Article

Importance of Social Videogaming for Connection with Others During the COVID-19 Pandemic

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Abstract

This study focused on the importance of social videogame play for remaining connected to others early in the COVID-19 pandemic. While social isolation and loneliness negatively affect well-being, social interaction is important for positive outcomes. During the pandemic, online videogame play has offered a safe outlet for socialization. Participants (n = 45) completed a survey rating the importance of gaming for feeling connected to family, friends, and co-workers, before, during, and after stay-at-home orders. As expected, the results indicate that social videogame play and its importance increased significantly during the stay-at-home period and decreased afterward. The importance of gaming with friends and co-workers increased significantly during the stay-at-home period but did not decrease significantly afterward. Social gaming was more important for remaining connected with friends and co-workers than family. Participants likely had more direct interaction with family members, while more effort was necessary to maintain contact with non-family members.

Keywords

social videogames, social connection, COVID-19 pandemic, bonding capital, bridging capital

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Introduction

Early in the COVID-19 pandemic, the opportunity for social interaction was constrained by executive orders and business decisions that led to the closing of schools, workplaces, restaurants, gyms, etc. The resultant stay-at-home orders severely limited the potential for face-to-face interactions (Klaiber et al., 2021). This limitation to in person interaction had societal impacts. It is known that social interaction and support are very important for positive socioemotional outcomes (Sun et al., 2019), while social isolation and loneliness have negative effects on emotional well-being (Barreto et al., 2021; Polizzi et al., 2020; Provenzi & Tronick, 2020). During this period of social distancing, one safe available source for fun and social interaction was online social gaming (Strauss, 2020). This study examined the importance of online gaming for feeling connected with family, friends, and co-workers early on in the pandemic.

Social Interaction and Well-Being

The quality and quantity of people's social interactions are positively related to their well-being. For example, in a brief longitudinal design, Sun et al. (2019) recorded college students' social interactions and coded their quality. Students also completed self-reports about their interactions. These researchers found that students who experienced higher rates of social interaction reported feeling happier than those who had lower rates of social interaction. Students felt more socially connected when interacting with others, particularly if the conversation involved self-disclosure and/or took place with well-liked partners.

In contrast, social disconnection and loneliness are tied to negative mental and physical health outcomes, including anxiety, depression, and poor health behavior (Heinrich & Gullone, 2006). When social networks were abruptly disrupted early in the COVID-19 pandemic, this resulted in negative mental and physical health outcomes. Klaiber et al. (2021) examined responses to the COVID-19 pandemic in 2020 among adults in the U.S. and Canada. Adults—particularly young and middle-aged adults—experienced many COVID-19 stressors. Young adults reported greater negative affect in response to stressors than their middle-aged counterparts. However, positive events, including remote social interaction, was found to moderate negative affect, especially among young adults.

Early in the pandemic (March–July 2020) research teams around the world collected data on loneliness, depression, anxiety, suicidal ideation, health-related factors, and exposure to COVID-19 related events, with similar results. Palgi et al. (2020) collected cross-sectional data in Israel; Lee et al. (2020) collected cross-sectional data in Seattle, WA; Tull et al. (2020) collected cross-sectional data from adults in the U.S.; and Killgore et al. (2020) collected longitudinal data from adults in the U.S. Each of these studies found that social distancing and other pandemic-related stressors resulted in increased loneliness and negative mental health outcomes. Palgi et al. (2020) and Lee et al. (2020) found that loneliness was the strongest predictor of depression and anxiety

during this period. Furthermore—similar to the results of Klaiber et al. (2021)—Palgi et al. (2020) found that young adults were more strongly impacted by loneliness and other pandemic-related stressors as compared to older adults. Finally, Killgore et al. (2020) found that loneliness predicted suicidal ideation.

In the UK, in an extensive cross-cohort study, Bu et al. (2020) examined data collected before the COVID-19 pandemic and data collected across several months of strict social lockdown. Participants with the highest levels of loneliness at the beginning of the pandemic showed the largest increases in loneliness across the lockdown. Similar to the results cited above; young adults were at greatest risk of experiencing loneliness. In addition, Bu eta al. (2020) found that women reported higher levels of loneliness than men and unemployed individuals experienced greater loneliness than those who were employed.

Research with children and adolescents indicates that mental health outcomes during the pandemic were tied to familial support and quality of family interactions. Penner et al. (2021) examined mostly Hispanic and Latinx youth from the southwestern U.S. The students (who were in late childhood and early adolescence) completed a baseline survey as a part of a larger study before the pandemic. During the pandemic, students were surveyed regarding its impact on family functioning and completed an instrument assessing mental health. The primary change reported in many homes was a drop in income due to a family member losing their job. Otherwise, the youth reported little or no stress or family conflict during the stay-at-home measures. In terms of mental health, the authors reported that students who had high levels of internalizing or externalizing problems prior to the pandemic had significantly lower levels of these problems during the pandemic. This was contrary to the researchers' expectations. They hypothesized that for these youth the stay-at-home measures resulted in strengthened family relationships, providing them with a buffer from mental health problems.

Similarly, Cooper et al. (2021) studied loneliness, social contact, parent-adolescent relationships, and mental health problems among adolescents in the UK. This study had both cross-sectional and longitudinal components. Loneliness was related to poorer mental health among the adolescents at the beginning of the study (11 weeks into lockdown), but—as with the findings of Penner et al. (2021)—closeness with parents moderated both loneliness and mental health problems over time. Adolescents with close relationships to their parents reported lower loneliness and fewer mental health problems one-month later. Further, at that point in time loneliness no longer predicted mental health problems.

On the other hand, France et al. (2021) carried out a longitudinal study of adolescents in Canada with less positive results. They collected data on adolescents' depression, anxiety, and emotional dysregulation four times prior to the pandemic and once during the pandemic. The researchers did not examine family relationships. They found that depression and anxiety increased for this sample, particularly among the youth who reported more negative sequela of the pandemic.

Social and Psychological Outcomes of Online Gaming

Several studies (Cooper et al., 2021; Penner, et al., 2021; Tull et al., 2020) found that social connection with family and friends mitigated negative outcomes during the pandemic. Online social gaming was a potential mechanism to maintain social connection in the face of social distancing. Online videogaming is popular across the lifespan. The Entertainment Software Association (ESA; 2019) reports that 63% of gamers play socially. A majority of households (75%) have at least one gamer; 65% of adults play videogames, 46% of gamers are female, and 57% of parents enjoy gaming with their children. A popular press story reported that parents found gaming to be a safe way for their children to maintain contact with friends during the pandemic (Strauss, 2020).

Research has found both positive and negative social outcomes tied to online social gaming (Shi et al., 2019). For example, problematic online gaming can result in social isolation or disruption of in person interactions. Tham et al. (2020) found that problematic levels of gaming among college students was tied to reduced real-world support and higher levels of anxiety and depression. While those with problematic gaming had more in-game support, only real-world support had a direct effect on decreased anxiety and depression. This may be because problem gamers often use gaming to try to cope with life stressors, rather than using problem-focused coping (Shi et al., 2019). On the other hand, in a longitudinal study of German adolescents and adults, Domahidi et al. (2018) found that playing games with online friends did not displace time spent with friends in person. In fact, online game play strengthened intimacy and social support in existing friendships.

Another potential negative social outcome of online gaming is bullying. Ballard and Welch (2015) found bullying to be common in online social videogames. Female and LGBTQ participants were particularly likely to report bullying victimization in online gaming contexts. Bullying, regardless of context, has a myriad of negative effects, including risk of poor mental health, suicidal ideation, and substance use (Brailovskaia et al., 2018; Kritsotakis et al., 2017).

Some studies have examined prosocial and/or aggressive behavior in response to game play (see Ferguson, 2020 for a brief review). For example, Gentile et al. (2009) found that prosocial gaming was tied to higher levels of prosocial behavior in three studies (a cross-sectional study, a longitudinal study, and an experiment). In the cross-sectional study, among children in Singapore, prosocial videogame play positively correlated with prosocial behavior when controlling for other factors. In a longitudinal study of Japanese children, Gentile et al., (2009) found that playing prosocial videogames predicted increased prosocial behavior months later. Finally, an experiment with American college students found that those who played a prosocial game were more helpful toward their partners in a puzzle task and that those who had played a violent game were more hurtful toward their partners in the task (Gentile et al., 2009).

The current study, which examines the importance of social gaming during the pandemic, uses the theoretical perspective of social gaming research that focuses on

social capital. Social capital refers to the individual's social networks and interpersonal connections and resources (Domahidi, et al., 2018). There are two types of social capital, bonding and bridging social capital. Bonding social capital involves the development of intimacy and mutual social support, while bridging social capital is the sharing of information and practical resources as a part of a larger online or real-life community. Bridging social capital lacks the intimacy of bonding social capital (Domahidi et al., 2018).

Some research on social capital takes a social cognitive perspective and emphasizes the importance of examining gamers' motivations for game play (Rueda, 2021; Tang & Mahoney, 2019). Rueda (2021) argues that game engagement, motivations for game play, and emotional responses to game play impact players' perspectives and outcomes. In one study examining this hypothesis, Perry et al. (2018) examined game engagement and social capital among players of an online-only multi-person first-person shooter game. They found that game play with both online-only and real-life friends correlated positively with bonding social capital. Playing with online-only, but not real-life, friends was also tied to greater bridging social capital. Positive engagement with the game mediated the link to bonding and bridging social capital.

Other studies examined the relationship between motivations for online game play, social capital, and real-life civic engagement or prosocial behavior. Molyneux et al. (2015) suggested that both real-life and gaming communities have social capital and that these resources benefit both individuals and the community. They collected data from a large sample of gamers regarding their frequency of multiplayer gaming, gaming social capital, real-life social capital, and life satisfaction. They found that social gaming was positively related to both gaming social capital and real-life social capital. Furthermore, both gaming social capital and real-life social capital were positively associated with real-life civic engagement.

In a study examining the link between social capital and motivation for game play among college students, Dalisay et al. (2015) found that players' motivation for gaming moderated outcomes tied to social capital (measured by neighborliness) and civic engagement. They found that students who reported a social motivation for game play had higher levels of neighborliness, but not civic engagement. However, those with an immersion motivation for playing did report higher civic engagement (Dalisay et al., 2015).

Lastly, in a study examining emotional responses to game play across social contexts, Ballard et al. (2012) had adolescent male participants play either a violent or a nonviolent videogame. Participants played the game individually, competitively against a male partner, and cooperatively with the partner. Participants found playing the violent game more exciting and enjoyable than the nonviolent game. Most relevant to the current study, participants enjoyed game play more, and found it more exciting, when they played competitively or cooperatively than when they played individually. Interestingly, they liked their partner more after playing the violent than the nonviolent game.

Statement of the Problem

In this study, we aim to fill a gap in the existing literature regarding the importance of online videogame play on feelings of connectedness during the pandemic. We identified only one study (Fraser et al., 2021) that examined videogame play use during the pandemic. The researchers found that both TV and videogame use increased among college students from the spring of 2019 to the spring of 2020, after the pandemic began. However, they did not examine how game play was used to maintain social connections. And, while Riva et al. (2020) hypothesized that positive technologies were likely to facilitate better functioning and psychological well-being across the pandemic, they did not test this hypothesis. Thus, our study expands on this area of research by examining the importance of social videogame play for remaining connected to others during a time of social distancing.

Hypotheses

This quasi-experimental research examined participants' assessment of their use of social gaming to remain connected with others at three time periods: (1) before the stay-at-home orders, (2) during the stay-at-home orders, and (3) after these orders were eased to safer-at-home.

Hypothesis 1. We expected that participants would report an increase in social videogame play during the stay-at-home orders related to the COVID-19 pandemic compared to before the orders.

Hypothesis 2. We predicted that social videogame play would be rated as more important for connecting with friends, family, and co-workers/classmates during the stay-at-home period.

Hypotheses 3 and 4. We expected these trends to reverse during the more relaxed safer-at-home period. Specifically, we expected that the amount of social game play and its perceived importance would decrease following the easing of restrictions during the safer-at-home period.

Method

Participants

Participants were recruited through social media sites (Facebook, Instagram, Reddit). We began collecting data in May 2020 after the stay-at-home orders (which started on March 27, 2020 in NC) were relaxed to safer-at-home regulations. We stopped collecting data when the safer-at-home regulations were further relaxed and Phase 2.5 began (Sept. 1, 2020 in NC). A study description was posted on social media sites.

Participants who were interested in participating could click a link that took them to a Qualtrics survey. They gave consent prior to starting the survey. A total of 103 participants began the survey. However, due to a technical issue with the sliding scale items, 58 participants were unable use the sliding scales; these items were the primary variables for the survey. Qualtrics technicians were unable to determine why this malfunction occurred. However, the sliding scales required two actions (a slide and a click) on most devices. So, if participants slid the scale without adding a click, their data was not recorded. Thus, only the 45 participants who used the sliding scales correctly were included in the analyses. Participants ranged in age from 12 to 73 ($M = 27.16$; $SD = 11.99$). Of these most ($n = 24$) were male, 17 were female, and four were non-binary. Most ($n = 41$) were White, one was Black, one was Latinx, and one was Biracial. Some ($n = 14$) were considered essential workers during the stay-at-home period of the pandemic. Education ranged from 6th grade through graduate degrees. All participants were from the U.S. and the majority were from North Carolina.

Measures

A 30-item survey was administered via Qualtrics. There were eight demographic questions, five items asked about the devices used to play videogames, and three items assessed average daily game play before the pandemic, during the stay-at-home orders, and after the stay-at-home orders were relaxed to safer-at-home regulations. Based on the literature on gaming and social capital, four questions asked about the importance of social gaming before the stay-at-home orders (overall, and with friends, family, and classmates/co-workers). These items were answered using a Likert sliding scale (participants had to slide the scale with their finger or mouse and click) from 1 (not important) to 5 (very important). Four similar questions asked about the importance of social gaming during the stay-at-home order and four questions asked about the safer-at-home period. The instrument is available from the first author upon request.

Procedure

The study was approved by the University IRB. The authors and their research team shared a description of the study and a link to the Qualtrics survey to various social media outlets (e.g., Facebook, Instagram, Reddit) and encouraged others to share the description and link to their social media pages. After reading the study description, participants who were interested in the study could click a link that took them to the Qualtrics survey. Prior to completing the survey, they consented or assented to participate. Those under 18 were required to obtain parental consent. After providing consent, they completed the 30-item survey described above. Participants answered the demographic questions first and then questions about the devices used to play videogames and amount of game play. Finally, they answered the 12 sliding scale questions about the importance of social videogame play overall and for remaining connected with friends, family, and co-workers.

Table 1. Means and SDs for Videogame Play in Minutes and Importance of Game Play Before, During, and After Stay-at-Home Orders.

Item	Before M (*SD*)	DuringM (*SD*)	M After(*SD*)
Game play in minutes	97.95 (104.17)	215.59 (170.85)**	130.95 (135.31)*
Importance overall	2.19 (1.00)	3.14 (1.50)**	2.69 (1.39)*
Importance with friends	2.67 (1.29)	3.36 (1.62)*	2.89 (1.45)$^{n.s.}$
Importance with family	1.66 (0.93)	2.11 (1.44)*	1.84 (1.18) $^{n.s.}$
Importance with Co-Workers/ Classmates	1.58 (0.98)	2.00 (1.27)*	1.79 (1.13) $^{n.s.}$

*$p < .05$, **$p < .01$ for mean differences on pairwise comparisons between "Before" and "During" and between "During" and "After" the stay-at-home orders.

Results

The means and standard deviations for daily minutes of videogame play and importance of videogame play overall, with friends, with family, and with co-workers/ classmates across the three time periods measured (before the stay-at-home orders, during the stay-at-home orders, and during the safer-at home period) are presented in Table 1.

Five repeated measures ANOVAs were used to test the hypotheses about changes in the time spent playing videogames daily and the importance of online social gaming overall, with friends, with family, and with co-workers across the three time periods. The results of these analyses, including Wilks' Lambda, F, p, partial η^2, and power, are presented in Table 2. Each of the repeated measures ANOVAs, except for the importance of online gaming with family, were significant. The analysis for online gaming with family neared significance ($p = .052$).

For the significant ANOVAs, pairwise comparisons were used as follow-up tests to compare means for each dependent measure from before the stay-at-home orders to during the stay-at-home orders and to compare means from during the stay-at-home orders to during the safer-at-home period. Levels of significance for the comparisons are reported in Table 1. The findings show that videogame play increased significantly from before the pandemic to the stay-at-home period. Game play decreased significantly again during the safer-at-home period. Participants reported that the overall importance of social videogame play increased significantly from before the pandemic to the stay-at-home period and decreased significantly again during the safer-at-home period. They reported that the importance of social videogame play with friends and co-workers increased significantly from before the pandemic to the stay-at-home period but importance did not decrease significantly from the stay-at-home period to the safer-at home period.

Table 2. Repeated Measures ANOVAs for Videogame Play in Minutes and Importance of Game Play Before, During, and After Stay-at-Home Orders.

Item	Wilks' Lambda, F value, p value, partial η2, and power
Game play in minutes Wilks'	Lambda .578; [F = 15.30 (2, 42), *p* = .000, partial η2 = .422; power = .99]
Importance overall Wilks'	Lambda .508; [F = 16.45 (2, 34), *p* = .000, partial η2 = .492; power = .99]
Importance with friends Wilks'	Lambda .736; [F = 6.09 (2, 34), *p* = .005, partial η2 = .262; power = .86]
Importance with family Wilks'	Lambda .849; [F = 3.21 (2, 36), *p* = .052, partial η2 = .151; power = .57]
Importance with Co-Workers/ Classmates	Wilks' Lambda .843; [F = 3.36 (2, 36), *p* = .046, partial η2 = .157; power = .60]

Discussion

We hypothesized that participants would report playing more social videogames during the stay-at-home orders related to the COVID-19 pandemic and would perceive social game play as more important for connecting with friends, family, and co-workers/ classmates during this period. We also expected that the amount of social game play and the perceived importance of social game play would decrease following the easing of restrictions during the safer-at-home period. The hypotheses that time spent in social game play and the perceived importance of social game play would increase significantly and then decrease significantly were strongly supported. However, while participants reported that the importance of social gaming across specific social contexts (friends and co-workers) increased significantly during the stay-at-home orders, the decrease in importance for interacting with these social groups after regulations were relaxed was not significant. Further, the importance of gaming for interacting with family did not change significantly across the three periods. Therefore, this hypothesis was partially supported.

Social gaming likely increased due to strict limits on in person interactions during the stay-at-home orders early in the pandemic. Social gaming was a safe and fun way to interact with others during this period. While social gaming overall decreased significantly after regulations were relaxed, this was not true for social gaming with friends or co-workers. We did not ask about social gaming with online-only contacts. It might be that participants' level of social gaming with online-only contacts decreased substantially, while gaming with real-life social contacts remained at a higher level. However, this is merely speculation since we did not ask about online-only contacts. Regardless, since socializing in person was still discouraged during the safer-at-home phase, and since many people chose to limit in person interactions, it is likely that social gaming continued to be an important mode of interaction and a source of bonding social capital during the safer-at-home period (Strauss, 2020).

The analysis for changes in the importance of gaming with family failed to reach significance (p = .052) and the analysis for the changes in the importance of gaming with co-workers was only marginally significant (p = .046). However, the analysis for changes in the importance of social gaming with friends across the three time periods was highly significant and the effect size was moderate (p = .005, partial η^2 = .262). This indicates that social gaming played a more important role in remaining connected with friends than family or co-workers. One possibility is that participants had more direct contact with family than with friends or co-workers. Some may have resided in the same home or used other means (e.g., Zoom or FaceTime) to maintain contact with family. In terms of co-workers, it is possible that many participants maintained contact with them in either in person at work or in virtual work environments. If so, then less effort might have been necessary to maintain contact with family and co-workers than with friends. Thus, social gaming might have played a larger role in interacting with friends and providing bonding social capital across the early part of the pandemic.

If this is true, it is likely that this social contact, and the resultant bonding social capital, were linked with positive mental health outcomes for these participants during the pandemic (Cauberghe et al., 2020; Perry et al., 2018; Riva et al., 2020). Riva et al. (2020) suggest that the use of social gaming or other "positive technologies" during the pandemic could enhance positive emotions both directly and through engagement and social connectedness. They also cite evidence suggesting that pandemic-related "Zoom fatigue" might be alleviated by using different online technologies. This might be particularly true if the gaming resulted in conversation and connectedness, rather than brief or impersonal interactions (Sun et al., 2019). So, the context of social gaming likely fostered feelings of connectedness related to bonding social capital.

Strengths and Limitations

The primary strength of the study was that we collected data early in the COVID-19 pandemic when limitations on in person activities changed quickly. Prior to data collection most states and municipalities strictly limited in person activities. We began collecting data when these limitations were eased in many areas of the U.S. and ended data collection when most states and municipalities further lifted restrictions, at least temporarily. Thus, we were able to retrospectively ascertain shifts in game play—and the importance of social game play—from before the pandemic to the strict stay-at-home orders to the more lenient safer-at-home orders. However, due to retrospective nature of the study we did not attempt to measure feelings of well-being or loneliness associated with stages of the pandemic. Due to this limitation, we are unable to ascertain if social gaming was related to greater well-being or lower levels of loneliness. Another limitation is that our sample was small due to both the time-limited nature of the data collection and due to a technical issue tied to the sliding scales used in the study. These limitations affect the generalizability of the data. However, the findings were strong regardless of the small sample.

Conclusions

Prior to the global COVID-19 pandemic, research indicated that social gaming is related to positive outcomes for many people, including increasing their bonding and bridging social capital (Domahidi et al., 2018; Perry et al., 2018). The participants in our study found social gaming important to their social connection with others. Both the amount of social videogame play and its importance increased significantly during the stay-at-home period and decreased afterward in the safer-at-home period. Social gaming was important for maintaining contact with co-workers and particularly important for maintaining contact with friends. Social gaming played a less important role in maintaining contact with family. This is likely because participants had more direct interaction with family members. These findings indication that both bonding and bridging social capital were maintained, in part, by social videogame play during the pandemic. It is likely that the increases seen in social bonding capital available to our participants during this time was related to more positive outcomes.

Future research should consider directly measuring the mental health outcomes related to social gaming. Further, including social cognitive measures related to game play, as suggested by Rueda (2021), including the Digital Games Motivation Scale (DGMS; De Grove et al., 2014) would serve to broaden future research. The DGMS measures social, agentic, and escapism motivations for game play (Tang & Mahoney, 2019). Additionally, there is evidence to suggest that virtual interactions that include vocal interactions create stronger social bonds among participants than those that are text-based (Kumar & Epley, 2020). Future research could examine this factor, as many online social games include vocal interaction. Finally, we did not ask about social gameplay with online-only friends. Since this commonly has positive outcomes (Perry et al., 2018), future studies could ask about social gaming with online-only friends, in addition to asking about real-life family and friends.

Declaration of Conflicting Interests

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References

Ballard, M., Visser, K., & Jocoy, K. (2012). Social context and video game play: Impact on cardiovascular, affective, and cognitive responses. *Mass Communication and Society*, *15*(6), 875–898. https://doi.org/10.1080/15205436.2011.632106

Ballard, M. E. & Welch, K. M. (2015). Virtual warfare: Cyberbullying and cyber-victimization, during MMOG Play. *Games and Culture Online*, *12*(5), 466–491. https://doi.org/10.1177/1555412015592473

Barreto, M., Victor, C., Hammond, C., Eccles, A., Richins, M. T., & Qualter, P. (2021). Loneliness around the world: Age, gender, and cultural differences in loneliness. *Personality and Individual Differences*, *169*(1), 110066. https://doi.org/10.1016/j.paid.2020.110066

Brailovskaia, J., Teismann, T., & Margraf, J. (2018). Cyberbullying, positive mental health and suicide ideation/behavior. *Psychiatry Research*, *267*(Sep), 240–242. https://doi.org/10.1016/j.psychres.2018.05.074

Bu, F., Steptoe, A., & Fancourt, D. (2020). Who is lonely in lockdown? Cross-cohort analysis of predictors of loneliness before and during the COVID-19 pandemic. *Public Health*, *186*(Sep), 31–34. https://doi.org/10.1016/j.puhe.2020.06.036

Cauberghe, V., Wesenbeeck, V., De Jans, S., Hudders, L., & Ponnet, K. (2020). How adolescents use social media to cope with feelings of loneliness and anxiety during COVID-19 lockdown. *Cyberpsychology, Behavior, and Social Networking*, *24*(4), 250–257. https://doi.org/10.1089/cyber.2020.0478

Cooper, K., Hards, E., Moltrecht, B., Reynolds, S., Shum, A., McElroy, E., & Loades, M. (2021). Loneliness, social relationships, and mental health in adolescents during the COVID-19 pandemic. *Journal of Affective Disorders*, *289*(Dec), 98–104. https://doi.org/10.1016/j.jad.2021.04.016

Dalisay, F., Kushin, M. J., Yamamoto, M., Liu, Y.-I., & Skalski, P. (2015). Motivations for game play and the social capital and civic potential of video games. *New Media & Society*, *17*(9), 1399–1417. https://doi.org/10.1177/1461444814525753

De France, K., Hancock, G. R., Stack, D. M., Serbin, L. A., & Hollenstein, T. (2021). The mental health implications of COVID-19 for adolescents: Follow-up of a four-wave longitudinal study during the pandemic. *American Psychologist*, *77*(1), 85–99. https://doi.org/10:1037/amp0000838

De Grove, F., Cauberghe, V., & Van Looy, J. (2014). In pursuit of play: Toward a social cognitive understanding of determinants of digital play. *Communication Research*, *24*(2), 205–223. https://doi.org/10.111/comt.12030

Domahidi, E., Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2018). A longitudinal analysis of gaming- and non-gaming-related friendships and social support among social online game players. *Media Psychology*, *21*(2), 288–307. https://doi.org/10.1080/15213269.2016.1257393

Entertainment Software Association (2019). Retrieved from June 16, 2020 https://www.theesa.com/esa-research/2019-essential-facts-about-the-computer-and-video-game-industry/

Ferguson, C. J. (2020). Aggressive video games research emerges from its replication crisis (sort of). *Current Opinion in Psychology*(Dec), *36*, 1–6. https://doi.org/10.1016/j.copsyc.2020.01.002

Fraser, A. M., Stockdale, L. A., Bryce, C. I., & Alexander, B. L. (2021). College students' media habits, concern for themselves and others, and mental health in the era of COVID-19. *Psychology of Popular Media*, *11*(2), 139, 151, https://doi.org/10.1037/ppm0000345

Gentile, D. A., Anderson, C. A., Yukawa, Sh., Ihori, N., Saleem, M., Ming, L. K., Shibuya, A., Liau, A. K., Khoo, A., Bushman, B. J., Huesmann, L. R., & Sakamoto, A. (2009). The effects of prosocial video games on prosocial behaviors: International evidence from correlational, longitudinal, and expereimental studies. *Personality and Social Psychology Bulletin*, *35*(6), 752–763. https://doi.org/10.1177/0146167209333045

Heinrich, L. M. & Gullone, E. (2006). The clinical significance of loneliness: A literature review. *Clinical Psychology Review*, *26*(6), 695–718. https://doi.org/10.1016/j.cpr.2006.04.002

Killgore, W. D. S., Cloonan, S. A., Taylor, E. C., Lucas, D. A., & Dailley, N. S. (2020). Loneliness during the first half-year of COVID-19 lockdowns. *Psychiatry Research*, *294*(Aug), 113551–113552. https://doi.org/10.1016/j.psychres.2020.113551

Klaiber, P., Wen, J. H., DeLongis, A., & Sin, N. L. (2021). The ups and downs of daily life during COVID-19: Age differences in affect, stress, and positive events. *The Journals of Gerontology: Series B*, *76*(2), Article e30–e37. https://doi.org/10.1093/geronb/gbaa096/5872612

Kritsotakis, G., Papnikolaou, M., Androlakis, E., & Philalithis, A. E. (2017). Associations of bullying and cyberbullying with substance use and sexual risk taking in young adults. *Journal of Nursing Scholarship*, *49*(4), 360–370. https://doi.org/10.1111/jnu/12299

Kumar, A. & Epley, N. (2020). It's surprisingly nice to hear you: Misunderstandign the impact of communication media can lead to suboptimal choices of how to connect with others. *Journal of Experimental Psychology: General*, *150*(3), 595–607. https://doi.org/10.1037/xge0000962

Lee, C. M., Cadigan, J. M., & Rhewe, I. C. (2020). Increases in loneliness among young adults, during the COVID-19 pandemic and association with increases in mental health problems. *Journal of Adolescent Health*, *67*(5), 714–717. https://doi.org/10.1016/j.adohealth.2020.08.009

Molyneux, L., Vasudevan, K., & Zúñia, H. G. (2015). Gaming social capital: Exploring civic value in multiplayer video games. *Journal of Computer-Mediated Communication*, *20*(4), 381–399. https://doi.org/10.1111/jcc4.12123

Palgi, Y., Shrira, A., Ring, L., Bodner, E., Avidor, S., Bergman, Y., Cohen-Fridel, S., Keisari, S., & Hoffman, Y. (2020). The loneliness pandemic: Loneliness and other concomitants of depression, anxiety and their comorbidity during the COVID-19 outbreak. *Journal of Affective Disorders*, *275*(Oct), 109–111. https://doi.org/10.1016/j.jad.2020.06.036

Penner, F., Ortiz, J. H., & Sharp, C. (2021). Change in youth mental health during the COVID-19 pandemic in a majority Hispanic/Latinx US sample. *Journal of the American Academy of Child & Adolescent Psychiatry*, *60*(4), 513–523. https://doi.org/10.1016/j.jaac.2020.12.027

Perry, R., Drachen, A., Kearney, A., Kriglstein, S., Nacke, L. E., Sifa, R., Wallner, G., & Johnson, D. (2018). Online-only friends, real-life friends or strangers? Differential associations with

passion and social capital in video game play. *Computers in Human Behavior*, *79*(Feb), 202–210. https://doi.org/10.1016/j.chb.2017.10.032

Polizzi, C., Lynn, S. J., & Perry, A. (2020). Stress and coping in the time of COVID-19: Pathways to resilience and recovery. *Clinical Neuropsychiatry*, *17*(2), 59–62. https://doi.org/10.36131/cn20200204

Provenzi, L. & Tronick, E. (2020). The power of disconnection during the COVID-19 emergency: From isolation to reparation. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(S1), S252–S254. https://doi.org/10.1037/tra0000619

Riva, G., Mantovani, F., & Widerhold, B. K. (2020). Positive technology and COVID-19. Cyberpsychology. *Behavior, and Social Networking*, *23*(9), 581–587. https://doi.org/10.1089.cyber.2020.29194/gri

Rueda, R. (2021). Metrics of motivation in simulations or game environments. In H. F. O'Neil (Ed.), *Using cognitive and affective metrics in educational simulations and games: Applications in school and workplace contexts* (pp. 85–106). Taylor & Francis. https://doi.org/10.4324/9780429282201-4

Shi, J., Renwick, R., Turner, N. E., & Kirsh, B. (2019). Understanding the lives of problem gamers: The meaning, purpose, and influences of video gaming. *Computers in Human Behavior*, *97*(Aug), 291–303. https://doi.org/10.1016/j.chb.2019.03.023

Strauss, E. (2020). *Why now is the time to embrace video games for kids*. CNN. https://www.cnn.com/2020/05/27/health/video-games-socialization-pandemic-wellness/index.html (Accessed May 27, on the web).

Sun, J., Harris, K., & Vazire, S. (2019). Is well-being associated with the quantity and quality of social interactions? *Journal of Personality and Social Psychology: Personality Processes and Individual Differences*, *119*(6), 1478, 1496. https://doi.org/10.1037/pspp0000272

Tang, T. & Mahoney, L. M. (2019). Digital games motivation scale. In E. E. Graham, & J. P. Mazer (Eds.), *Communication research measures iii: A sourcebook* (pp. 231–236). Proquest. http//ebookce

Tham, S. M., Ellithorpe, M. E., & Meshi, D. (2020). Real-world social support but not in-game social support is related to reduced depression and anxiety associated with problematic gaming. *Addictive Behaviors*, *106*(Jul), 1–4. https://doi.org/10.1016/j.addbeh.2020.1063

Tull, M. T., Edmonds, K. A., Scamaldo, K. M., Richmond, J. R., Rose, J. P., & Gratz, K. L. (2020). Psychological outcomes associated with stay-at-home orders and the perceived impact of COVID-19 on daily life. *Psychiatry Research*, *289*(Jul), 113098–113106. https://doi.org/10.1016/j.spychres.2020.113098

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