Journal of Psychology in Africa, 2025
Vol. 35, No. 1, 61–67, http://doi.org/10.32604/jpa.2025.066008

Hidden sufferings under entertainment: Gamebullying victimization and depression among Chinese multiplayer-online-battle-arena (MOBA) gamers

Zizhong Zhang[1,2] and Chen Luo[3,4,*]

[1]*College of Media and International Culture, Zhejiang University, Hangzhou, 310058, China*
[2]*School of Journalism and Communication, Tsinghua University, Beijing, 100084, China*
[3]*School of Journalism and Communication, Wuhan University, Wuhan, 430072, China*
[4]*Research Center for Intercultural Communication, Wuhan University, Wuhan, 430072, China*

**Correspondence: Chen Luo,* chenluo@whu.edu.cn
Received: 08 April 2024; Accepted: 25 March 2025; Published: 30 April 2025

Abstract: Online gaming has become a daily norm, leading to unique forms of game-bullying distinct from traditional cyberbullying due to its immersive nature and ranking systems. This study examined how game-bullying victimization (GBV) affects depression via self-esteem, moderated by resilience and the state of flow, among 359 Chinese MOBA (Multiplayer-online-battle-arena) gamers (30.7% female, mean age = 23.8 years, SD = 4.57 years). The analysis revealed a direct link between GBV and depression. Self-esteem mediates this relationship, with higher GBV associated with lower self-esteem and subsequently greater depression. Resilience moderates both direct and indirect effects, mitigating GBV's impact on self-esteem and depression in those with higher resilience. However, the state of flow did not moderate the mediation process. These results underscore that game-bullying affects more than just gaming addicts, highlighting the crucial roles of self-esteem and resilience. The findings suggest expanding the SOR model to account for personality traits susceptible to GBV, an emerging psychological harm.

Keywords: game-bullying victimization; depression; self-esteem; resilience; video game

Introduction

Online gaming has become an integral part of many people's daily lives in this digital age, but unfortunately, it is accompanied by game-bullying. Game-bullying is when an individual or group engaged in aggressive behavior in a game that harms other players (Zhang, 2021). This is a form of cyberbullying that involves verbal and social harassment directed at the player or their avatars, and it remains underexplored. One of the most popular online games is the Multiplayer Online Battle Arena (MOBA) game, which refers to a real-time strategy game in which two teams, usually composed of five players each, face off, with every player controlling an individual character (e.g., *League of Legends* developed by *Riot Games*). MOBA games incentivize recurring subjugation of adversaries, which can lead to game-bullying and other toxic gaming behaviors (de Mesquita Neto & Becker, 2018; Jiang & Zhang, 2022).

Victims of game-bullying often choose to stay quiet about their experiences due to the social stigma surrounding game addiction (Fu & Wu, 2020). Besides, perpetrators of game-bullying may not realize the impact of their actions, especially within the competitive gaming environment, where game mechanics strongly encourage players to compete with each other (Olson et al., 2008). Given the fact that the hidden sufferings of game-bullying are not well-explored, the current study aims to investigate the relationship between game-bullying victimization and depression in the China context.

China boasts the largest number of gamers worldwide, especially adolescent gamers (Gilbert, 2022), making it an ideal location for conducting game studies. Additionally, as the most popular game genre in China, MOBA game maintains a market size of up to 7.5 billion dollars annually (Mob Institution, 2021). The MOBA game is also the most risky of game-bullying and other toxic behaviors (de Mesquita Neto & Becker, 2018).

Theoretical Foundations

The Stimulus-Organism-Response (S-O-R) model suggests that environmental stimuli (S) have the potential to activate individuals' emotional and cognitive processes (O), thereby leading to behavioral responses (R) (Donovan & Rossiter, 1982). Anchored by the S-O-R framework, the stimulus encompasses the game-bullying situation encountered by gamers (Jacoby, 2002), serving as an external cue that can evoke a range of internal reactions. For instance, Hew et al. (2023) pointed out that the real-time dynamics, social interplays, and competitive nature of MOBA games are the impetuses of cognitive shifts in players. Additionally, scholars also contended that the online gaming setting, rife with aggression and toxicity, is able to elicit affective responses in game-bullying victims (Zhang, 2021; Zhu et al., 2022). Therefore, GBV is postulated as the stimulus in our investigation.

Self-esteem as the mediator. The concept of self-esteem relates to how individuals perceive and evaluate themselves, reflecting their self-acceptance and self-respect (Rosenberg, 1965). Research indicates that individuals who are targets of bullying tend to have lower self-esteem in both offline (Choi & Park, 2018) and online (Chang et al., 2013) settings. This can be attributed to bullying's undermining effect on one's self-confidence (Kaplan & Güleç, 2021). Nevertheless, some scholars

contend that there may exist a reciprocal relationship between self-esteem and cyberbullying victimization; that is, being victimized online decreases self-esteem, while individuals with low self-esteem are more likely to be victimized (Patchin & Hinduja, 2010). Accordingly, self-esteem assumes the role of the mediating variable in the current study.

The connection between self-esteem and depression garners support in the gaming context (Ho & Gu, 2021; Pradhan et al., 2022). For example, problematic gaming behavior lowers players' self-esteem, which in turn weakens their ability to handle emotional disorders and triggers depression and loneliness (Schmit et al., 2011). Lee et al. (2021) found that VR (virtual reality) game players with low self-esteem were more likely to suffer from depression.

State of flow and resilience as moderators. Flow refers to the enjoyment of fully concentrating on a task without perceiving changes in the surroundings (e.g., forgetting time passing by due to playing games) (Csikszentmihalyi, 1997). Lin et al. (2020) contended that flow not only holds direct sway over user decisions but also wields indirect influence by tempering the impact of other internal perceptions on user reactions. Studies have extensively adopted flow to evaluate gaming experiences (Procci et al., 2012) and predict addictive symptoms (Chou & Ting, 2003).

Flow's salutary effect on self-esteem might be a countervailing force against GBV's deleterious effect on self-evaluation. Flow has also been found to be tightly associated with mental well-being (Asakawa, 2004), especially its ability to alleviate negative emotional states. For instance, practicing meditation while in a state of flow can help reduce feelings of depression and lower cortisol levels (Zou et al., 2018). In the context of entertainment, a study on slot games demonstrated that flow can alleviate depressive symptoms and provide an escape from negative emotions for players (Dixon et al., 2019). Hence, the state of flow may attenuate GBV's psychological harms (e.g., depression) and aid in recovering from adversities.

Resilience or an individual's ability to cope with stressful events (Connor & Davidson, 2003), has been frequently employed to explain the constructive and persistent consequences that ensue after adverse life events. Previous studies further disclose that resilience acts as a protective shield for individuals dealing with depression as it enhances adaptiveness and resolution in the face of difficulties (Edward, 2005; Maybery et al., 2005). Given its identification as a critical resource in managing victimization-related challenges and buffering the negative effects of stressors on mental health (Chadwick, 2014; Wachs et al., 2022), we postulate that resilience may also serve as a moderator between GBV and its psychological consequences (Navarro et al., 2018).

Goal of the study. This study examined how GBV contributes to depression through the mediation of self-esteem and how the proposed relationships are contingent upon different levels of resilience and state of flow. Based on the conceptual model (Figure 1), we hypothesized the following:

H1: Higher GBV is associated with higher risk for depression.

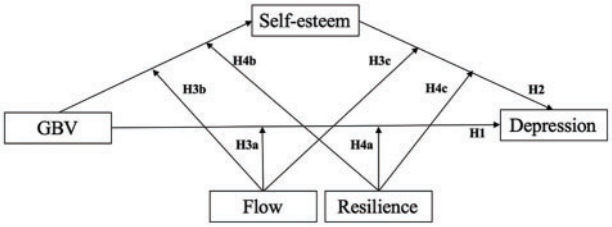

Figure 1. The conceptual model of this research

H2: GBV is indirectly associated with depression through the mediation of self-esteem.

H3: Flow moderate the direct and indirect effects (i.e., with self-esteem as a mediator) in the associations between GBV and depression for higher levels of depression.

H4: Resilience moderates the direct and indirect effect (i.e., with self-esteem as a mediator) associations between GBV and depression for higher depression.

Methods

Participants and setting. The respondents were 359 MOBA gamers, of these 30.7% self-identified as female players and 69.3% were male players. Respondents' age ranged from 17 to 42 (M = 23.8, SD = 4.57), and the majority of them (57.8%) held a bachelor's degree.

Measures

Game-bullying victimization. GBV was measured on a scale comprising nine items developed (Zhang, 2021) which previously validated among Chinese MOBA gamers. Items are on a five-point Likert scale (from "1 = Never" to "5 = Frequently"). The reliability of GBV scores was $\alpha = 0.92$ in the present study.

Self-esteem. Self-esteem was measured by a 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). The scale is on a five-point Likert Scale (from "1 = strongly disagree" to "5 = strongly agree"). The reliability of scores from the RSES was 0.81 in the present study.

Depression. Depression was measured on the 20-item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). Respondents are asked to indicate how frequently they experienced certain emotional states. In this study, the reliability of scores from the CES-D was 0.94.

State of Flow. Flow was assessed by the modified version of the nine-item Flow State Scale (FSS) developed by Jackson and Marsh (1996). This is on a five-point Likert scale (from "1 = strongly disagree" to "5 = strongly agree"). The reliability of FSS scores was $\alpha = 0.82$ in the present study.

Resilience. Resilience was assessed on the six-item Brief Resilience Scale (BRS) developed by Smith et al. (2008), Items are on a five-point Likert scale, (from "1 = strongly disagree" to "5 = strongly agree"). Scores from the BRS yielded an alpha of 0.81 in the present study.

Control variables. Following the previous studies (Ballard & Welch, 2017), gender and gamer ranking (1 lower to 8 higher) were incorporated as controls.

Procedure

The present study received ethical approval from the School of Journalism and Communication at Tsinghua University (*TSJC202401120006*). Participants were recruited via an Amazon Turk-like platform *TC Lab* (www.testcloudlab.com) in December 2023. Each participant who completes the survey will receive a reward of 2 RMB.

Analytical strategy

In the present study, PROCESS was employed to test the hypothesis. In contrast to alternative analytical approaches, PROCESS provides a more lucid and efficacious avenue for calculating both the indirect effect and the conditional indirect effect. It can be applied to single, multiple, or parallel mediating variables, moderating variables (including moderated mediation), and can report bootstrap confidence intervals and effect sizes of mediation effects, among other metrics (Hayes, 2017; Preacher et al., 2007). Consequently, it stands as one of the foremost tools extensively employed for mediation and moderation analyses.

Regarding H1 (Higher GBV is associated with higher risk for depression) and H2 (GBV is indirectly associated with depression through the mediation of self-esteem), Hayes' PROCESS Macro Model 4 (Hayes, 2017) was employed to test the two hypotheses. PROCESS Macro Model 76 (Hayes, 2017) was adopted to analyze whether flow (H3: Flow would moderate the direct and indirect (i.e., with self-esteem as a mediator) associations between GBV and depression) and resilience (H4: Resilience would moderate the direct and indirect (i.e., with self-esteem as a mediator) associations between GBV and depression.

Common method bias

Harman's one-way factor analysis and multicollinearity assessment (i.e., variance inflation factor (VIF); Kock, 2015) were used to examine the common method bias. The results revealed that nine factors (with eigenvalues > 1) emerged given the unrotated condition, explaining 65.65% of the total variance. The first common factor explained 29.55% of the variance, which was less than the 40% threshold (Podsakoff et al., 2003). Furthermore, all VIFs of variables assemble the total collinearity test that is lower than 3.3. Therefore, the common method bias was unlikely to threaten the robustness of our results.

Results

Descriptive statistics

Table 1 illustrated the mean, standard deviation and zero-order correlation among variables of interest. As shown in the table, the average score of each involved variable was in the middle level. GBV was significantly associated positively with depression, yet, negatively correlated with self-esteem as well as resilience.

Game-bullying associations with self esteem

Results based on 5000 bootstrapped samples (see Table 2) show that gamers who experienced an increasing level of GBV were more likely to report lower self-esteem ($\beta = -0.39$, $SE = 0.04$, $p < 0.001$) and higher depression ($\beta = 0.28$, $SE = 0.02$, $p < 0.001$), supporting H1. These findings confirm that GBV is positively associated with depression. Self-esteem, on the other hand, was negatively associated with depression ($\beta = -0.64$, $SE = 0.03$, $p < 0.001$). The 95% bias-corrected bootstrap confidence interval further confirmed a significant indirect effect of GBV on depression through self-esteem ($ab = 0.17$, $SE = 0.02$, 95% $CI = [0.13, 0.21]$), supporting H2. This indicates that GBV is indirectly associated with depression via the mediating role of self-esteem.

The results of simple slope tests (Figure 2a) disclosed that for MOBA gamers with low resilience (M − 1SD), GBV's impact on self-esteem ($\beta = -0.22$, $SE = 0.03$, $p < 0.001$) was more prominent than those with high resilience (M + 1SD) ($\beta = -0.11$, $SE = 0.03$, $p < 0.05$). These findings support H4b, which proposed that resilience would moderate the relationship between GBV and self-esteem. As shown in Figure 2b, an increasing GBV experience would widen the depression gap between the low-resilience and high-resilience groups. Gamers with higher resilience ($\beta = 0.13$, $SE = 0.03$, $p < 0.001$) were less likely to report depression than their counterparts ($\beta = 0.23$, $SE = 0.02$, $p < 0.001$) when facing GBV. This pattern supports H4a, which hypothesized that resilience buffers the impact of GBV on depression. The full model with path coefficients is illustrated in Figure 3.

Discussion

Navigating by the SOR model and taking 359 Chinese MOBA gamers as an example, the current study proposes a moderated mediation model to clarify the relationships among GBV, depression, self-esteem, resilience, and flow. Since considerable research has been focused on cyberbullying, our results enrich the current understanding regarding how game-bullying, as a specific type of cyberbullying but with unique characteristics, may affect gamers' mental well-being. The moderating role of resilience reveals a silver lining to mitigating the adverse outcomes of GBV. The results validate the role of self-esteem within the gaming environment and further uncover the importance of resilience in counteracting game-bullying's psychological injuries, revealing the potential of combining personal traits with the SOR model to better comprehend the game-bullying phenomenon. Moreover, the nonsignificant moderating effect of flow challenges the discourse that game addicts are more prone to be bullied. Some intriguing findings merit further discussion.

Similar to cyberbullying victimization (Chen et al., 2017; Kwan et al., 2020), GBV is a stressor that activates negative emotions. Due to the technological affordances of digital games (e.g., the sense of immersion, anonymity, randomness, and interactivity), game-bullying, as a prevalent and repetitive toxic activity, could drive victims to lose control over gaming experiences and exert detrimental side effects. With the increasingly close integration between gaming and everyday life, GBV has become a pervasive phenomenon that needs to be taken seriously, especially for adolescents whose mental health is still immature.

Second, self-esteem was a mediator between GBV and depression among MOBA, contributing to a higher level of. The finding is consistent with prior cyberbullying studies (Ho & Gu, 2021; Patchin & Hinduja, 2010; Pradhan et al., 2022). Specifically, low self-esteem could be

Table 1. Descriptive statistics and correlation matrix among variables

	M	*SD*	(1)	(2)	(3)	(4)	(5)	(6)
(1) GBV	3.19	1.07	—					
(2) Self-esteem	3.40	0.74	−0.37**	—				
(3) Depression	2.27	0.73	0.51**	−0.75**	—			
(4) Flow	3.08	0.60	0.23	−0.30**	0.04	—		
(5) Resilience	3.24	0.71	−0.31**	0.70**	−0.61**	0.22**	—	
(6) Gender	0.69	0.46	0.21**	0.01	0.02	0.16**	0.03	—
(7) Game rank	5.74	1.87	−0.06	−0.06	−0.06	0.03	0.00	0.22**

Note. Abbreviations: *M*, mean; *SD*, standard deviation; GBV, game-bullying victimization; $^{**}p < 0.01$.

Table 2. Results of the moderated mediation effect analysis

Outcome variable	Predictors	*β*	*t*	95% LLCI	95% ULCI
Self-esteem	Constant	0.14	1.54	−0.04	0.31
	GBV	−0.17***	−5.70	−0.23	−0.11
	Flow	0.28***	5.95	0.19	0.38
	GBV × Flow	−0.05	−1.02	−0.14	0.04
	Resilience	0.62***	14.77	0.54	0.70
	GBV × Resilience	0.07*	1.97	0.00	0.14
	Gender	−0.02	−1.58	−0.05	0.01
	Game ranking	0.02	0.36	−0.10	0.14
Depression	Constant	2.25***	28.66	2.10	2.41
	GBV	0.17***	6.38	0.12	0.23
	Self esteem	−0.57***	−12.25	−0.67	−0.48
	Flow	0.13**	2.87	0.04	0.22
	GBV × Flow	−0.05	−1.21	−0.14	0.03
	Self-esteem × Flow	−0.06	−0.97	−0.17	0.06
	Resilience	−0.18***	−3.68	−0.28	−0.08
	GBV × Resilience	−0.07*	−2.14	−0.14	−0.01
	Self-esteem × Resilience	0.02	0.51	−0.06	0.11
	Gender	0.01	0.81	−0.01	0.04
	Game ranking	−0.07	−1.40	−0.18	0.03

Note. Abbreviations: LLCI, lower level of confidence interval; ULCI, upper level of confidence interval; GBV, game-bullying victimization. $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

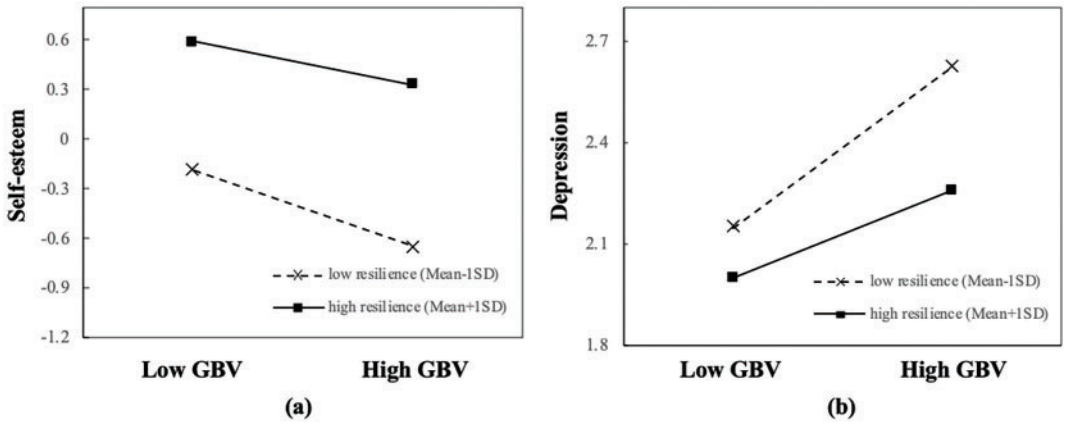

Figure 2. The moderating effects of resilience in the relationships between GBV and (a) self-esteem and (b) depression

triggered by undesirable events (e.g., repetitive game-bullying) and serves as a critical predictor of depression. Players may feel helpless and give up their dominance in the game world to the bullies if they are being bullied. As a result, victims may lose confidence in their abilities and develop self-depreciation and depressive emotions.

Third, resilience moderated the relationship between GBV and depression, as well as GBV and

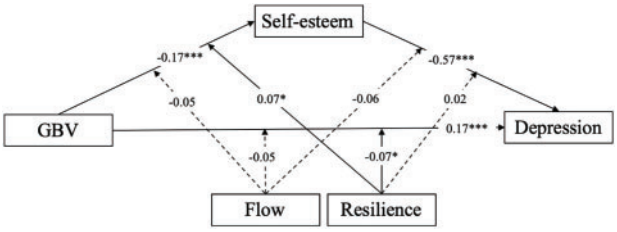

Figure 3. The SOR model with path coefficients
Note. *$p < 0.05$; ***$p < 0.001$.

self-esteem, relationship to be weaker among gamers with higher resilience. Our research extends previous efforts on resilience in offline bullying and cyberbullying by examining its buffering role in the context of game-bullying. Waugh et al. (2011) contended that resilient people have higher emotional flexibility, enabling them to handle changeable environments and mental problems easier (Hinduja & Patchin, 2017).

Fourth, contrary to our expectations, flow did not moderate the proposed mediation process. That is, the indirect effect of GBV on depression via self-esteem remained consistent regardless of a gamer's level of immersion or engagement in the game. This finding suggests that game-bullying exerts psychological harm irrespective of whether the player is deeply immersed ("in flow") or casually engaged. One possible explanation is that the social and interpersonal dimensions of GBV operate independently of gameplay intensity. Game-bullying often occurs through communication channels (e.g., chat, voice, emotes), where the personal nature of verbal abuse or exclusion can be internalized by players regardless of how involved they are in the game itself. This challenges the common assumption that only highly invested or addicted gamers are affected by online harassment. Instead, our results indicate that the psychological impact of GBV can be widespread, cutting across levels of immersion, and potentially affecting casual players just as much as devoted ones.

Limitation, conclusion and future directions

Besides the findings, our study should be interpreted with some caution. First, the cross-sectional design fails to reveal the causalities behind all the constructs. A longitudinal design or field experiment would facilitate identifying the underlying directionalities. Second, we only recruited MOBA gamers in this study. However, due to the richness of game genres, gamers from diverse game types should be incorporated in the future. Third, regarding the measurement of certain variables, they were all self-report and susceptible to social desirability. In summary, game-bullying is associated with depressive symptoms among those with low self-esteem. Resilience assuage adverse GBV adverse effects. The results also hold implications for intervention efforts, such as intentionally strengthening gamers' resilience by offering more readily available online social support (e.g., using AI assistants to provide timely psychological counseling for victims, Milosevic et al., 2023) would be a promising strategy to diminish game-bullying's insidious ramifications. For game developers, designing systems that enable timely identifying and reporting of game-bullying (e.g., the function of muting offensive speech with one click) should be highly valued to regulate toxic gaming behaviors and provide a shield for potential victims.

Acknowledgement: Not applicable.

Funding Statement: This research received no external funding.

Author Contributions: Zizhong Zhang: Conceptualization, Methodology, Funding acquisition, Supervision, Writing—original draft, Writing—review & editing. Chen Luo: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing—original draft, Writing—review & editing. All authors reviewed the results and approved the final version of the manuscript.

Availability of Data and Materials: Data will be provided on request.

Ethics Approval: The present study received ethical approval from the School of Journalism and Communication at Tsinghua University (*TSJC202401120006*).

Conflicts of Interest: The authors declare no conflicts of interest to report regarding the present study.

Supplementary Materials: The supplementary material is available online at https://www.techscience.com/doi/10.32604/jpa.2025.066008/s1.

References

Asakawa, K. (2004). Flow experience and autotelic personality in Japanese college students: How do they experience challenges in daily life? *Journal of Happiness Studies*, *5*(2), 123–154. https://doi.org/10.1023/B:JOHS.0000035915.97836.89

Ballard, M. E., & Welch, K. M. (2017). Virtual warfare: Cyberbullying and cyber-victimization in MMOG play. *Games and Culture*, *12*(5), 466–491. https://doi.org/10.1177/1555412015592473

Chadwick, S. (2014). *Impacts of cyberbullying, building social and emotional resilience in schools*. Ryde, Australia: Springer Science & Business Media.

Chang, F.-C., Lee, C.-M., Chiu, C.-H., Hsi, W.-Y., Huang, T.-F., et al. (2013). Relationships among cyberbullying, school bullying, and mental health in Taiwanese adolescents. *Journal of School Health*, *83*(6), 454–462. https://doi.org/10.1111/josh.12050

Chen, L., Ho, S. S., & Lwin, M. O. (2017). A meta-analysis of factors predicting cyberbullying perpetration and victimization: From the social cognitive and media effects approach. *New Media & Society*, *19*(8), 1194–1213. https://doi.org/10.1177/1461444816634037

Choi, B., & Park, S. (2018). Who becomes a bullying perpetrator after the experience of bullying victimization? The moderating role of self-esteem. *Journal of Youth and Adolescence*, *47*(11), 2414–2423. https://doi.org/10.1007/s10964-018-0913-7

Chou, T.-J., & Ting, C.-C. (2003). The role of flow experience in cyber-game addiction. *CyberPsychology & Behavior*, *6*(6), 663–675. https://doi.org/10.1089/109493103322725469

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale

(CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/(ISSN)1520-6394

Csikszentmihalyi, M. (1997). *Creativity: flow and the psychology of discovery and invention*. New York, NY, USA: HarperCollins Publishers.

de Mesquita Neto, J. A., & Becker, K. (2018). Relating conversational topics and toxic behavior effects in a MOBA game. *Entertainment Computing*, *26*(3), 10–29. https://doi.org/10.1016/j.entcom.2017.12.004

Dixon, M. J., Gutierrez, J., Stange, M., Larche, C. J., Graydon, C., et al. (2019). Mindfulness problems and depression symptoms in everyday life predict dark flow during slots play: Implications for gambling as a form of escape. *Psychology of Addictive Behaviors*, *33*(1), 81–90. https://doi.org/10.1037/adb0000435

Donovan, R., & Rossiter, J. (1982). Store atmosphere: An environmental psychology approach. *Journal of Retailing*, *58*(1), 34–57.

Edward, K. (2005). Resilience: A protector from depression. *Journal of the American Psychiatric Nurses Association*, *11*(4), 241–243. https://doi.org/10.1177/1078390305281177

Fu, S., & Wu, J. (2020). Nearly half of Taiwanese teenagers have been involved in cyberbullying, survey shows. *Xinhua Net*. Retrieved from: http://www.xinhuanet.com/2020-10/22/c_1126645186.htm

Gilbert, N. (2022). Number of gamers worldwide 2022/2023: Demographics, statistics, and predictions. *FinancesOnline*. Retrieved from: https://financesonline.com/number-of-gamers-worldwide/

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis, second edition: a regression-based approach*. New York, NY, USA: Guilford Publications.

Hew, J.-J., Lee, V.-H., T'ng, S.-T., Tan, G. W.-H., Ooi, K.-B., et al. (2023). Are online mobile gamers really happy? On the suppressor role of online game addiction. *Information Systems Frontiers*. https://doi.org/10.1007/s10796-023-10377-7

Hinduja, S., & Patchin, J. W. (2017). Cultivating youth resilience to prevent bullying and cyberbullying victimization. *Child Abuse & Neglect*, *73*(9), 51–62. https://doi.org/10.1016/j.chiabu.2017.09.010

Ho, T. T. Q., & Gu, C. (2021). Cyberbullying victimization and depression: Self-esteem as a mediator and approach coping strategies as moderators. *Journal of American College Health*, *71*(1), 94–101. https://doi.org/10.1080/07448481.2021.1877718

Jackson, S. A., & Marsh, H. W. (1996). Development and validation of a scale to measure optimal experience: The flow state scale. *Journal of Sport and Exercise Psychology*, *18*(1), 17–35. https://doi.org/10.1123/jsep.18.1.17

Jacoby, J. (2002). Stimulus-organism-response reconsidered: An evolutionary step in modeling (Consumer) behavior. *Journal of Consumer Psychology*, *12*(1), 51–57. https://doi.org/10.1207/S15327663JCP1201_05

Jiang, Q., & Zhang, Z. (2022). Hidden and pervasive: Exploring the mechanism of gamebullying. *China Youth Study*, *7*, 72–80. https://doi.org/10.19633/j.cnki.11-2579/d.2022.0095

Kaplan, Y., & Güleç, S. (2021). Examination of the correlation between 8th grade students' cyber bully/victim behaviors and their self-confidence values. *Open Journal For Educational Research*, *5*(2), 353–364. https://doi.org/10.32591/coas.ojer.0502.16353g

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of E-Collaboration*, *11*(4), 1–10. https://doi.org/10.4018/IJeC

Kwan, I., Dickson, K., Richardson, M., MacDowall, W., Burchett, H., et al. (2020). Cyberbullying and children and young people's mental health: A systematic map of systematic reviews. *Cyberpsychology, Behavior, and Social Networking*, *23*(2), 72–82. https://doi.org/10.1089/cyber.2019.0370

Lee, H.-W., Kim, S., & Uhm, J.-P. (2021). Social virtual reality (VR) involvement affects depression when social connectedness and self-esteem are low: A moderated mediation on well-being. *Frontiers in Psychology*, *12*, 753019. https://doi.org/10.3389/fpsyg.2021.753019

Lin, J., Lin, S., Turel, O., & Xu, F. (2020). The buffering effect of flow experience on the relationship between overload and social media users' discontinuance intentions. *Telematics and Informatics*, *49*(2), 101374. https://doi.org/10.1016/j.tele.2020.101374

Maybery, D., Ling, L., Szakacs, E., & Reupert, A. (2005). Children of a parent with a mental illness: Perspectives on need. *Australian E-Journal For the Advancement of Mental Health*, *4*(2), 78–88. https://doi.org/10.5172/jamh.4.2.78

Milosevic, T., Verma, K., Carter, M., Vigil, S., Laffan, D., et al. (2023). Effectiveness of artificial intelligence-based cyberbullying interventions from youth perspective. *Social Media + Society*, *9*(1), 20563051221147325. https://doi.org/10.1177/20563051221147325

Mob Institution (2021). *2021 Report on China's Mobile Game Industry*. Mob Institution. Retrieved from: http://pg.jrj.com.cn/acc/Res/CN_RES/INDUS/2021/3/20/2dc9eff0-2e63-4c30-99a5-68b6f86bae0c.pdf

Navarro, R., Yubero, S., & Larrañaga, E. (2018). Cyberbullying victimization and fatalism in adolescence: Resilience as a moderator. *Children and Youth Services Review*, *84*(1), 215–221. https://doi.org/10.1016/j.childyouth.2017.12.011

Olson, C. K., Kutner, L. A., & Warner, D. E. (2008). The role of violent video game content in adolescent development: Boys' perspectives. *Journal of Adolescent Research*, *23*(1), 55–75. https://doi.org/10.1177/0743558407310713

Patchin, J. W., & Hinduja, S. (2010). Cyberbullying and self-esteem. *Journal of School Health*, *80*(12), 614–621. https://doi.org/10.1111/j.1746-1561.2010.00548.x

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Pradhan, S., Agrawal, S., & Srivastava, A. (2022). Cyberbullying and depression: An empirical study of Indian executives. *Vision (OnlineFirst)*, 09722629221074752. https://doi.org/10.1177/09722629221074752

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, *42*(1), 185–227. https://doi.org/10.1080/00273170701341316

Procci, K., Singer, A. R., Levy, K. R., & Bowers, C. (2012). Measuring the flow experience of gamers: An evaluation of the DFS-2. *Computers in Human Behavior*, *28*(6), 2306–2312. https://doi.org/10.1016/j.chb.2012.06.039

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Rosenberg, M. (1965). Rosenberg self-esteem scale. *Journal of Religion and Health*, *59*(1), 381–398.

Schmit, S., Chauchard, E., Chabrol, H., & Sejourne, N. (2011). Evaluation of the characteristics of addiction to online video games among adolescents and young adults. *L'Encephale*, *37*(3), 217–223. https://doi.org/10.1016/j.encep.2010.06.006

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., et al. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, *15*(3), 194–200. https://doi.org/10.1080/10705500802222972

Wachs, S., Gámez-Guadix, M., & Wright, M. F. (2022). Online hate speech victimization and depressive symptoms among adolescents: The protective role of resilience. *Cyberpsychology, Behavior, and Social Networking*, *25*(7), 416–423. https://doi.org/10.1089/cyber.2022.0009

Waugh, C. E., Thompson, R. J., & Gotlib, I. H. (2011). Flexible emotional responsiveness in trait resilience. *Emotion*, *11*(5), 1059–1067. https://doi.org/10.1037/a0021786

Zhang, Z. (2021). Concept, dimensions and scale development of gamebullying. *Chinese Journal of Journalism & Communication*, *43*(10), 69–97. https://doi.org/10.13495/j.cnki.cjjc.2021.10.004

Zhu, Z., Zhang, R., & Qin, Y. (2022). Toxicity and prosocial behaviors in massively multiplayer online games: The role of mutual dependence, power, and passion. *Journal of Computer-Mediated Communication*, *27*(6), zmac017. https://doi.org/10.1093/jcmc/zmac017

Zou, L., Yeung, A., Li, C., Wei, G.-X., Chen, K. W., et al. (2018). Effects of meditative movements on major depressive disorder: A systematic review and meta-analysis of randomized controlled trials. *Journal of Clinical Medicine*, *7*(8), 195. https://doi.org/10.3390/jcm7080195