through mind wandering, enriching the existing literature on digital mental health and attentional regulation. The findings extend the application of Control Failure Theory (McVay & Kane, 2010) and Compensatory Internet Use Theory (Kardefelt-Winther, 2014) to the specific context of doomscrolling behavior among young adults.

On a practical note, the mediation role of mind-wandering offers substantial implications for designing interventions. Instructing lonely people on reducing their screen usage is unlikely to be an effective solution in light of the existing evidence indicating that this strategy is ineffective (Twenge et al., 2018). Instead, one might want to consider targeting attention dysregulation as part of the issue. The use of mindfulness-based cognitive therapy in addressing mind-wandering, enhancing attention regulation, and mitigating ruminative thought processes has been proven to be effective (Querstret et al., 2018). The implementation of such a strategy within universities would tackle both mind-wandering and its outcomes in the digital realm.

Educational institutions should also consider the role of genuine social connection in reducing loneliness among students. Mental health practitioners working with young adults presenting with problematic digital behavior may benefit from assessing loneliness and attentional control difficulties as contributing factors, rather than treating doomscrolling as an isolated behavioral problem. Policymakers should

recognize that doomscrolling is not merely a habit but a psychologically motivated behavior rooted in unmet social needs and cognitive vulnerability.

4.6 Conclusion

The present study investigated the relationship among loneliness, doomscrolling, and mind wandering in a sample of 154 university students. Results confirmed significant positive correlations among all three variables and established that mind wandering fully mediates the relationship between loneliness and doomscrolling. These findings provide the first empirical support for a theoretically grounded cognitive pathway in which the painful experience of loneliness triggers attentional dysregulation in the form of mind wandering, which in turn increases vulnerability to compulsive doomscrolling behavior.

Furthermore, the presence of gender difference was also observed where males were found to have a higher rate of loneliness and doomscrolling. Social media use was stated to increase the rate of doomscrolling and mind-wandering. There was no observable difference with regard to age, level of education, and socioeconomic status, implying that the relationship between loneliness and mind-wandering and doomscrolling might be universal among university students.

All these factors lead us to conclude that any consideration of ways to solve the problem of addressing the underlying psychological reasons why people engage in doomscrolling would necessarily take into account the psychological nature of the phenomenon, which includes feelings of loneliness and lack of concentration. It could even be that the effects of bad conduct within technology can be reduced through separate treatment of mind-wandering and social isolation.

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