

Understanding and Assisting Excessive Players of Video Games: A Community Psychology Perspective

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Research has shown that a small but significant minority of video game players play excessively. Excessive play has been linked to fatigue, diminished productivity in work and school, and poor social relationships. The present study investigated the psychological and social context of video game playing in order to understand the phenomenon of excessive video game play. A group interview method was employed using a sample of 38 participants, including 23 adolescents and 15 adults. The analysis of results revealed several salient themes, including those related to player empowerment, recognition (feeling recognised for skilful playing), control (mastery of the game mechanics), and completion (obtaining all in-game rewards). The implications for community psychologists attempting to help excessive video game players are discussed.

The question of why some people play video games excessively is a current subject of debate among mental health professionals. Over the last decade, studies have investigated the role of players' personality and other individual factors in explaining why some players play to excess (Douse & McManus, 1993; Griffiths & Dancaster, 1995; Black, Belsare & Schlosser, 1999; Yang, 2001). These studies have tended to approach the study of excessive video game play from a person-focussed, clinically-oriented perspective, referring to addiction and social learning models, rather than examining the psychological context of video game playing. This study takes an alternate approach by adopting a community psychology perspective, and considers the psychosocial context and the role of structural elements of video games which may lead a person to play video games to excess.

Before attempting to explain why some individuals play video excessively, it is necessary to qualify what it meant by the term 'excessive' and how this definition fits within the current discourse on technological addictions. The notion that video game playing may be considered a form of behavioural addiction, like problem gambling, has been an ongoing subject of debate for over twenty-five

years (Fisher, 1994; Griffiths, 2008; Griffiths & Davies, 2005). Some theorists argue that the construct validity of technological addictions, including dependency on video games and the Internet, has yet to emerge and thus the term 'addiction' should not be used (Jaffe, 1990; Shaffer, Hall & Vander Bilt, 2000). On the other hand, it has been argued that any activity may be considered as potentially addictive if an individual presents with all six criteria of the components addiction model: salience, mood modification, withdrawal, tolerance, relapse, and conflict (Griffiths & Davies, 2005). Charlton and Danforth (2007) have argued that salience and euphoria associated with video game playing should not be considered as inherently problematic because these symptoms may simply characterise 'high engagement' in video games (i.e., a healthy enthusiasm for playing video games).

Given these conflicting views on 'problem' video game playing or video game 'addiction', there exists some degree of conceptual confusion regarding excessive video game playing as a problematic activity in its own right. For the purpose of parsimony, this paper employs a simple definition that considers video game playing to be 'excessive' when it creates adverse personal and social consequences in a person's life. This definition

allows for some flexibility in its interpretation, as well as the capacity to identify persons whose playing may be more excessive than others. It is not intended as a tool for the diagnosis of 'excessive' players, but as a general guide for considering issues that may relate to excessive video game play in significant ways.

Community psychology is concerned with the study of people within the context of their own settings and social systems. Orford (1992) has argued that individuals are in a state of continuing transaction with the various settings in which they spend time as part of their everyday lives. This transaction is characterised by reciprocity: the individual's participation within their social system affects the system at large, and the various characteristics of the system also affect the individual. This interplay between person and context, it is argued, cannot be broken down into smaller units of analysis, but must be considered as a 'gestalt' entity. Video games are often considered as complex social contexts or social spaces (Fisher, 1995; Jansz & Martens, 2005; Valentine & Holloway, 2002), therefore a community psychology approach may offer a new perspective on why some individuals become excessive players, and may offer some practical solutions for helping these individuals.

A reanalysis of Allen and Britt's (1983) feedback model of social class and psychological disorders may be useful in understanding excessive video game playing. In their model, there is a relationship between stressful life events and psychological problems which is mediated by social class. Social class acts in two main ways: it affects the likelihood of stress, and the speed with which the feedback between the psychological problem and stressful life events occurs. For excessive video game players, it may be useful to consider the role of social class in this model in an additional way. There is a great deal of literature that shows how a player can take on a 'new' social class (i.e., status as

defined by the video game context, most notably within online games but this is also applicable to offline, 'stand alone' games) and can become an integral part of the social network associated with the video game (Engelberg & Sjoberg, 2004; Jansz & Tanis, 2007; Valentine & Holloway, 2002). A social role in the video game may grant a person a temporary release from stressful life events. As a player's video game status increases (i.e., becomes more powerful and recognised by others), it may be perceived as more important than the player's social class in the real world (which may be less upwardly mobile). It is important to note that the resources – personal, social, economic - available to the player in the video game may far outnumber those available in the real world. In this way, the model predicts that a large divide between a player's video game status and real life social class, in conjunction with stressful life events, will increase vulnerability to playing video games to excess.

Research into excessive video game playing is limited in the Australian context. However, there have been a number of studies overseas which have examined the importance of structural characteristics in video games in explaining the appeal of video games (Chumbley & Griffiths, 2006; Johansson & Gotestam, 2004; Wood, Griffiths, Chappell, & Davies, 2004). Other studies have emphasised the importance of the social nature of video games in explaining why some individuals become highly involved (Griffiths, Davies, & Chappell, 2004; Ng & Wiemer-Hastings, 2005). Charlton and Danforth (2007) stated that many video games may be attractive because *players take-on the role of a character in a virtual environment in which a story line evolves over time and the time frame in which an event will occur is unpredictable... [and] they are particularly good at inducing operant conditioning via variable-ratio reinforcement schedules* (p. 1534).

Despite this literature that highlights the importance of the social and structural features in video game playing, there have been few published studies which examine the role of these factors in excessive video game playing.

This qualitative study set out to examine in greater detail how individuals become excessively involved in video games, by exploring the relationship between player, video game machine and the social context of player-machine interaction. It was hoped that this approach would enable a broad and coherent explanation for the phenomena of excessive video game playing, particularly in relation to the structural characteristics of video games, the video game player and the wider social network of players.

Method

Participants

Seven semi-structured group interviews were conducted (three groups of four participants and four groups ranging from three to eight participants in size). The total sample was 38 participants, including 23 adolescents (15 males, 8 females) and 15 adults (11 males, 4 females). The mean age of the adolescent group was 16.2 years ($SD=0.7$) and the mean age of the adult group was 30.4 years ($SD=6.7$). In terms of video game play, the adolescent group reported playing between 3 and 40 hours per week ($M=14.5$, $SD=12.3$) and the adult group reported playing between 2 to 35 hours per week ($M=18.1$, $SD=11.2$). By conducting the interviews in small groups, participants felt comfortable discussing their experiences playing video games. Previous work has noted that group interviews may minimise any perceived power imbalance between researcher and participants (Wood & Griffiths, 2002).

Materials

A pilot interview study was carried out using four adult video game players. These players' input assisted in the construction of a group interview protocol, including the development of a set of interview questions (see Appendix). These questions were

designed to enquire about players' motivations for playing video games, including what features of games were attractive or rewarding, and what characteristics of video games would keep them playing in a typical playing session. These general questions led into a discussion of excessive video game playing behaviour. Given the participants' broad range of experiences with video games, participants were encouraged to discuss related areas that they considered to be of relevance to the question. The interview protocol was flexible enough to accommodate responses that deviated from interview questions. Prior to taking part in the study, all participants were asked to fill out a short questionnaire concerning the frequency of their video game playing. The audio of all group interviews was recorded.

Procedure

Adolescent participants were obtained by contacting the principal and secondary psychology teacher of a high school in a regional city. Three classes of students were selected for participation in the study. An adult sample was obtained by word of mouth requests at a local non-business internet gaming group. Interviews were conducted in a separate room at the gaming venue. Given that this study was concerned with video game-related experiences, potential participants were checked for eligibility to participate by employing the screening question: "Do you consider yourself a gamer?". A 'gamer' is a commonly used term for a person who plays video games. The mean reported amount of experience playing video games was 11.7 years ($SD=7.7$), so this screening method appeared to be successful. Food and drink refreshments were provided for all participants following the interview.

Establishing rapport was a critical part of the data collection process, especially when interviewing the adolescent participants. To ensure that all participants felt comfortable, there was a brief period of friendly conversation (approximately five minutes) prior to the interviews. The first researcher being a 'gamer' helped to make participants feel more

comfortable referring to specific video games when discussing their playing experiences. Participants consented to having their responses recorded and were informed that these responses would be kept anonymous.

Data analysis

Interview data were analysed using thematic analysis (Braun & Clarke, 2006). This process involved three steps. First, the recordings were transcribed and then the transcripts were checked against the tapes for accuracy. Second, the most salient themes were identified. Each data item was given equal attention in the coding process to ensure an inclusive and comprehensive process. A separate document was created to store a list of all identified themes, as well as record a series of relevant extracts which illustrated each theme. The third step involved using this initial set of themes as a framework to reanalyse the transcripts. All transcripts were reread multiple times to ensure a good fit of the data, as well as to ensure that themes were internally coherent, consistent, and distinctive.

Results

The results are presented in five sections. The first section discusses the notion of 'empowerment' in relation to the video game playing experience; the second section discusses the role of social networks and social responsibility in video games; the third section examines video game rewards and reward delivery in relation to player motivation; the fourth section discusses the player's belief that no amount of time spent playing is 'long enough'; and the final section explores the adverse consequences of excessive play. Direct quotes from the participants are used to highlight the various themes that arose during the group interviews, but these quotes do not represent all of the quotes related to that theme. To ensure participant confidentiality, each quotation has been assigned a coding reference relating to (a) which group the participant was in, and (b) the age and gender

of the participant. Therefore, a coding of 'G1, F, 32' indicates a 32-year-old female participant who participated in the first group interview.

Player empowerment in relation to player recognition and control

This section explores two main ways in which video games can be argued to empower the player. Empowerment refers to a heightened sense of power or authority (Rappaport, 1987). This notion will be explored in relation to participants' experience of feeling a sense of mastery over the virtual properties of the video game environment as well as a sense of contextual status or rank, either from feedback within the video game or in relation to other video game users. These two ideas are represented by the themes of 'control' and 'recognition'.

'Control' was a dominant theme throughout the interviews. This theme refers to the notion that video games grant a player a strong sense of personal agency within the game context. The majority of participants expressed enjoyment at being able to manipulate and interact with features of the video game environment, or exert some influence over the outcome of in-game events. As one participant stated,

You can test what these things do when you input them. You'd hit a combination of keys and activate a booster for health or speed or all these tools that would come in really handy" [G4, M, 21].

Participants also reported a sense of personal freedom in being able to choose how a video game's story would be resolved or controlling the outcome of in-game events using personal strategy ("*In the game you can follow whatever path you want to, and you control it*" [G3, F, 18]).

Some participants felt that video games were more immersive than film or literature because they were able to participate actively, rather than be only passively involved. One structural feature of video games related to player control was the ability to 'save' one's

progress in the game. This feature enables the player to 'reload' an earlier part of the game if they wish to correct an error or otherwise repeat a previous game section ("*I like being able to replay it over and over, getting a part done just right*" [G2, M, 22]).

'Recognition' was another important theme related to empowerment. Many participants reported a sense of fulfilment associated with being rewarded or 'recognised' for having invested tens to hundreds of hours playing some video games. Examples included being given a special title or rank within the game, earning unique items for in-game characters, like weapons or armour, or even an in-game timer that recorded time spent playing the game. Part of the value of these items related to the difficulty in acquiring them,

The best sword in the game is hard to come by. But that's good and bad, bad because I don't get a sword really quickly but that's good because everyone else doesn't [G2, M, 17].

'Meta-game' features also recognised players' effort and time commitment. A common example was online player 'leader boards', where players could compare their progress in a video game with their friends or other players. The 'achievement point' system for a popular video game console system (Xbox360) was also mentioned. Achievement points are similar to loyalty rewards programs; they reward players for not only completing the game but also for performing rather esoteric or unusual actions, such as playing a game non-stop for eight hours, or playing a game with 16 other players at once. Another example was "*playing 1000 games so you can get the Elite achievement points*" [G2, M, 23]. Recognition features were very appealing to male participants, but were less interesting for female participants.

Social networks have associated social responsibilities

It is undeniable that modern video games feature numerous advanced social

utility functions, which coalesce to connect the individual to many others within a large social network. In this study, all participants reported to enjoy playing video games with 'multiplayer' support. The social nature of video game playing was the primary appeal of the activity for some players. Common experiences included helping friends to earn in-game rewards or other achievements, cooperating together to finish a video game, or competing in a team against other players. These experiences were sometimes framed as a type of 'social responsibility' within the network (one participant even referred to the video game as his "*second job*"). Some participants reported that video games enabled a type of online community which shares a common space for the anonymous exchange of personal information as well as information about the video game.

Players reported to adopt an identity within this online 'space' that is associated with the names, titles, language and/or motifs within the video game ("*I have this friend who'll ask me what I'm doing and I'll say "I'm the Hero of Cyrodiil". He's a super, fantastical hero*" [G6, M, 17]), which reinforces a sense of 'togetherness' when working together to achieve various goals within the game. A video game community is composed of a number of social institutions and groupings which exist in the online world, which have the functional purpose of linking certain kinds of players together. Often these social groups hold organised events in the video game that can run for unpredictable periods of time. These events require the participation of a network of players and thus create a 'social responsibility' for each player within that network ("*You are part of the playing group and they rely on you*" [G6, F, 27]).

This responsibility makes it very difficult for participants to stop playing a video game prematurely (i.e., before other players have 'finished') and also encourages the player not to spend too long away from a video game. As one participant stated, "*We're in a team of eight,*

and you can't really stop if only one person wants to stop so you're locked in" [G4, M, 16].

Players also noted the reciprocal nature of social responsibility in the video game world (*"If they've helped you out before, then you just have to keep playing" [G2, M, 15]*).

Rewards and reward delivery in relation to player motivation

Video games may be conceptualised as a system that delivers many different rewards based on players' actions. For participants, it was important how a video game presented a reward to the player in response to 'correct' or skilful behaviour. Some common notions of what constituted a 'good' reward were evident through analysis. 'Good' rewards tended to challenge the player's skill level i.e., not too easy or hard to obtain, were novel in nature and commensurate to a player's effort (*"If you can beat it without any challenge, then that's no fun" [G2, M, 16]*; *"It's great so long as it's not always the same reward over and over" [G2, M, 16]*).

Rewards in video games were particularly salient to the male participants aged between 16 and 25 years, and were reported to motivate repeated plays of the video game (*"I think your achievements or rewards are what keep you coming back to games" [G1, M, 24]*). The rewards in video games were often reported to be the primary motivation for playing (*"I think more about the achievements and rewards over anything else" [G1, M, 23]*).

Participants stated that many video games have complex reward structures that demand multi-tasking management skills and a great deal of player concentration. Many participants felt that concurrent in-game goals (i.e., playing to earn more than one reward at a time) constantly renewed their motivation to play the video game. This was described as a kind of 'reward cycle', in which one goal would be close to completion just as another was completed, so the player would be motivated to obtain or finish off the partially completed goal,

I always want to get to the next level, or you want to just finish that bit off. But you find that you've got five other bars that are really close to the next level" [G4, M, 15].

Participants also discussed video games with variable ratio reinforcement schedules, wherein players are rewarded frequently in the early stages of the game, and then less often in later stages. Participants reported spending long periods of time in the later stages of these reward schedules (i.e., when rewards were delivered highly infrequently), not wanting to leave the video game until a major reward was obtained. If a playing session were interrupted before a major reward was obtained or human error caused a game to end prematurely, then participants reported feeling anxious to return quickly to the video game to obtain the associated reward

Sometimes when I have to exit the game to go to work, I keep thinking about how I haven't finished the bit of the game I was working on. It can make you feel impatient for work to finish so you get back on it [G1, M, 23].

This experience of needing to return to game quickly was referred to by a number of players as satisfying the 'need for completion'.

The variable-ratio reinforcement schedules in video games and participants' need to complete goals often produced what was termed 'grinding' behaviour. Grinding refers to the repetition of an action or series of actions in a video game in order to obtain a reward. In this way, grinding is a mathematically optimal method of acquiring in-game rewards, but the player is sacrificing variety of game play (*"Building up skills means doing the same stuff over and over, like working a really repetitive second job" [G5, M, 33]*). Grinding may involve hours of playing, sometimes uninterrupted, in

order to yield the desired rewards (“*Like you get 10 points and you need 3000 so you’ve just got to keep farming them for a long, long time before you can get what you’re after*” [G4, M, 16]).

None of the male participants reported enjoying the process of grinding, but many felt that there was no other way to satisfy their personal sense of completion concerning a video game (“*Trying to finish something or unlock something and not necessarily enjoying the game, but just wanting to get it done. Satisfying the need for completion*” [G1, M, 24]; “*I played the same level 10 times to get the full set of armour. So that gets frustrating but you have to do it if you want the items*” [G6, M, 27]). There were no data in the study to suggest that female participants had experience or interest in using grinding strategies.

Belief that no amount of time spent playing is ‘long enough’

Many participants reported to continue playing a video game even when the experience ceased to be fun or pleasurable. This led to a discussion of when players felt they had played for ‘long enough’ and whether any features of video games prompted the player to end a playing session. The majority of female participants indicated that they usually quit a video game when they had finished a level in the game, or felt bored by the game. In contrast, many of the male participants reported that they never felt they had played ‘long enough’ in a typical playing session. The desire to continue playing when the game was no longer fun was attributed to the variable reward structure of the game (i.e., the notion that the next reward might be ‘right around the next corner’), and also to the fact that many of the games they played had no definitive ‘end point’. As one participant stated, “*I never really feel like I’ve played a game for long enough. There’s always something more because I don’t really get games that have an end*” [G3, M, 16]).

Online role-playing games, such as

Blizzard Entertainment’s *World of Warcraft*, are known for their lack of a conclusion and can be played indefinitely. The virtually unlimited quantity of rewards in some video games can lead some players on an interminable effort to obtain as many rewards as they can. Concurrent reward structures like two in-game tasks running simultaneously, multiple ‘experience bars’ or other onscreen meters of player progress, and completing one goal and being close to the next kept many participants from taking breaks. For this reason, some participants reported that they only stopped playing a video game when they felt too physically sore or fatigued to continue (“*When my arms and hands are getting sore*” [G6, M, 32]; “*When my fingers aren’t moving fast enough or my hand is asleep*” [G4, M, 16]), or when an external event like meal times or a partner’s request to stop forced them to exit the game (“*Some other external factor, like tea time, that drives you away*” [G7, M, 30]). The key point is that, for some players, the video game playing session does not terminate itself naturally through play.

Excessive playing has negative psychosocial consequences

It is clear that video games can offer a distinct and rewarding experience to the end user. Therefore, it is not surprising that many of the respondents reported that it was difficult to regulate video game playing and sometimes played video games for excessive periods. The fact that the video game machine is located in the home environment appears to make it difficult for players to take time away from the game,

The only thing I don’t like is that you can get so involved that you just want to keep going and you can’t get away from it because it’s always there [G2, M, 16].

Some participants referred to some video games as being “*addictive*”, but this term was employed to emphasise both the positive and negative aspects of the game. A common

consequence of long playing sessions was conflict with important life responsibilities. Participants identified a range of life commitments which had been sacrificed or compromised in some way in order to prioritise a video game playing experience,

Another aspect that I don't like about video games is that it can impact on your family life if you're not careful. It starts to conflict with other important things, like money, jobs, and normal relationships [G5, M, 49].

These experiences included neglecting real life social relationships, diminished school and work productivity (“*I have played all night, had a shower and then went to work*” [G5, M, 49]), ignoring household duties and irregular sleep patterns,

None of us had slept for about 24 hours. I don't think anyone of us wanted to stop but certainly the game kept us engaged and playing for longer than any of us bloody well wanted to” [G7, M, 30].

Discussion

The present study employed qualitative interviews to explore the psychosocial context of excessive video game play. The results showed that a video game can be an empowering agent that gives a player a sense of mastery as well as a sense of status within the context of the game. Video games are also highly rewarding because of the social networks that the player can connect to, enabling them to take on various social responsibilities which provide a sense of identity and belonging within a large community of other players. There are also reward systems within video games which play an important role in sustaining player motivation. The nature of these systems is similar in many ways to gambling machines insofar as delivering rewards on variable-ratio and fixed-interval schedules. The relevance of these factors for community psychologists who seek to help excessive video game players will

be discussed.

This study suggests that people play video games excessively because of the strong feelings of empowerment associated with video games. It is possible that one reason why people play video games to excess may be the lack of empowerment that they have in the real world. Durkin (1995) has stated that video games are designed to facilitate and reward player control and eventual mastery over the video game environment. By comparison, the real world can be an uncertain place that may not treat the individual fairly. For some players, the ‘real’ world may in fact be the video game’s setting, as it is within this interactive space that the player has developed a sense of mastery and feels recognised by others. Castronova (2005) has stated that some people view video game worlds as the best place available to them. In this sense, there may appear to be little incentive for some players to leave the world of the video game. For community psychologists, addressing this notion of empowerment is crucial for helping an excessive player bring their video game playing habits into balance with other life responsibilities. One approach is to help the player to develop strategies and/or life skills to regain control and feel socially rewarded in other areas of their life, such as school, work and relationships. This approach may be complimented by rallying social support for the player as he or she spends more time in non-video game activities.

McMillan and Chavis (1986) have stated that membership to a group is defined by boundaries, emotional safety, a sense of belonging, personal investment and a common language. This study has explored some of the ways in which group membership operates in the social context of video game play. The interview data suggested that: (a) there are boundaries in games indicated by the status of the player’s in-game character, among many other factors, (b) there is a sense of emotional safety in terms of the video game world offering an anonymous space for the exchange of personal information, (c) there is a sense of

belonging through teamwork and competitive pursuits, (d) there is personal investment in terms of players spending long periods of time to acquire in-game rewards, and (e) there is a rich language and symbol system within video games that players develop and use (this paper could not formally address these in detail but there were many examples of video game-related 'jargon' in the transcripts). These are normal and healthy features of group membership; however, these characteristics also provide useful units of analysis for community psychologists in dealing with excessive players of video games. For example, excessive video game play may be characterised by an intense personal investment in the video game. The difficulty for the player in reducing time spent playing is reconciling the personal dilemma that spending less time in the game enables more free time in the real world, but time spent away from the game means fewer video game-related rewards (i.e., abandoning a large personal investment).

Some players appear to form a strong relationship or bond with the video game machine. Selnow (1984) referred to this attachment as "electronic friendship" (p. 155). At its extreme, excessive players may prefer to play the game over spending time with real life friends because it is easier than managing interpersonal relationships and helps to forget feelings of social loneliness. The implication of 'electronic friendship' is players who reduce time spent playing video games are, for all intents and purposes, reducing time spent with a 'friend'. This perspective offers a sensitive insight into the player's negative mood state (that may be termed 'withdrawal' in clinical psychology) that may accompany a decrease or cessation of time spent playing a video game. Sarason (1974) conceptualised social belonging as an acknowledged interdependence with others, and a willingness to maintain this interdependence by giving or doing to others what one expects from them. The problem of electronic friendship is that a machine has no shared values, no emotions,

places no expectations on the player as a friend, and offers no social rewards. The implication is that community psychologists may need to assist the excessive player in understanding the quality of the attachment that has been formed with his or her video game machine. A possible strategy to reduce the player's dependence on the machine is to integrate the person into new social networks that can gratify needs for social belonging.

Player motivation appears to be heavily influenced by the variable-ratio or fixed-interval reward delivery systems in video games. In terms of the nature of rewards, participants reported to prefer video game goals that are not too easy or difficult to obtain.

Csikszentmihalyi's (1990) theory of optimal experience, termed 'flow', states that people reach a motivational peak when engaged in a challenging task that is optimally difficult. This study identified male players who do not seek out optimally challenging video game situations, and instead use 'grinding' tactics, which involves performing an easy and repetitive series of actions in a game in order to maximise reward payout. These participants did not always enjoy the process of grinding but felt it was necessary to satisfy a personal sense of achievement or completion. Video games with concurrent reward schedules that do not have definitive endpoints may also condition the player to think that no amount of time spent playing is 'long enough'. These findings are in line with research that has shown that gamblers will continue to gamble even when they are bored by or no longer enjoy the activity, and report irritation on winning because it sustains a session of play (Blaszczynski, McConaghy, & Frankova, 1990). Helping an excessive player may involve education about the never-ending nature of some video games and how this can influence motivation to play for periods longer than intended.

Rather than adopting a traditional, person-focussed therapeutic approach aimed at addressing various intra-psychic deficits of the individual, such as depression or anxiety, it may

be worthwhile to attend to the environment which maintains a problem video game playing habit. In community psychology, this intervention is called 'second-order change' and involves addressing aspects of the environment which support problem behaviour (Rappaport, 1977). A community psychologist may work together with the player to identify specific environmental factors which promote, develop and maintain unhealthy playing patterns. For example, a community psychologist may recommend that: (a) the player does not have a video game machine in the same room as the person sleeps, to avoid poor sleep hygiene practices, (b) the player has a clock in the same room as the video game machine to monitor playing times (and the player could also set an alarm when playing video games to prompt the end of a playing session), (c) the player plays in a well-lit room to minimise the subjective experience of time loss, (d) the player eats meals in a different room of the house as the playing machine, and (e) the player unplugs and stores away the video game machine when it is not in use, and/or arranges furniture so that it is not facing the video game machine.

The interview data suggested that some video games may be more 'addictive' than others due to the structural features of the game. For example, a person is less likely to spend as long playing a 'casual' puzzle game than an online role-playing game. The latter game type contains potentially 'risky' structural characteristics which make playing more difficult to self-regulate. Broadly, risky features include the requirement of the player to spend increasingly longer amounts of time in order to make progress, and the lack of a definitive endpoint to the game. It is important that parents of younger players are knowledgeable about the kinds of video games which are often associated with excessive playing. The classification labels on video games refer only to explicit content, like violence and language, but they do not contain information on elements like how long the

game takes to complete, and other features which may influence the 'addictiveness' of the video game. Parents should take an active role in their children's media choices and playing patterns, and open a dialogue to discuss what gratification needs the video game fulfils in their life. For adult players, friends and partners who suspect that a person is playing video games excessively should also follow this strategy. Given that some adults play video games to escape or dissociate from the real world, it is possible that these players may not be aware of the extent of their playing habit. It may be beneficial for the player's real life social support network to point out to the player (in a non-threatening and non-judgemental manner) his or her high level of involvement and how it negatively affects their psychosocial wellbeing. Making the consequences of excessive playing more salient may serve to initiate that player's desire for positive self-change.

Players may benefit from discussing their experiences on online message boards related to excessive video game play. They can receive factual information, including guides to healthy playing styles and ways of managing stressors that trigger the desire to play video games. In addition, players can provide and receive support and feedback from others, including those individuals who formerly played excessively. Support services can also help people who are close to an excessive player, such as a parent or spouse, because they can provide support and practical advice, such as suggesting alternative activities during times when the player would usually play video games. In tandem with these support services, community psychologists should consider the role of introducing excessive players of all ages to other social, non-sedentary (and, importantly, time-limited) activities, such as sport and recreation groups, which can offer a sense of achievement and belongingness within a team-based environment.

This research offers additional support

for the notion that excessive video game playing is largely influenced by the ways in which video games deliver rewards to players for skilful behaviour, and the nature of social networking within video game environments. This paper was intended to provide specialist information about the general appeal of video games to mental health professionals who may be unfamiliar with video game technologies and, more importantly, explain how these technologies relate the phenomenon of excessive video game play. Community psychology can assist excessive video game players by helping them to develop a sense of belonging outside of the world of video games, and educating them about the features of video games which keep them playing excessively. As video games become increasingly complex and appealing, it is also important that players are aware of the psychosocial context of video game play and how it can affect their video game playing motivations, for better or worse.

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Appendix

Interview questions

1. What are your favourite aspects of video games?
2. What are your least favourite aspects of video games?
3. When not playing video games, what thoughts about video games most often enter your mind? What do you daydream about specifically?
4. When playing a video game, what features of the game keep you playing longer than you expected? What makes it hard to get off the game?
5. What features of games make you turn them off or no longer want to continue playing?
6. Do you ever find it hard to stop playing a video game once you've started?
7. Have you ever had the experience of playing a video game and not really enjoyed playing, but continued playing anyway? What made you keep playing?
8. When do you feel like you have played a video game for "long enough"?
9. When does a video game make you feel content that you've played for "long enough"?
10. Have you ever wanted to stop playing a video game, but couldn't because you were playing with friends, either with online friends or with friends in the same room?
11. Do you ever think about specific video game characters when not playing? What do you like or dislike about them?

12. Do you ever think about the storylines in video games? What do you like or dislike about them?

13. Do you ever think about specific items, achievements or rewards in games? What do you like or dislike about them?

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