

The mediating effect of virtual sharing on the relationship between cyber-ostracism and digital well-being

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Abstract

There is growing evidence that cyber-ostracism adversely affects digital well-being, yet further research is needed to clarify the mechanisms underlying this relationship. This study examines the impact of cyber-ostracism on the digital well-being of university students, with a particular focus on the mediating role of virtual sharing. Drawing on survey data from a sample of 285 undergraduate students, the research employed correlation and mediation analyses to explore the relationships among cyber-ostracism, virtual sharing behaviors, and digital well-being. Results revealed that cyber-ostracism significantly and negatively predicted digital well-being while significantly and positively predicting virtual sharing. Moreover, virtual sharing was found to have a significant positive effect on digital well-being and partially mediated the relationship between cyber-ostracism and digital well-being. The findings suggest that students facing online exclusion may increase their virtual engagement as a compensatory measure, which can mitigate some of the negative impacts on their digital well-being. The study emphasizes the significance of addressing cyber-ostracism in higher education and developing interventions that promote resilience, foster meaningful online engagement, and enhance students' digital well-being.

Keywords: Cyber-ostracism, digital well-being, virtual sharing, university students, mediation analysis.

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Introduction

The prevalence of digital tools in human life has significantly increased in recent years, with individuals integrating various digital applications into their daily routines. In the digital age, nearly every aspect of human life, including communication, education, and social interaction, has shifted increasingly into digital environments (Arslankara et al., 2022). This shift is particularly evident among young learners, such as university students, who frequently use digital tools and applications for academic and personal purposes. Excessive use of digital tools can lead to mental health issues like anxiety and depression (Augner et al., 2023; Nan et al., 2024), physical problems like obesity, sleep disorders, and eye strain (Kahal, Al Darra, & Torbey, 2025; Zhong et al., 2025), lower academic performance and attention (Dontre, 2021; Glass & Kang, 2019), and weakened real-life social connections, increasing feelings of loneliness and isolation (Bonsaksen et al., 2023; Hall & Liu, 2022; OECD, 2024). To minimize the harmful effects of excessive digital tool use, digital well-being has become a crucial aspect of individuals' lives, referring to the state of a person's physical, mental, and social health in relation to their use of digital technologies (Cecchinato et al., 2019). Although it was a relatively new concept, it was rooted back to the argument of "the impact of digital technologies on what it means to live a life that is good for a human being in an information society" (Luciano Floridi, 2015). The term gained significant traction from both academic and public spheres after Google introduced digital well-being tools as a part of the Android operating system in 2018 (Al-Mansoori, Al-Thani, & Ali, 2023).

Previous studies have emphasized the need to balance the benefits of digital connectivity with the potential risks associated with overuse or misuse of digital technologies (Burr & Floridi, 2020; OECD, 2024; Valkenburg, Meier, & Beyens, 2022; Vanden Abeele & Nguyen, 2022). In an information society, digital well-being emphasizes creating a healthy balance where technology enhances human flourishing rather than diminishing it (Burr, Taddeo, & Floridi, 2020). With technology's pervasiveness, digital well-being is essential for mitigating risks such as technology addiction and mental health challenges, promoting a balanced interaction with digital environments (Calvo & Peters, 2014). It encompasses the idea of technology promoting positive personal growth and healthy usage patterns (Al-Mansoori et al., 2023). Digital well-being involves the mindful use of technology, promoting its integration into daily life in ways that enhance overall life satisfaction, emotional health, and personal growth, while minimizing adverse outcomes such as overconsumption and loneliness (OECD, 2024).

Digital technologies are extensively used by university students for academic, social, and professional purposes (Pinto & Leite, 2020). While online platforms and digital technologies offer opportunities for connection and self-expression, some individuals may encounter cyber-ostracism in such environments, a form of virtual social exclusion where individuals feel ignored or excluded (Williams, 2009). Some examples of cyber-ostracism behavior were blocking or unfollowing individuals from social media, ignoring the messages and sharing of individuals by disliking and not commenting, and being left out of shared content or events, such as not tagging on social media (Aizenkot, 2020; Büttner & Rudert, 2022; Hatun & Demirci, 2022; Wolf et al., 2015). As a result of the experience of being ignored or excluded online, cyber-ostracism has adverse effects on university students. It increases anxiety and depression (Ding et al., 2025; Shi et al., 2025) while reducing self-esteem and sense of belonging (Oktar et al., 2021; Riva, Wirth, & Williams, 2011; Williams, Cheung, & Choi, 2000). It also diminishes emotional stability, making students more vulnerable to negative emotions and mediating the relationship with psychological adjustment difficulties (Pamuk & Cırcır, 2023; Wang et al., 2022). Besides, it negatively affects learners' performance and motivation (Erdemli & Kurum, 2021; Galbava, Machackova, & Dedkova, 2021). Recent work shows that students who feel ignored online display lower emotional/cognitive engagement, which then translates into poorer grades (Wang et al., 2024), greater intentions to abandon instructional platforms that support their coursework (Sarfraz et al., 2023), reduced day-to-day learning engagement (Xiao & Li, 2025), and a higher likelihood of dropout when feelings of social disconnection persist (Urke, Larsen, & Kristensen, 2023). Meta-analytic and systematic reviews echo these patterns, linking exclusionary peer climates to disengagement, underachievement, and early school leaving (Di Lisio et al., 2025; Dias et al., 2024). Complementary studies show that low peer acceptance predicts diminished classroom engagement (Archambault et al., 2024) and that ostracised students are more prone to social withdrawal, which further compromises learning opportunities (Lei et al., 2024).

Cyber-ostracism has a significant impact on the well-being of university students. Experimental studies have shown that cyber-ostracism can result in negative emotional and behavioral consequences (Galbava et al., 2021). It can trigger negative emotions, such as anger, which may lead students to reduce their use of social networking sites, thereby further impacting their digital and social well-being (Sarfraz et al., 2023). Psychological needs mediate the adverse effects of cyber-ostracism on well-being. When these needs are not met due to exclusion, students are more likely to experience adverse outcomes, such as aggression or withdrawal (Lutz, 2023; Xing & Kuo, 2024), which can negatively impact their well-being. The research indicated that the negative impact of cyber-ostracism on well-being was mediated by specific predictors, such as the frequency of internet usage (López-Ráez, Falla, & Romera, 2025). Due to the adverse effects of cyber-ostracism, students need to cope with it to save their mental health and digital well-being. The behavioral responses of students could potentially mitigate the adverse impact of cyber-ostracism on their well-being. One coping mechanism is virtual sharing, defined as the act of disclosing personal thoughts, feelings, or experiences in online environments (Korkmaz, Usta, & Kurt, 2014). Research on online social support highlights the potential of virtual sharing. A systematic review has indicated that media, including online platforms, are multifunctional tools for coping with social exclusion, enabling both behavioral and cognitive approaches, such as seeking support or expressing feelings (Lutz, Schneider, & Reich, 2023). Besides, research has shown that using the internet more frequently as a coping strategy leads students to make more virtual sharing behaviors (López-Ráez et al., 2025). According to López-Ráez et al. (2025), as students feel more cyber-ostracized, they use the internet more, and this can lead to heightened sharing behaviors as they attempt to alleviate their feelings of loneliness and anxiety. The study of Lutz (2023) found similar results that students increased engagement with online messaging platforms as a coping mechanism in response to cyber-ostracism. Cyber-ostracism also feeds into various digital addictions — including smartphone, social-media, Internet, and gaming addiction— which further drain engagement and achievement (e.g., Coşkun et al., 2024; Poon, 2018; Taş, 2018; Yue et al., 2022).

On online platforms, students share more openly, as they feel less inhibited by the fear of judgment or further exclusion due to the anonymity and perceived safety of these platforms (Wesselmann & Williams, 2011). Virtual sharing can serve as a coping mechanism for students experiencing social exclusion, potentially mitigating the adverse effects of cyber-ostracism by fostering a sense of connection and validation (López-Ráez et al., 2025; Lutz, 2023). For instance, students who feel ostracized online may engage in increased virtual sharing to regain social inclusion or affirm their identity, which could, in turn, enhance their digital well-being. However, the extent to which virtual sharing mediates the relationship between cyber-ostracism and digital well-being has not been thoroughly investigated, particularly among university students navigating complex digital social landscapes.

The Present Study

Among university students, who often actively use digital platforms, the effect of cyber-ostracism on digital well-being is notably significant. Digital exclusion can cause loneliness, lower self-esteem, and mental health issues, all of which hinder a good life in today's information society (Floridi, 2014). Still, the mechanisms behind this relationship, especially the role of psychological mediators, are not well understood. Existing studies have confirmed a direct negative link between cyber-ostracism and digital well-being (Galbava et al., 2021; Sarfraz et al., 2023). However, few have examined how behavioral responses, such as virtual sharing, might influence this link. Frameworks like the Need-Threat Model (Williams, 2009) propose that ostracism endangers core human needs such as belonging and self-esteem, leading to behaviors like increased self-disclosure to regain social bonds. This suggests that virtual sharing could potentially serve as a mediator, converting the negative impacts of cyber-ostracism into positive effects on digital well-being.

The link between cyber-ostracism and the digital well-being of university students has been extensively studied. However, there is still limited knowledge about other psychological factors involved, especially the mediating role of virtual sharing. This research aims to examine virtual sharing as a mediator between cyber-ostracism and digital well-being, helping us better understand the psychological processes connecting these concepts. A theoretical model diagram is provided (see Fig. 1). Our objective is to address these knowledge gaps by exploring the relationship between cyber-ostracism, virtual

sharing, and digital well-being among university students, specifically focusing on the following research questions.

- Does cyber-ostracism affect digital well-being?
- Does cyber-ostracism affect virtual sharing behavior?
- Does virtual sharing affect digital well-being?
- Does virtual sharing mediate the relationship between cyber-ostracism and digital well-being?

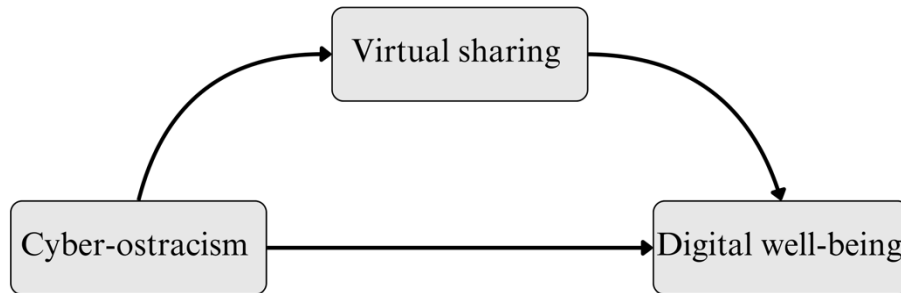


Figure 1. Hypothesized model.

By testing a mediation model, we aim to clarify both the direct and indirect pathways through which cyber-ostracism affects digital well-being, with virtual sharing serving as a potential compensatory factor. These findings are expected to enhance our understanding of the psychological processes underlying digital interactions and inform interventions designed to promote healthier online environments for university students.

Theoretical Framework

The present study employs a three-layer theoretical framework that parsimoniously explains why cyber-ostracism undermines students' digital well-being and how virtual sharing can transform that threat into a restorative experience.

First, Williams's Temporal Need-Threat Model (TNTM) posits that every act of ostracism—online or offline—triggers an immediate, reflexive depletion of belonging, self-esteem, control, and meaningful existence needs (Williams, 2009; Williams & Nida, 2011). Laboratory replications that withhold seemingly trivial cues, such as “likes” in social media feeds, confirm that these four needs plunge within seconds of cyber-exclusion, reproducing the classic TNTM response in purely digital environments (Weidman et al., 2012).

Second, Self-Determination Theory (SDT) explains what happens after the immediate loss or frustration of basic psychological needs that occurs the moment a person realizes they are being ignored or excluded online. SDT argues that people are motivated to restore the basic needs of relatedness, autonomy, and competence whenever they are thwarted. Supporting this view, a large-scale study with university students found that frustration of these three needs fully accounted for the link between cyber-ostracism and later maladjustment, including heightened negative mood and aggression (Xing & Kuo, 2024). In essence, SDT clarifies why ostracised students are driven to seek out behaviours—such as virtual sharing—that can quickly compensate for their unmet psychological needs.

Third, the social-compensation perspective and its Internet-Enhanced Self-Disclosure (IESD) extension specify which behaviour is most likely to be chosen. Both frameworks argue that individuals who feel deprived of offline affirmation tend to gravitate toward richer online self-disclosure, as affirmative feedback can quickly replenish threatened needs (Desjarlais, 2022; Luo & Hancock, 2020). Empirical evidence from a quasi-experimental work supports this claim, showing that posting personal updates on social platforms causally boosts positive affect, social connectedness, and even sleep quality after exclusion events (Chen, 2017). Conversely, Compensatory Internet-Use Theory (CIUT) warns that the same motive can spiral into problematic usage when self-regulatory resources are low, a trajectory

documented in longitudinal research linking stress-related need frustration to escalating smartphone and general Internet dependence (Rosič et al., 2022; Towner et al., 2022).

Finally, students' digital well-being is conceptualised through the Digital Flourishing Model, which captures positive online functioning in terms of connectedness, authentic self-expression, self-control, purposeful engagement, and perceived safety (Janicke-Bowles et al., 2023). Validation studies of the Digital Flourishing Scale demonstrate that supportive self-disclosure predicts sustained gains across these facets, whereas unsupportive feedback predicts stagnation or decline (Janicke-Bowles, 2024; Rosič et al., 2022).

Taken together, the reviewed theories suggest a three-step process. First, when students are ignored or excluded online, they experience an immediate decline in their core psychological needs, including a sense of belonging and self-esteem. Second, this frustration of needs leads them to take actions that might quickly satisfy these needs, especially by sharing personal thoughts, photos, or feelings in digital spaces where supportive reactions are readily available. Third, if that sharing receives positive feedback (likes, comments, encouraging replies), the students' needs are restored, and their sense of connection, purpose, and control online—what we call digital flourishing—improves. In other words, virtual sharing serves as the psychological bridge that can turn the pain of cyber-ostracism into a boost in digital well-being for university students.

Method

Participants

The study sample consisted of 285 senior university students, with 66.3% identifying as female and 33.7% identifying as male. Most participants were aged between 21 and 23 years, making up 75.4% of the sample. The largest age group was 23-year-olds at 42.1%, followed by 22-year-olds at 24.6%. Students aged 26 and above accounted for less than 5%.

Participants were recruited from 20 academic departments, primarily in Gastronomy and Culinary Arts (10.9%), Mathematics (10.9%), Coaching Education (10.2%), Painting (9.5%), Emergency Aid, Disaster Management, and Recreation (8.8%), and Sports Management (7.7%). Other notable fields included Art History, Landscape Architecture, Footwear Design and Production, as well as various programs within the Faculty of Fine Arts, focusing on arts, applied sciences, and sports-related disciplines.

Measures

Cyber ostracism: The Cyberostracism Scale, developed by Hatun and Demirci (2022), was utilized to assess participants' perceptions of virtual social exclusion. The scale comprises 14 items distributed across three subscales: Cyber Ignored (6 items), Cyber Direct Excluded (4 items), and Cyber Indirect Excluded (4 items). Responses are recorded on a 5-point Likert-type scale (1 = never to 5 = always), with higher aggregate scores indicating greater experiences of cyberostracism. In the original validation study, construct validity was established through a factor analysis, which confirmed a three-factor structure accounting for 58.8% of the total variance and demonstrated acceptable model fit, $\chi^2/df = 2.86$, $CFI = .94$, $TLI = .92$, $SRMR = .052$, and $RMSEA = .067$. The internal consistency reported in the validation study was satisfactory, with a Cronbach's alpha of 0.84 for the overall scale and subscale coefficients of 0.81 for Cyber Ignored, 0.76 for Cyber Direct Excluded, and 0.70 for Cyber Indirect Excluded. For the present study, the overall scale demonstrated excellent reliability ($\alpha = 0.92$).

Digital well-being: The Digital Well-Being Scale, developed by Arslankara et al. (2022), was used to measure participants' subjective well-being in a social context. The scale consists of 12 items divided equally among three subscales: Digital Satisfaction, Safe and Responsible Behavior, and Digital Wellness. Participants respond using a 5-point Likert-type scale ranging from 1 ("does not reflect at all") to 5 ("fully reflects"), with higher total scores indicating greater levels of digital well-being. In the original validation study, construct validity was established through a factor analysis, which confirmed a three-factor structure accounting for 49.36% of the total variance and yielded acceptable model fit, $\chi^2/df = 2.86$, $CFI = .94$, $TLI = .92$, $SRMR = .052$, and $RMSEA = .067$. Reliability in the original study was also satisfactory, with a Cronbach's alpha of 0.79 for the overall scale and subscale coefficients of

0.81 (Digital Satisfaction), 0.73 (Safe and Responsible Behavior), and 0.66 (Digital Wellness). For the present study, the overall scale demonstrated good reliability with a Cronbach's alpha of 0.84.

Virtual sharing: The Virtual Environment Loneliness Scale, developed by Korkmaz et al. (2014), was employed to assess students' feelings of loneliness in virtual environments. The scale comprises 20 items distributed across three subscales: Virtual Socialization (8 items), Virtual Sharing (7 items), and Virtual Loneliness (5 items). Items are rated on a 5-point Likert-type scale (1 = never to 5 = always). In the original validation study, construct validity was established through factor analysis, which confirmed a three-factor structure accounting for 48.49% of the total variance and yielded an acceptable model fit, with $\chi^2/df = 438.82$, $CFI = .96$, $AGFI = .90$, $SRMR = .011$, and $RMSEA = .097$. The internal consistency coefficients for the subscales ranged from 0.70 to 0.85, while the overall scale demonstrated a Cronbach's alpha of 0.87. For the present study, the Virtual Sharing subscale was used. In the original research, this subscale accounted for 12.95% of the total variance and had a reported reliability of $\alpha = .84$. In our sample, this subscale demonstrated excellent internal consistency ($\alpha = 0.90$).

Statistical analyses

All statistical analyses in this study were conducted using IBM SPSS Statistics version 26.0. After entering the data, initial screening was performed to check for missing values, univariate outliers, and distributional assumptions. The dataset was complete and showed no univariate anomalies. Normality was assessed by calculating the skewness and kurtosis values for each primary variable. As shown in Table 1, all indicators fell within the acceptable range of ± 1.5 , suggesting the distributions were approximately normal (Tabachnick & Fidell, 2013). To evaluate the potential influence of common method variance (CMV) from self-report measures, Harman's single-factor test was conducted using exploratory factor analysis. Descriptive statistics summarized participants' demographic information, while Pearson correlations examined relationships among key variables. Hypotheses regarding the mediating effect of virtual sharing on the relationship between cyber-ostracism and digital well-being were tested using Hayes's (2013) PROCESS macro for SPSS (Model 4). Mediation analyses included 5,000 bootstrap resamples, with indirect effects deemed significant when their 95% confidence intervals did not contain zero (Hayes, 2013).

Findings

The findings section unfolds in three key stages. First, a common-method bias check was conducted to evaluate whether measurement-related variance artificially inflated inter-variable associations. Second, descriptive statistics and bivariate correlations characterized the sample, mapping preliminary relationships among the study variables. Third, a mediation analysis was conducted to decompose the total effect of cyber-ostracism on digital well-being into two distinct pathways: the direct effect—the portion of the relationship independent of virtual sharing—and the indirect effect, representing the influence transmitted via virtual sharing. This analytic approach follows conventional mediation frameworks where the total effect equals the direct effect plus the indirect effect.

Harman's single-factor test

Harman's single-factor test was conducted to evaluate common method bias. All measurement items related to the key variables in the mediation model underwent an exploratory factor analysis. By employing principal axis factoring without rotation, the one-factor model accounted for 25.68% of the variance, below the recommended 40% threshold (Podsakoff et al., 2003). As a result, the analysis showed no significant evidence of common method bias in this study.

Descriptive data and Correlational analyses

Table 1 presents the results of the Pearson correlation analysis among the study variables. As shown in the table, cyber-ostracism was significantly and negatively correlated with digital well-being ($r = -0.177$, $p < 0.01$) and significantly and positively correlated with virtual sharing ($r = 0.357$, $p < 0.01$) among university students. Digital well-being was significantly and positively correlated with virtual sharing ($r = 0.121$, $p < 0.01$). Regarding demographic variables, while gender showed a significant positive correlation with cyber-ostracism and virtual sharing, age exhibited a significant negative correlation with virtual sharing.

Table 1.
Relationships among the study variables

Variable	Mean	SD	Skewness	Kurtosis	1	2	3	4	5
1. Gender	1.34	0.47	-	-	-				
2. Age	23.31	2.53	-	-	.019	-			
3. Digital well-being	3.67	.065	-0.5	-0.01	.035	-.081	-		
4. Cyber-ostracism	1.77	0.71	1.25	1.29	.217**	-.051	-.177**	-	
5. Virtual sharing	2.33	1.01	0.45	-0.79	.212**	-.144*	.121*	.357**	-

* $p < .05$, ** $p < .01$ (two-tailed).

Consistent with theoretical expectations, cyber-ostracism was negatively related to digital well-being. Although the effect size is small according to Cohen's (1988) standards, its direction supports need-threat theory: students who feel more frequently ignored or excluded online report relatively lower levels of satisfaction, safety, and purpose in their digital lives. Conversely, cyber-ostracism had a moderate positive correlation with virtual sharing, indicating that exclusionary experiences motivate students to share more and engage actively in online spaces—an adaptive coping mechanism suggested by social-compensation models. Lastly, virtual sharing was slightly associated with higher digital well-being, suggesting that self-disclosure and interaction can partly mitigate the negative impacts of online exclusion by promoting a sense of connection and agency.

Overall, these bivariate findings support the study's conceptual model: cyber-ostracism appears to weaken digital well-being, but at the same time, it encourages compensatory virtual engagement that can partly mitigate its harmful effects. This pattern provides an evidence-based rationale for proceeding with the mediation analysis, which directly assesses the intermediary role of virtual sharing in the relationship between cyber-ostracism and digital well-being.

Mediation analysis

Mediation analysis was conducted to test the validity of a mediating relationship between cyber-ostracism and digital well-being through virtual sharing. As shown in Table 2, cyber-ostracism significantly predicted virtual sharing (Path a), and virtual sharing significantly predicted digital well-being (Path b). Furthermore, cyber-ostracism retained a significant adverse direct effect on digital well-being even after accounting for the mediator (Path c'), indicating a partial mediation model.

Table 2.

Results of the mediating effect of virtual sharing on the relationship between cyber-ostracism and digital well-being.

Outcome & Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Mediator: Virtual Sharing					
Cyber-ostracism → Virtual Sharing (a)	0.507	0.079	6.425	< .001	[0.352, 0.663]
<i>Model R</i> ² = .13, <i>F</i> (1, 280) = 41.28, <i>p</i> < .001					
Outcome: Digital Well-being					
Virtual Sharing → Digital Well-Being (b)	0.135	0.039	3.439	.001	[0.058, 0.213]
Cyber-ostracism → Digital Well-Being (c')	-0.230	0.056	-4.106	< .001	[-0.340, -0.120]
<i>Model R</i> ² = .07, <i>F</i> (2, 279) = 10.66, <i>p</i> < .001					
Summary of Effects					
Total effect (c)	-0.161	0.053	-3.025	.003	[-0.266, -0.056]
Direct effect (c')	-0.230	0.056	-4.106	< .001	[-0.340, -0.120]
Indirect effect (a × b)	0.069	0.024	-	-	[0.026, 0.121]

Note. *N* = 282. *b* = unstandardized regression coefficient; *SE* = standard error; CI = confidence interval. The indirect effect was tested using 5,000 bootstrap samples, and its significance is indicated by the 95% CI not containing zero.

The total effect of cyber-ostracism on digital well-being was negative and significant. There was convincing evidence that the indirect effect of cyber-ostracism on digital well-being, mediated by virtual

sharing, was statistically significant, as the 95% bias-corrected bootstrap confidence interval did not include zero ($CI = [0.026, 0.121]$). This suggests that cyber-ostracism undermines digital well-being not only directly but also indirectly by reducing engagement in virtual sharing. Compared to the total effect ($c = -0.161, p = 0.003$), the indirect pathway ($a \times b = 0.069$) accounted for a meaningful portion of the effect, supporting the theoretical importance of virtual sharing in understanding how cyber-ostracism impacts digital well-being. Figure 2 illustrates the conceptual model, which shows the mediating role of virtual sharing in the relationship between cyber-ostracism and digital well-being.

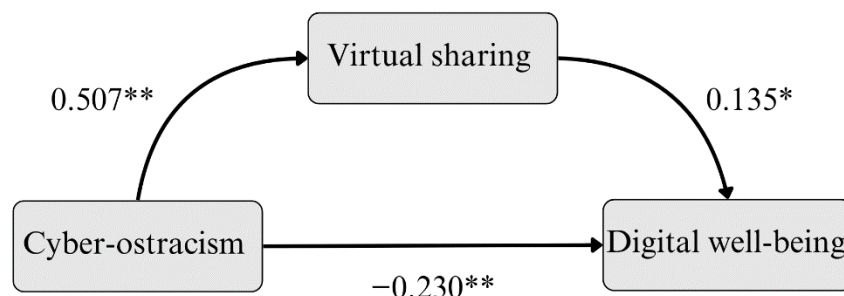


Figure 2. Hypothesized model, $*p < 0.05$; $**p < 0.001$.

Discussion, Conclusion, and Suggestions

This study examined a simple mediation model to understand how cyber-ostracism affects digital well-being through virtual sharing. Results showed that cyber-ostracism has a significant negative impact on digital well-being, highlighting its harmful psychological effects. At the same time, cyber-ostracism positively influences virtual sharing, indicating that people who feel neglected online tend to share more content to seek social connection. Virtual sharing, in turn, positively predicts digital well-being, suggesting that engaging in online sharing can partly counteract the adverse effects of ostracism. Mediation analysis revealed that virtual sharing partially mediates the relationship between cyber-ostracism and digital well-being, reducing—though not eliminating—the negative impact. Overall, these findings support the notion that promoting constructive sharing practices in online communities can help mitigate psychological harm caused by cyber-ostracism and enhance users' digital well-being.

The current findings generally support and expand previous research on the relationship between cyber-ostracism and digital well-being. In line with a large body of research, experiencing cyber-ostracism was linked to a significant decline in students' digital well-being (Li et al., 2022). Social ostracism is known to threaten essential human needs, including a sense of belonging, self-esteem, a sense of purpose, and control, which can lead to emotional distress and reduced well-being (Chen et al., 2025; Schneider et al., 2017). For example, Schneider et al. (2017) found that being ignored on social media immediately caused a drop in users' self-esteem, sense of belonging, and mood. These results support this study's conclusion that cyber-ostracism negatively affects well-being, as ostracized students probably experienced hurt feelings and threats to their needs that result in diminished digital well-being (Smith, Morgan, & Monks, 2017).

Notably, this study also found that cyber-ostracism had a significant positive influence on virtual sharing, meaning ostracized students tended to share more in virtual spaces. This result aligns with theories of compensatory behavior following exclusion. Williams and Nida's (2011) review of ostracism research suggests that, after the initial pain of exclusion, individuals often try to reconnect or restore their sense of belonging (Wesselmann, Ren, & Williams, 2015). In the context of social media, individuals who feel ostracized may increase their online posting and outreach as a prosocial coping strategy to regain social connection (Assylbekova, Saikhymuratova, Atmaca, Somzhurek, & Slambekova, 2024; Smith et al., 2017). Prior evidence supports this pattern. For example, Deters and Mehl (2013) observed that people instructed to post frequent Facebook status updates reported lower levels of loneliness, indicating that active online sharing can help satisfy belonging needs when offline support is lacking (Schneider et al., 2017). Similarly, previous studies have shown that online interactions can foster a sense of social connection among isolated individuals (Grieve et al., 2013; Marinucci et al., 2022). Therefore, this study's finding that ostracized students increased their virtual

sharing matches these previous findings. It seems they sought support and validation from the online community to make up for being ostracized. This outcome differs from some reports suggesting that ostracism can lead to withdrawal or aggression, especially when re-inclusion appears hopeless (e.g., chronic ostracism leading to antisocial responses) (Riva et al., 2017; Williams & Nida, 2022). However, in this student sample, the desire to connect seems to have overshadowed feelings of resignation or hostility, leading to more sharing rather than disengagement. This positive coping behavior supports Lutz and Schneider's (2021) idea that any feedback is better than none, and even negative responses ("dislikes") on social media are less threatening than being completely ignored. In other words, individuals who experience ostracism may opt to initiate interaction—however minor or even negative—through posting and sharing, rather than accepting social invisibility. The current findings align with this notion, indicating that ostracized students actively pursued engagement by participating in virtual sharing.

The positive connection between virtual sharing and digital well-being observed in this study supports prior research on the benefits of engaging in active online social activities. Studies have repeatedly shown that active social media use—such as posting content, commenting, and sharing with others—tends to boost users' perceived social support and connectedness, which in turn improves well-being (Lu & Hampton, 2017; Yue et al., 2024). Yue et al. (2024) found that active social media engagement was associated with higher perceived network responsiveness and social support, resulting in lower loneliness and greater life satisfaction. In this study, students who shared more virtually reported higher digital well-being, aligning with the idea that online interactions can enrich social resources and positive emotions. This finding complements earlier research indicating that sharing experiences or expressing oneself online can reduce loneliness and lift mood by satisfying the need for social connection (Schneider et al., 2017). Therefore, the results agree with previous evidence that virtual sharing benefits well-being, likely by improving the quality of social interactions and perceived support in the digital space.

The findings of this study strongly support Williams's (2009) temporal need-threat model of ostracism, a key theory in social psychology. The model suggests that social exclusion is inherently painful because it threatens essential human needs: the need to belong, self-esteem, control over one's environment, and a sense of meaningfulness (Williams, 2009). The pain caused by ostracism is not just figurative; neuroimaging research has shown that social exclusion activates the same brain area—the dorsal anterior cingulate cortex—that processes physical pain (Eisenberger, Lieberman, & Williams, 2003). This immediate and automatic pain response serves as an evolutionarily advantageous alarm system, warning social species of a serious threat to survival (MacDonald & Leary, 2005; Riva et al., 2012). The strength of this threat is so powerful that it can even be observed in minimal and artificial online situations, such as being excluded by strangers in a computerized ball-tossing game called Cyberball (Williamson, Bernhard, & Chamberlin, 2000). The current study's results demonstrate that these effects are equally strong in the real-world digital environments that university students encounter. Being ignored or excluded online is consistently linked to adverse psychological outcomes, including increased social anxiety (Azoulay & Gilboa-Schechtman, 2024; Heeren, Peschard, & Philippot, 2012), mood decline, and reduced self-esteem (Galbava et al., 2021).

Crucially, virtual sharing did not fully counteract the harm of ostracism but only partially mediated its effect on well-being. The partial mediation indicates that while increased sharing helped, it could not eliminate the distress caused by being ostracized. Statistically, cyber-ostracism still had a direct negative impact on digital well-being, independent of the sharing pathway. Psychologically, this suggests that some aspects of exclusion (e.g., emotional pain or loss of trust) might not be easily healed by personal efforts to reach out. Virtual sharing may have provided social support and improved well-being to some extent (hence the significant mediation), but it likely did not address all aspects of the hurt. This nuanced finding aligns with broader social support theory, which states that support (online or offline) can buffer but not always completely undo the effects of stress or trauma. It also aligns with research showing that the effects of ostracism can linger—even when people try different coping strategies, some individuals may still experience hurt or lowered self-worth (Schneider et al., 2017; Wesselmann et al., 2015). Therefore, while participants' sharing behavior in this study was helpful, it was not a cure-all. The remaining direct effect could reflect the deep-rooted impacts of exclusion (e.g., ongoing rumination or

mistrust) that require more than peer interaction to address. In summary, the observed mediation pattern highlights the importance of multifaceted coping: engaging with others online helped students recover somewhat; however, the lasting impact of ostracism may require additional approaches (e.g., time, self-reflection, or professional support) to restore their well-being fully.

In conclusion, these findings affirm that *no [wo]man is an island*—even in digital contexts (Donne, 1975). Being ostracized online presents real risks to young people’s mental health, but promoting positive online engagement and building supportive digital communities can help reverse some of the damage. The complex relationships between ostracism, virtual sharing, and digital well-being observed here provide a detailed understanding of social media psychology, reminding researchers and practitioners that the way students connect online can have either a harmful or beneficial impact on them. Future research should continue to explore these dynamics—for example, investigating whether certain types of sharing (such as emotional self-disclosure versus informational posting) are more effective in restoring well-being, or how individual traits (such as introversion or resilience) influence these effects. These insights will further enhance theories of digital social behavior and inform interventions aimed at creating healthier online environments. By applying these findings to theory, counseling, and platform design, we can better support students in thriving both online and offline.

Despite its contributions, this study has several limitations. The most significant limitation is the study’s cross-sectional design. By collecting data at a single point in time, it is impossible to establish causality definitively. The mediation model tested here assumes a causal chain in which cyber-ostracism precedes an increase in virtual sharing, which in turn leads to a change in digital well-being. While this sequence is theoretically plausible, alternative causal arrangements cannot be ruled out. A longitudinal design is necessary to empirically test this assumed temporal order and provide more substantial evidence for the proposed mediating relationship. Second, the study’s reliance on self-report measures for all variables introduces the potential for several biases, including social desirability bias, inaccuracies in memory, and subjective interpretation of scale items. Although Harman’s single-factor test suggested that common method bias was not a significant threat to the validity of the findings, the inclusion of objective behavioral data would provide a more robust test of the hypotheses. For example, future research could supplement self-report surveys with analyses of actual social media activity to measure virtual sharing more directly. Third, the study’s findings are based on a sample of university students from a specific, undisclosed context. While this demographic is highly relevant to the study of digital behaviors, it also represents a narrow age range and life stage. University students are typically more digitally savvy and may have different social motivations and coping resources compared to other populations, such as younger adolescents, who may be more vulnerable to the effects of online exclusion, or working adults. Consequently, the findings may not be generalizable to other demographic groups.

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Ethics statement: In this study, we declare that we have complied with the rules stated in the “Higher Education Institutions Scientific Research and Publication Ethics Directive” and that we do not take any actions based on the “Actions Against Scientific Research and Publication Ethics”. At the same time, we declare that there is no conflict of interest between the authors, as all authors contributed to the study, and that all responsibility for any ethical violations rests with the authors of this article.

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