

**Effect of Tilt Awareness Intervention on the Level of Tilting Among  
College Online Mobile Gamers**

A Research Paper

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## ABSTRACT

Online mobile gaming has been very popular recently, either for fun or competitive reasons. However, for some players, they may feel frustrated and angry and it is termed as 'tilt' particularly used in competitive settings. Tilting can lead to decreased enjoyment of games, increased stress, and cognitive dysregulation which poses a risk to a player's mental and emotional well-being when left unchecked. The study aims to identify the participants' level of tilting before and after playing an online mobile game called Mobile Legends: Bang Bang (MLBB) with the help of a psychoeducational intervention.

This study used a true experimental research design to measure the significant effect of Tilt Awareness Intervention, in the levels of tilt among online mobile gamers. A total of sixty (60) Bachelor of Science in Psychology students participated in this study through a simple random sampling. The study utilized the pretest-posttest design in measuring the participant's levels of tilt using the instrument adopted in the research of Morales et al. (2024) the Level of Anger Scale (LAS). For the level of tilting in the pretest when grouped according to the control group ( $M=2.46$ ,  $SD=.737$ ) and experimental group ( $M=2.26$ ,  $SD=.709$ ), both results show low level of tilting. For the level of tilting in posttest when grouped according to the control group with no intervention ( $M=2.34$ ,  $SD = 0.763$ ), and the experimental group with intervention ( $M=2.19$ ,  $SD = 0.673$ ), both results show a low level of tilting. For the respondent's level of tilting between the pretest and posttest of the control group ( $t = .863$ ,  $p = .395$ ,  $d = .16$ ), and the experimental group ( $t = .609$ ,  $p = .550$ ,  $d = .11$ ), the analyses the analysis revealed a non-significant difference for both groups. The results revealed that the Tilt Awareness Intervention did not have a significant effect on the participants' level of tilting which may imply that it needs improvement.

## References

- Akbaş, E., & Yiğitoğlu, G. T. (2022). The effect of solution-focused approach on anger management and violent behavior in adolescents: A randomized controlled trial. *Archives of psychiatric nursing*, 41, 166–174.  
<https://doi.org/10.1016/j.apnu.2022.07.029>
- Alami., A., Shahghasemi.,Z., Gochan., A., Baratpour., F. (2015) Student's Aggression and Its Relevance to Personal, Family, and Social Factors 10.5812/ircmj.20017F
- Anjanappa, S., Govindan, R., Munivenkatappa, M., & Bhaskarapillai, B. (2023). Effectiveness of anger management program on anger level, problem solving skills, communication skills, and adjustment among school-going adolescents. *Journal of education and health promotion*, 12, 90. [https://doi.org/10.4103/jehp.jehp\\_1216\\_22](https://doi.org/10.4103/jehp.jehp_1216_22)
- Badatala, A., Leddo, J., Islam, A., & Surapaneni, P. (2017). The effects of playing cooperative and competitive video games on teamwork and team performance. *ResearchGate*.[https://www.researchgate.net/publication/311792939\\_The\\_effects\\_of\\_playing\\_cooperative\\_and\\_competitive\\_video\\_games\\_on\\_teamwork\\_and\\_team\\_performance](https://www.researchgate.net/publication/311792939_The_effects_of_playing_cooperative_and_competitive_video_games_on_teamwork_and_team_performance)
- Balita, C. (2024). Mobile gaming apps with the most downloads Philippines 2023. Statista. <https://www.statista.com/statistics/1391126/philippines-most-downloaded-mobile-gaming->

apps/#:~:text=According%20to%20AppMagic%2C%20Mobile%20Legends,downloaded%20about%2010%20million%20times.

Balita, C. (2023, November 15). Revenue of the mobile games industry in the Philippines 2017-2027. <https://www.statista.com/forecasts/1257063/revenue-mobile-games-segment-philippines#statisticContainer>

Barik, R., & Das, S. (2023). Emotional regulation among psychology and non-psychology grstudying college students. *International Journal of Indian Psychology*, 11(3), 2114–2121. <https://doi.org/10.25215/1103.197>

Barrault, S., Browne, M. W., Moreau, D., & Palomäki, J. (2014) Losing control: Examining the effectsof negative emotions on decision-making. *Journal of Applied Psychology*

Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, 7(1), 1–15. [https://doi.org/10.1207/s15327965pli0701\\_1](https://doi.org/10.1207/s15327965pli0701_1)

Billieux, J., Deleuze, J., Griffiths, M. D., & Kuss, D. (2015). Internet gaming addiction: the case of massively multiplayer online Role-Playing games. *ResearchGate*. [https://www.researchgate.net/publication/271510904\\_Internet\\_Gaming\\_Addiction\\_The\\_Case\\_of\\_Massively\\_Multiplayer\\_Online\\_Role-Playing\\_Games](https://www.researchgate.net/publication/271510904_Internet_Gaming_Addiction_The_Case_of_Massively_Multiplayer_Online_Role-Playing_Games)

Braeden. (2022). *How to stop tilting while gaming (or use it to win)*. EAthlete Labs. <https://eathletelabs.com/stop-tilting/>

- Brown, A., & Adams, R. (2017). Aggression styles and mobile gaming behavior among college students. *Journal of Gaming Studies*, 14(2), 125-143.
- Brown, A., Davis, C. (2018). Effects of strategy-based mobile games on cognitive abilities among students: A meta-analysis. *Journal of Educational Technology*, 25(3), 289-305.
- Brown, S., (2018). Emotional well being and its relation to health 1608–1609. doi: 10.1136/bmj.317.7173.1608
- Bushman, B. J., & Anderson, C. A. (2015). Comforting evidence for the need for a media violence intervention. *Current Directions in Psychological Science*, 24(5), 270-275. <https://doi.org/10.1177/0963721415595553>
- Canarias, E. (2019). Effects of mobile gaming to the performance of the students in Palahanan National High School. *Ascendens Asia Journal of Multidisciplinary Research Abstracts*, 3(2). <https://ojs.aaresearchindex.com/index.php/AAJMRA/article/view/4508>
- Carter, M., Moore, K., Mavoa, J., Gaspard, L., & Horst, H. (2020). Children's perspectives and attitudes towards Fortnite 'addiction'. ResearchGate. [https://www.researchgate.net/publication/341907476\\_Children's\\_perspectives\\_and\\_attitudes\\_towards\\_Fortnite\\_'addiction'](https://www.researchgate.net/publication/341907476_Children's_perspectives_and_attitudes_towards_Fortnite_'addiction')
- Carver, C. S., & Scheier, M. F. (2016). Carver, C. S., & Scheier, M. F. (2016). *Control theory and the self-regulation of behavior*. In W. H. R. (Ed.), *The self-regulation of behavior* (pp. 1-18). Routledge.
- Chen, S. and Wilson, R. (2020). The impact of educational mobile games on learning

outcomes among students. *Computers & Education*, 156, 103949.

- Cho, Y., Newman, M., Pitt, C., Yip, J. C., & Lee, J. H. (2024). You Are Tilted!: Leveraging Tabletop Gaming to Manage Tilt and Strengthen Team Dynamics in Esports. *Proceedings of the ACM on Human-Computer Interaction*, 8(CHI PLAY), 1–29. <https://doi.org/10.1145/3677116>
- Ciesinski, N. K., Himelein-Wachowiak, M., Krick, L. C., Sorgi-Wilson, K. M., Cheung, J. C. Y., & McCloskey, M. S. (2023). A systematic review with meta-analysis of cognitive bias modification interventions for anger and aggression. *Behaviour research and therapy*, 167, 104344. <https://doi.org/10.1016/j.brat.2023.104344>
- Cox et al., (2020). Anger and depression in girls and boys: A study of gender differences. *Psychology of women quarterly*.  
[https://www.researchgate.net/publication/247643524\\_Anger\\_and\\_Depression\\_in\\_Girls\\_and\\_Boys\\_A\\_Study\\_of\\_Gender\\_Differences](https://www.researchgate.net/publication/247643524_Anger_and_Depression_in_Girls_and_Boys_A_Study_of_Gender_Differences)
- Cornillez, E. E., Delos Santos, J. R. N., & Carillo, V., Jr. Mobile Games and Academic Performance of University Students. *International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN, 2278-3075*.
- Cregan, S. C., Toth, A. J., and Campbell, M. J. (2024). Playing for keeps or just playing with emotion? Studying tilt and emotion regulation in video games. *Frontiers*. Volume 15. <https://doi.org/10.3389/fpsyg.2024.1385242>
- Diguiseppe, R., (2013) Anger Disorder Scale(ADS™) Anger Disorder Scale (ADS™)- The Cognitive Centre
- Dollard, J., Doob, L. W., Miller, N. E., Mowrer, O. H., & Sears, R. R. (1939). *Frustration*

*and aggression*. Yale University Press.

Duan, D., Zhang, X., , L., Zhou, Y., and Liu, C. (2014). The impact of violent media on aggression: the role of normative belief and empathy. *Psychol. Dev. Educ.* 30, 185–192.

Duncan, A. (2015). Understanding Tilt in Esports: A Study on Young League of Legends Players. ACM Digital Library.  
<https://dl.acm.org/doi/fullHtml/10.1145/3411764.3445143>

Effect. APA Dictionary of Psychology. (n.d.). Dictionary.apa.org.  
<https://dictionary.apa.org/effect>

Elsherbiny, M., and Al Maamari, H. R. (2021). Game-based learning through mobile phone apps: effectively enhancing learning for social work students. *Soc. Work Educ.* 40, 315–332. doi: 10.1080/02615479.2020.1737665

Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033–1036. <https://doi.org/10.1016/j.jesp.2011.03.027>

*Experimental design* APA Dictionary of Psychology. (n.d.). Dictionary.apa.org.  
<https://dictionary.apa.org/experimental-design>

*Experimental group* APA Dictionary of Psychology. (n.d.). Dictionary.apa.org.  
<https://dictionary.apa.org/experimental-group>

Experimental validation, anyone? (2023). *Nature Computational Science*, 3(5), 361.  
<https://doi.org/10.1038/s43588-023-00462-x>

Forgiveness, R. J. "Instrument D. Y. A. Y., Milwaukee .Theses, Y. E. S. U. of W., & Paper 264, D. (n.d.). *The Level Of Anger Scale (LAS)*.

Freeman, G. Z., & Wohn, D Y. (2019). Understanding eSports Team Formation and Coordination. ResearchGate.  
[https://www.researchgate.net/publication/320654041\\_Understanding\\_eSports\\_Team\\_Formation\\_and\\_Coordination](https://www.researchgate.net/publication/320654041_Understanding_eSports_Team_Formation_and_Coordination)

Gentile, D., Li, D., Khoo, A., Anderson, C. and Prot, S. Mediators and Moderators of Long-term Effects of Violent Video Games on Aggressive Behavior Practice, Thinking, and Action. (2014). ResearchGate.  
[https://www.researchgate.net/publication/261068087\\_Mediators\\_and\\_Moderators\\_of\\_Longterm\\_Effects\\_of\\_Violent\\_Video\\_Games\\_on\\_Aggressive\\_Behavior\\_Practice\\_Thinking\\_and\\_Action](https://www.researchgate.net/publication/261068087_Mediators_and_Moderators_of_Longterm_Effects_of_Violent_Video_Games_on_Aggressive_Behavior_Practice_Thinking_and_Action)

Gerson, S. A., & Woodward, A. L. (2014). The development of action perception and imitation. *Current Directions in Psychological Science*, 23(3), 175-179.  
<https://doi.org/10.1177/0963721414531596>.

Goldbeck, L., & Pew, A. (2018). *Violent video games and aggression*. National Center for Health Research. <https://www.center4research.org/violent-video-games-can-increase-aggression/>

Groot Kormelink, T., & Costera Meijer, I. (2019). A User Perspective on Time Spent: Temporal Experiences of Everyday News Use. *Journalism Studies*, 1–16.  
<https://doi.org/10.1080/1461670x.2019.1639538>

Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, 26(1), 1–26. <https://doi.org/10.1080/1047840X.2014.940781>

- Hamer, C. (2017). *Creating mobile games: Using Java ME platform to put the fun into your mobile device and cell phone*. Berkley, CA: Apress.
- Herrera, S. N., Sarac, C., Phili, A., Gorman, J., Martin, L., Lyallpuri, R., Dobbs, M. F., DeLuca, J. S., Mueser, K. T., Wyka, K. E., Yang, L. H., Landa, Y., and Corcoran, C. M. (2023). Psychoeducation for individuals at clinical high risk for psychosis: A scoping review. *Schizophrenia Research*, 252, 148-158.  
<https://doi.org/10.1016/j.schres.2023.01.008>.
- Huang, Y., & Chao, L. L. (2016). The role of imitation learning in the acquisition and retention of complex motor skills. *Journal of Cognitive Neuroscience*, 28(5)
- Hödl, T. (2023). Content Creators Between Platform Control and User Autonomy  
<https://link.springer.com/article/10.1007/s12599-023-00808-9>
- Hussain Z., Williams, G. A., and Griffiths, M. D. (2015). An exploratory study of the association between online gaming addiction and enjoyment motivations for playing massively multiplayer online role-playing games. *Comput. Human. Behav.* 50, 221-230. doi: 10.1016/j.chb.2015.03.075
- Ibañez, R., Velza, J. F. P., & Grabrito, R. C. (2023). Impact of Online Gaming on the Academic Performance of DEBESMSCAT-Cawayan Campus Students.  
ResearchGate. <https://doi.org/10.15294/sji.v10i4.45007>
- Internet World Stats (2024). Internet Growth Statistics.  
<https://www.internetworldstats.com/emarketing.htm>
- Intervention American Psychological Association. (2023). APA Dictionary of Psychology.  
Dictionary.apa.org. <https://dictionary.apa.org/intervention>

- Johnson, M., et al. (2016). Gender differences in aggression and mobile gaming among college students. *Cyberpsychology, Behavior, and Social Networking*, 19(8), 486-492.
- Johnson, R., and Lee, S. (2015). Anger levels in Various Online Gaming Environments: A Comparative Analysis. *International Journal of Cyberpsychology*, 7(2), 123-138
- Jones, C. M., Scholes, L., Johnson, D., Katsikitis, M., & Carras, M. C. (2016). Gaming well: Links between videogames and flourishing mental health. *Frontiers in Psychology*, 7. 260.
- Kahila, J., Piispa-Hakala, S., Kahila, S., Valtonen, T., Vartiainen, H., & Tedre, M. (2021). If the game does not work, it is lagging, or you die in game, you just get furious – children's experiences on gamer rage. In M. Bujic, J. Koivisto, & J. Hamari (Eds.), *Proc. 5th int. gamifin conf. 2021, CEUR-WS* (pp. 21–29). <http://ceur-ws.org/Vol-2883/paper3.pdf>.
- Kaye, L, Kowert R., & Quinn, S. (2017). The role of social identity and online social capital on psychosocial outcomes in MMO players. ResearchGate. [https://www.researchgate.net/publication/316276036\\_The\\_role\\_of\\_social\\_identity\\_and\\_online\\_social\\_capital\\_on\\_psychosocial\\_outcomes\\_in\\_MMO\\_players](https://www.researchgate.net/publication/316276036_The_role_of_social_identity_and_online_social_capital_on_psychosocial_outcomes_in_MMO_players)
- Kim, Young Ji & Engel, David & Woolley, Anita & Lin, Jeffrey & McArthur, Naomi & Malone, Thomas. (2017). What Makes a Strong Team?: Using Collective Intelligence to Predict Team Performance in League of Legends. *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*. 2316-2329. 10.1145/2998181.2998185.
- Kim, M., & Lee, Y. (2021). Emotional awareness and tilting behavior among university

- esports players: A correlational study. *Journal of Gaming Studies*, 12(2), 45–59.
- Kivikangas, J. M., Korhonen, H., & Ravaja, N. (2014). Tilt-induced autonomic and emotional changes in gamers. *Cyberpsychology, Behavior, and Social Networking*, 17(7), 462-469.
- Kjaervik, S. & Bushman, B. (2024). A meta-analytic review of anger management activities that increase or decrease arousal: What fuels or douses rage?. *Clinical Psychology Review*. 109. 102414. 10.1016/j.cpr.2024.102414.
- Klimmt, C., Roth, C., Vermeulen, I. E., & Vorderer, P. (2018). Social and affective consequences of video game rage. *Media Psychology*, 21(2), 244-268.
- Knezovic, A. (2024, April 4). *What Is Mobile Gaming? Everything You Need to Know*. Udonis. <https://medium.com/udonis/what-is-mobile-gaming-everything-you-need-to-know-55c26e845090>
- Kou, Yubo & Li, Yao & Gui, Xinning & Suzuki-Gill, Eli. (2018). Playing with Streakiness in Online Games: How Players Perceive and React to Winning and Losing Streaks in League of Legends. 10.1145/3173574.3174152.
- Kurt, G., Atay, D., and Öztürk, H. (2022). Student engagement in K12 online education during the pandemic: the case of Turkey. *J. Res. Technol. Educ.* 54(sup1), S31–S47. doi: 10.1080/15391523.2021.1920518
- Latham, G. P., & Pinder, C. C. (2016). Work motivation theory and research at the dawn of the twenty-first century. *Annual Review of Organizational Psychology and Organizational Behavior*, 3, 1-36. <https://doi.org/10.1146/annurev-orgpsych-041015-062352>

- Laricchia, F. (2023). Forecast number of mobile devices worldwide from 2020 to 2025 (in billions)\*. Statista.<https://www.statista.com/statistics/245501/multiple-mobile-device-ownership-worldwide/>
- Lee, S. J., Yee, N., & Bailenson, J. N. (2015). The traits of virtual behaviour: Gender differences in online gaming. *Journal of Research in Personality*, 54, 96-103
- Lee, J. (2020). The effects of online game addiction on reduced academic achievement motivation among Chinese college students: the mediating role of learning engagement  
<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2023.1185353/full>
- Li, F., Zhang., D., Wu., S., Zhou., R., Dong., C., Zhang., J. (2023) Positive effects of online games on the growth of college students: A qualitative study from China  
10.3389/fpsyg.2023.1008211
- Li, S., Wu, Z., Zhang, Y., Xu, M., Wang, X. and Ma, X. (2023). Internet gaming disorder and aggression: A meta-analysis of teenagers and young adults. *Frontiers in Public Health*. Vol. 11. <https://doi.org/10.3389/fpubh.2023.1111889>
- Li, Y., Xu, Z., Hao, Y., Xiao, P., Liu, J. (2022). Psychosocial Impacts of Mobile Game On K12 Students and Trend Exploration for Future Educational Mobile Games  
10.3389/feduc.2022.843090
- Liu, J., Zubieta, J.-K., & Heitzeg, M. (2015). Sex differences in anterior cingulate cortex activation during impulse inhibition and behavioral correlates. *Psychiatry Research: Neuroimaging*, 201(1), 54–62. <https://doi.org/10.1016/j.pscychresns.2011.05.008>

Lozano, J. H., Gordillo, F., & Pérez, M. A. (2014). Impulsivity, intelligence, and academic performance: Testing the interaction hypothesis. *Personality and Individual Differences*, 61–62, 63–68. <https://doi.org/10.1016/j.paid.2014.01.013>

Mahood, C., Fang, X., & Lacy, M. (2020). Mindfulness, toxicity, and regulation in online gaming: The impact of cognitive strategies on player behavior. *Cyberpsychology, Behavior, and Social Networking*, 23(7), 492–498. <https://doi.org/10.1089/cyber.2019.0651>

Mäyrä, F. and Alha, K. (2020). "Mobile Gaming".

[https://homepages.tuni.fi/frans.mayra/Mayra-Alha\\_Mobile-Gaming.pdf](https://homepages.tuni.fi/frans.mayra/Mayra-Alha_Mobile-Gaming.pdf)

Montana Youth Soccer. (2023). Esports and its positive aspects. Benefits of Esports | Montana ([montanayouthsoccer.com](http://montanayouthsoccer.com))

Morales, J.C., A., Bensurto, C.Y.M. A., Cayubin, J.J. L., Gilbuena, M.J., I., Ogdang, F.F. L., Dacles, P.J. L. (2024). Tilt Phenomenon: Level of Tilting and Level of Impulsive Behavior of Online Mobile Gamers in a Private Higher Education Institution. An Unpublished Thesis for Bachelor of Science in Psychology, College of Arts and Sciences, Central Philippine University

Moroni, A., (2022). 7 Reasons Why Students Play Smartphone Games Hardcore Droid.

Available at: <https://www.hardcoredroid.com/7-reasons-why-students-play-smartphone-games/>

Ni, X et al., (2022) A subjective-objective integrated multi-objective decision-making method for reservoir operation featuring trade-offs among non-inferior solutions themselves <https://doi.org/10.1016/j.jhydrol.2022.128430>.

- Nickerson, C. (2023). Frustration-Aggression Hypothesis. Simply Psychology.  
<https://www.simplypsychology.org/frustration-aggression-hypothesis.html>
- Nuyens, F., Deleuze, J., Maurage, P., Griffiths, M. D., Kuss, D. J., & Billieux, J. (2016). Impulsivity in Multiplayer Online Battle Arena Gamers: Preliminary results on Experimental and Self-Report measures. *Journal of Behavioral Addictions*, 5(2), 351–356. <https://doi.org/10.1556/2006.5.2016.028>
- Panova, T., & Carbonell, X. (2018). Is smartphone addiction really an addiction? *Journal of Behavioral Addictions*, 7(2), 252–259. <https://doi.org/10.1556/2006.7.2018.49>
- Parsons, S., Karakosta, E., Boniface, M., & Crowle, S. (2019). Prosocial games for inclusion: Interaction patterns and game outcomes for elementary-aged children. *ScienceDirect*.  
<https://www.sciencedirect.com/science/article/abs/pii/S2212868918300308>
- Perlas, H. N., & Ea, H. C. (2023). THE LIVED EXPERIENCES OF THE MOBILE GAMERS. Zenodo (CERN European Organization for Nuclear Research). [Htt](https://zenodo.org/record/7000000)
- Phiri, L. S., Li, W., Cheung A. T., & Patrick G.M.C. Phiri. (2023). Effectiveness of psychoeducation interventions in reducing negative psychological outcomes and improving coping skills in caregivers of children with cancer: A systematic review and meta-analysis. *Psycho-Oncology*, 32(10), 1514–1527.  
<https://doi.org/10.1002/pon.6208>
- Posttest APA Dictionary of Psychology. (2018.). <https://dictionary.apa.org/posttest>

- Power, T. J., Dombrowski, S. C., Watkins, M. W., Mautone, J. A., Eagle, J. W., & McGill, T. J. (2009). School-based assessment and intervention for attention and disruptive behavior disorders: A summary of contemporary research. *Journal of Psychoeducational Assessment*, 27(4), 370–385.
- Pretest APA Dictionary of Psychology. (2018). <https://dictionary.apa.org/pretest>  
[ps://doi.org/10.5281/zenodo.7924195](https://doi.org/10.5281/zenodo.7924195)
- Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology*, 106(3), 441-457. doi:10.1037/a0035321
- Ramirez, F., (2022) Professional Esports Players: Motivation and Physical Activity Levels 10.3390/ijerph19042256.
- Raybould, J. N., Larkin, M., & Tunney, R. J. (2022). Impulsivity may be a risk factor in the transition from recreational to problem gaming. *Computers in Human Behavior Reports*, 7(100230), 100230. <https://doi.org/10.1016/j.chbr.2022.100230>
- Reinecke, L., & Trepte, S. (2014). The effects of video game tilt on aggression, verbal aggression, and physical aggression. *Computers in Human Behavior*, 33, 118- 125.
- Ricou, M., Marina, S., Vieira, P.M. et al. Psychological intervention at a primary health care center: predictors of success. *BMC Fam Pract* 20, 116 (2019).  
<https://doi.org/10.1186/s12875-019-1005-9>
- Schneider, L.A., King, D.L. & Delfabbro, P.H. (2018). Maladaptive Coping Styles in Adolescents with Internet Gaming Disorder Symptoms. *Int J Ment Health Addiction*

16, 905–916. <https://doi.org/10.1007/s11469-017-9756-9>

Seo, Y. & J, S. (2016). Beyond solitary play in computer games: The social practices of eSports. ResearchGate.  
[https://www.researchgate.net/publication/265216615\\_Beyond\\_solitary\\_play\\_in\\_computer\\_games\\_The\\_social\\_practices\\_of\\_eSports](https://www.researchgate.net/publication/265216615_Beyond_solitary_play_in_computer_games_The_social_practices_of_eSports)

Shao., R., Wang.m Y., (2019). The Relation of Violent Video Games to Adolescent Aggression: An Examination of Moderated Mediation Effect.

Silva, Mirna & Silva, Victor & Chaimowicz, Luiz. (2017). Dynamic Difficulty Adjustment on MOBA Games. Entertainment Computing. 18. 10.1016/j.entcom.2016.10.002

Simply Psychology. (2023, July 31). What is Simple random sampling?  
<https://www.simplypsychology.org/simple-random-sampling.html>

Smith, J., & Johnson, L. (2018). Aggression and engagement in mobile games among students. *Journal of Applied Psychology*, 23(4), 567-582 Smith, K., et al. (2020).

Smith, J., & Walden, L. (2020). Parental influence on children's emotion regulation. ,61(4), 423-436.

Smith, S., & Ferguson, C. J. (2018). Sex differences in video game tilt. *Computers in Human Behavior*, 89, 169-174.

TIME | meaning in the Cambridge English Dictionary. (2019). Cambridge.org.  
<https://dictionary.cambridge.org/dictionary/english/time>

Stanford, M. S., Mathias, C. W., Dougherty, D. M., Lake, S. L., Anderson, N. E., &

- Patton, J. R. (2009). Fifty years of the Barratt Impulsiveness Scale: An update and review. *Personality and Individual Differences*, 47(5), 385–395.
- Stewart, M. E., Deary, I. J., & Ebmeier, K. P. (2014). Neuroticism as a predictor of mood change: The effects of tryptophan depletion. *The British Journal of Psychiatry: The Journal of Mental Science*, 181(3), 242–247. <https://doi.org/10.1192/bjp.181.3.242>
- Streefkerk, R. (2019). Qualitative vs. Quantitative Research | Differences, Examples & Methods.
- Scribbr. <https://www.scribbr.com/author/raimo/page/3/?fbclid=IwAR3mqSQR-PxuQkRCCy7cUfFFYZ-Gj2TaE6Zkm-nwFWpZly3TkOVtLZJaw#>:
- Teng, C. I., and Chen, S. Y. (2019). Gender differences in online gaming motivations and behaviors: A study of Chinese online gamers. *Cyberpsychology, Behavior, and Social Networking*, 22(10), 674-682.
- Thurman, N. (2018). Newspaper consumption in the mobile age: Re-assessing multi-platform performance and market share using “time-spent”. *Journalism Studies*, 19(10), 1409–1429. <https://doi.org/10.1080/1461670X.2017.1279028>
- Van Agteren, J., Iasiello, M., and Lo, L. (2021). A systematic review and meta-analysis of psychological interventions to improve mental wellbeing. *Nat Hum Behav* 5, 631–652. <https://doi.org/10.1038/s41562-021-01093-w>
- Vigneswaran, E. (2021) Understanding impulsivity: Male vs female brain. (2021, December 17). Imperial Bioscience Review. <https://imperialbiosciencereview.com/2021/12/17/understanding-impulsivity-male-vs-female-brain-neuroscience/>

Vlachopoulos, D., Makri, A. The effect of games and simulations on higher education: a systematic literature review. *Int J Educ Technol High Educ* 14, 22 (2017).

<https://doi.org/10.1186/s41239-017-0062-1>

Watters, A. (2022). 25 Crucial Information Technology Statistics and Facts to Know.

CompTIA Community. <https://connect.comptia.org/blog/information-technology-stats-facts>

Weafer, J., & De Wit, H. (2014). Sex differences in impulsive action and impulsive choice. *Addictive Behaviors*, 39(11), 1573–1579.

<https://doi.org/10.1016/j.addbeh.2013.10.033>

Wei, X., Palomaki, J., Yan, J., & Robinson, P. (2016). The Science of Detecting Tilting.

ACM International Conference in Multimedia Retrieval.

<https://dl.acm.org/doi/10.1145/2911996.2912019>

What Is Simple Random Sampling? (2023, July 31). Simply Psychology.

<https://www.simplypsychology.org/simple-random-sampling.html>

White, A & Romano, D. (2020). Scalable Psychological Momentum Forecasting in Esports. ResearchGate.

[https://www.researchgate.net/publication/339003417\\_Scalable\\_Psychological\\_Momentum\\_Forecasting\\_in\\_Esports](https://www.researchgate.net/publication/339003417_Scalable_Psychological_Momentum_Forecasting_in_Esports)

Williams, R. (2017). Anger as a Basic Emotion and Its Role in Personality Building and Pathological Growth: The Neuroscientific, Developmental and Clinical Perspectives

10.3389/fpsyg.2017.01950.

Wu, M., Lee, J. S., & Steinkuehler, C. (2021). Understanding Tilt in Esports: A Study on Young League of Legends Players. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3411764.3445143>

Yamaguchi, S. (2023). The relationship between playing video games on mobile devices and well-being in a sample of Japanese adolescents and adults. *SAGE Open Medicine*, 11, 205031212211478. <https://doi.org/10.1177/20503121221147842>