**Title: “*I can actually do it without any help or someone watching over me all the time***

***and giving me constant instruction*”: Autistic adolescent boys’ perspectives on engagement in online video gaming**

Short Title*: Autistic Adolescents’ Experiences of Online Gaming*

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**Abstract:** Research into autistic adolescents’ engagement in online gaming has so far focussed on time spent gaming, or characterising problematic gaming behaviour and has relied mostly on caregiver report. In the current study we interviewed twelve autistic adolescent boys, asking about their perspectives on their engagement in online gaming, and their motivations. We analysed the interview data using thematic analysis, and identified three key themes in the data, which focussed on agency and a sense of belonging, emotion regulation, and acknowledgement of the differing perceptions that the young people and their caregivers had of gaming. Our findings show the need to include the viewpoints of autistic young people in research about their interests and wellbeing, and provide insights that can help caregivers and professionals to support autistic young people in flourishing.

**Keywords:** Autism, Video Games, Wellbeing, Adolescence, Gaming

**Data availability statement:** Research data are not shared due to privacy/ethical restrictions

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**Statement of Contribution**

(i) What is already known on this subject?

* Research into autistic adolescents’ engagement in online gaming has focussed mostly on problematic gaming.
* Autistic adolescents spend more time online gaming than neurotypical peers

(ii) what the present study adds

* We asked autistic adolescents about their own perspectives on gaming engagement
* The autistic adolescents gave insightful commentary on how gaming increases their wellbeing
* Gaming provides opportunities for emotion regulation and agency for autistic adolescents

**Introduction**

Online gaming is an increasingly popular recreational activity among young people, with research suggesting that between 2013 and 2018 the average number of hours that 12-15 year olds spent gaming per week increased from 10.7 to 13.8 hours (Kienast, 2019). This growth in popularity has led to an emerging focus on the relationship between gaming and wellbeing (Lobel, Engels, Stone, Burk and Granic, 2017; Goh, Jones and Copello, 2019; Halbrook, O’Donnell and Msetfi, 2019), with ongoing debate as to whether online gaming is likely to have a positive or negative impact on young players (Kelly, Magor, and Wright, 2021). Gaming has been associated with sensation seeking behaviours and risk of addiction (Hu, Zhen, Yu, Zhang and Zhang, 2017), as signalled by the recent addition of Internet Gaming Disorder (IGD) to the ICD-11 (WHO, 2020). However gaming has also been linked to stress relief (Seok, Lee, Park and Park, 2018) and increased feelings of social belonging (Kaye and Bryce, 2012), demonstrating the positive impact that engagement with gaming can have on wellbeing.

Recently, researchers have started to examine gaming engagement in autistic young people. Autism is a form of neurodiversity (den Houting, 2018), currently defined by the presence of differences compared to the neurotypical (NT) population across a range of domains including sensory processing (Robertson and Baron-Cohen, 2017), social communication style (Milton, 2012) and attentional allocation (Murray, Lesser and Lawson, 2005). Many autistic children and young people (CYP) face significant mental health difficulties (Crane, Adams, Harper, Welch and Pellicano, 2019), due to a range of challenges including sleep (Pavlopoulou, 2020), bullying (Fisher and Taylor, 2016) and stigma (Crane et al. 2019). Thus understanding potential routes to support good mental health outcomes in autistic youth is essential. Online gaming engagement is one potential area of exploration for understanding factors that contribute towards positive wellbeing in autistic CYP, who spend significantly more time engaging in online gaming than NT peers (Mazurek and Englehardt, 2013). However existing research has focussed on gaming in autistic young people as problematic (Kuo, Evans and Zwaigenbaum, 2015; Craig, Tenuta, De Giacomo, Trabacca and Costabile, 2021) or as a tool for ‘social skill intervention’ (Ke and Moon, 2018; Ke, Moon and Sokolikj, 2020), as opposed to examining what motivates autistic young people to engage in online gaming, and the positive impact it has on their wellbeing.

The lack of research focussing on the perspectives of autistic CYP on their own wellbeing can be attributed to the dominant paradigms present in the autism literature. Autism has long been framed as a ‘disorder’, characterised by ‘deficits’ in social communication and imagination, and repetitive and restricted interests (APA, 2013). Thus the majority of literature has viewed any autistic interest as either potentially pathological or a source of potential therapeutic intervention (Lam, Sabnis, Valcarlos and Wolgemuth, 2021) . In a review of the literature on wellbeing in autistic adults, Lam et al. (2021) argue that most research in this area has focussed on ‘objective’ measurements of (normative) constructions of wellbeing, rather than how autistic people subjectively understand and achieve wellbeing in their own lives. Thus, there has been very little focus on enjoyment for enjoyment’s sake, and what kinds of intrinsic motivation that autistic people (particularly CYP) may get from their hobbies and interests.

One approach to understanding the impact of gaming on wellbeing in CYP from their own perspective is through the Lifeworld Framework (Pavlopoulou and Dimitriou, 2019; Pavlopoulou, 2020). The lifeworld framework is an epistemological framework which emphasises the importance of a collaborative approach to understanding a young person’s personal strengths, challenges, and aspirations. The framework draws together eight dimensions of human experience (insiderness, agency, uniqueness, sense making, personal journey, sense of place, embodiment, and togetherness), placing a person at the centre of their own ‘lifeworld’ to acknowledge and validate them as the expert of their own experiences . This epistemological approach shifts our understanding of autistic wellbeing away from a deficit focussed, medical narrative and towards meaningful engagement with what brings joy to young people and genuinely enriches their lives. Here we discuss current literature on video game use and its relation to wellbeing in autistic CYP before we outline the focus of the current study, which aims to address gaps in the literature whilst validating the experiences and perspectives of autistic CYP.

***Online Gaming Engagement***

A systematic review from Stiller and Mößle (2018) examined screen and media use in autistic CYP and found that gaming was a favoured pastime across the 47 studies reported. Several studies have suggested that autistic CYP engage in gaming more frequently than non-autistic CYP (Mazurek and Engelhardt, 2013; Mazurek and Wenstrup, 2013; Shane and Albert, 2008). Kuo, Orsmond, Coster and Cohn (2014) found that autistic CYP mostly played video games alone, however around one quarter of their sample played with peers, using messaging and chats to communicate during. The authors also found that CYP who used computers for social purposes reported more positive friendships. Engelhardt, Mazurek and Sohn (2013) found that autistic boys with access to a computer or games console in their bedroom slept fewer hours per night than those without access. They also found that those who spent more hours per day gaming slept less. However a self-report study from Pavlopoulou (2020) examining sleep and wellbeing in autistic CYP found that engaging in video games prior to bedtime could help young people to unwind as part of their regular nightly routine.

Increased video gaming in autistic CYP has been linked to ‘problematic game use’ (i.e. poor mood, difficulty disengaging from the game, displaying addictive tendencies) and ‘problematic behaviour’ (i.e. inattention, hyperactivity, defiance), particularly in CYP who play ‘first person shooter’ type games (Coutelle et al. 2021; Kuo, Evans and Zwaigenbaum, 2015; Craig, Tenuta, De Giacomo, Trabacca and Costabile, 2021). Similar research from MacMullin, Lunsky and Weiss (2016), also found that parents of autistic boys were more likely to report problematic gaming than parents of non-autistic children. However the measures in these studies were all parent report. Interestingly, Kuo, Magill-Evans and Zweigenbaum (2015) found that parents of autistic CYP were more likely to employ restrictive and instructive mediation strategies in regards to their child’s media use. Their qualitative data suggested that parents often did not see the value of gaming, and preferred their child to be involved in more ‘social’ activities. The disagreement between what parents saw as ‘valuable’ activities, and what CYP preferred to do caused stress and conflict. These findings suggest that previous research into gaming behaviour in autistic CYP might reflect parental bias in perceptions of their child’s gaming behaviour. It is unclear whether gaming is actually ‘problematic’, or simply reflects the parents desire for the child to engage in alternative activities.

***Intervention***

In addition to gaming behaviour in autistic CYP, the use of video gaming as a potential focus for intervention has been widely examined. A meta-analysis from Grynszpan, Weiss, Perez-Diaz & Gal (2014) suggested that technology based interventions focussed on improving ‘social skills’ had limited efficacy. Fernandes, Santos, Amato and Molini-Avejonas (2010) offered the use of child-selected computer games during language therapy sessions, which they argued lead to increased eye contact and number of verbalisations towards the therapist. However children had no interest in playing the games after the session was finished. The authors argue that this may be an indicator of a lack of interest in gaming in children, not considering that the CYP in the study lack interest specifically in engaging in therapy focussed tasks when not in therapy. Hopkins, Gower, Perez, Smith, and Amthor et al (2011) found that autistic CYP displayed increased eye gaze and emotional recognition after engaging with *FaceSay,* a computer-based training programme. There is a lack of evidence as to how beneficial the CYP themselves rate these ‘social skills’ to be, and how they relate to their own personal wellbeing. In regards to personal wellbeing outcomes, Zayeni, Raynaud and Revet (2020) conducted a systematic review to examine the use of video games as a therapeutic support with autistic CYP. They found that commercially available video games can support young people in developing their emotion regulation skills, and to reduce anxiety. However there is a lack of longitudinal research to help us understand the long term outcomes of such gaming.

A prominent issue with these studies is that they do not examine *why* autistic CYP enjoy engaging in gaming. There are a small number of studies that have examined personal motivations for gaming in autistic people, though these have been focussed on the experiences of young adults (16-24 years). Mazurek, Engelhardt and Clark (2015) found that video game play offered relief from stress and anxiety experienced in daily life and provided an opportunity for autistic people to momentarily escape from these emotions. This positive impact of gaming on mood is consistent with research from Villani et al (2018) who identified emotional regulation (ER) as a positive outcome during gaming. They also found that fun and entertainment were highlighted as a major motivator for video game play, which linked to specific game features contributing to the level of enjoyment, for example; achievement and challenge. Similarly Finke, Hickerson and Kremkow (2018) found that forming and maintaining friendships, emotional regulation, skill development, and escapism were key motivators in the gaming engagement of autistic young (mostly male) adults. The participants described gaming as positively impacting their wellbeing in multiple ways, and providing a therapeutic way to disengage from the stressors of everyday life.

Gallup, Duff, Serianni and Gallup (2016) found that online games provide a space for autistic young men to socialise with people who share interests, and work together with others to complete quests. These studies highlight the benefits of gaming in autistic young adults from their own perspective. However, as with the majority of literature on gaming in autistic people, these studies framed the social skills and experiences of autistic people through a medical lens. Here the experiences of autistic people were interpreted through neuronormative expectations. Finke, Hickerson and Kremkow (2018) emphasised that the positive aspects of gaming could be used to assist therapists in developing the language, social, and communication skills of autistic people, whilst Gallup et al. (2016) emphasised how online gaming could teach autistic people ‘social rules’ to be used in face-to-face settings. This focus on intervention and normativity detracts from the importance of the overall message from the participants themselves. Their testimony demonstrated that gaming has a positive impact on the subjective wellbeing of autistic people, and may provide valuable insight into the ways in which autistic people manage their own mental health needs (Lam et al. 2021).

Thus, the aim of the current study was to understand how game play relates to wellbeing in autistic CYP, through exploring motivations for video game engagement, and benefits of playing from their own perspective using a qualitative approach.

**Method**

***Participants***

Twelve families responded to an online advertisement placed on social media (i.e. local parent support groups) which said we were interested in speaking to autistic young people about their experiences of online gaming. To take part, participants had to be: (i) aged 11-18 years (ii) have an autism diagnosis obtained from a National Health Service developmental team (iii) attend a mainstream school, or be in a specialised unit (iv) be able to respond to verbal directions; (iv) be able to consent to participate in the study. Our sample comprised of 12 autistic adolescent males from the North London area, aged 13-15 years (M = 13.75 years, SD = 0.60). Eleven of the participants were white, and one was Black. All of the participants had a diagnosis of autism as confirmed by a caregiver (see table 1) and were in full time education. All participants also had an additional diagnosed specific learning difficulty (spLD, e.g. dyslexia or dyspraxia), and three of the participants had an additional diagnosis of Attention Deficit Hyperactivity Disorder (ADHD). Information on demographics including diagnostic details were obtained from caregivers, who also completed a family background questionnaire, and provided information about their young person’s gaming behaviour. All participants had been gaming for a minimum of two years, and their gaming routine consisted of a minimum of 2 hours per week playing computer or console games. The study received ethical approved from University College London ethics board.

**XXX TABLE 1 XXX**

***Data Collection and Procedure***

Prior to the study, we provided participants and their parents with a written explanation of the study and the aims, using modified CYP-friendly versions of the information sheet for the participants to ensure accessibility. Both parents and the young person themselves provided consent, and the participants were advised that all responses were confidential and that they could stop or withdraw at any stage during the study without having to provide justification. We used semi-structured interviews (see appendix 1) to create a flexible, two-way dialogue between the researcher and the participant We developed the interview schedule on the basis of recommendations provided by Cridland, Jones, Caputi and Magee (2014) to maximise accessibility for the participants. Particular attention was given to the steps involved in their recommendations on interview piloting, obtaining informed and voluntary consent/assent and conducting effective interviews. The questions were designed to tap into participants’ experiences, feelings and beliefs (Welman & Kruger, 2001) and questions focussed on several domains (e.g. patterns of gaming, perceived effects of play) examined in previous literature. The questions were piloted with one autistic adolescent and their parent, who recommended extra time to answer and flexibility in the interview structure. The interviews took place at the family home to provide confidentiality and the space for participants to reflect on their responses, and lasted between 30-60 minutes. After the interviews were finished, the interviewer debriefed the participants and thanked them for their time.

***Methodological Approach and Data Analysis***

We took a interpretivist approach with our epistemology underpinned by the Lifeworld Framework (Pavlopoulou and Dimitriou, 2019).We analysed the data using an inductive, reflexive thematic analysis (TA), following Braun and Clarke (2006; 2020). We selected TA for multiple reasons. Firstly, it provides a flexible approach to the analysis and interpretation of a qualitative dataset. Secondly, reflexive TA emphasises staying aware of our own subjectivity during the research process. Reflexive TA encourages acknowledgement of how our epistemology, experience, and the power dynamic between researcher and participant may influence our interpretations (Braun and Clarke, 2020). This aligns with our epistemological framework, where our interpretations aim to centre and validate the young person’s perspective.

The second author (CU) audio-recorded all interviews and transcribed them verbatim, then verified transcripts against the recording for precision. CU familiarised themselves with the data by reading through the transcripts multiple times, making notes throughout. They used these notes to code interviews at the semantic level, which involved identifying salient constructs in each dataset (e.g. example codes for theme 2 were escapism and immersion). These codes were organised into themes by all three authors (one of whom is an autistic adult), and these themes refined and named, using thematic maps throughout the process to ensure context and detail was fully captured (Bryman, 2001).

**Results**

We identified three major themes from the interview data (see figure 1), which captured the motivations for online gaming, and the impact that this has on the lives of the young people. We discuss each in turn.

**XXX FIGURE 1 XXX**

1. ***Being your own boss: a sense of agency and belonging***

One of the key motivations for engagement with online gaming was the sense of autonomy and belonging that it fostered in the young people. It provided them with the opportunity to make decisions and have control over an aspect of their life, as well as providing the opportunity to ‘try out’ different roles that might be ordinarily inaccessible.

* 1. *A chance to make the choices*

The ability to manipulate game features and exert control over players was a consistent theme for many participants. They explained how having opportunities to successfully influence how the narrative unfolds throughout the game appeared fulfilling and satisfying. Participants noted that games were, *‘more fun than the real world because you are in control’* (Aaron) and *‘you can be the boss’* (Luke). The interactive and creative nature of game design allows for dimensions to be fine-tuned to reflect the players’ thoughts and choices:

 *‘You have control over how the game goes. Change the character, change your team,*

*change your weapon. Whatever you want. You make the choices. You decide. Even if*

*you make a choice and test it out and don’t like it. You can change again. Be exactly*

 *what you want.’* (Christopher)

The level of agency the participant felt they had within a game was often associated with positive feelings of enjoyment, *‘when I get to tell everyone what to do, it’s great,’* and *‘I feel good. No one tells you what to do. I do’* (Toby).

* 1. *Having the option to be powerful*

The ability to take on different identities and become immersed in a fantasy world where you could be and do anything you liked was something the young people in this study found particularly appealing. Specifically, the opportunity to test multiple new identities and attribute their desired characteristics such as strength, power and social status provided a level of fulfilment and satisfaction as they engage with that character:

‘*You can change your characters all the time too. So, then I can become the actual*

*people and experience it for real through their actual eyes. You can’t do that anywhere*

*else. You can’t fly or fight people in real life like they do but I can experience it just*

*how it would actually be.*’ (Harry).

Participants also reported that the experiences that they were provided with were not achievable in real life, *‘I get to be a powerful person. Walk, talk like them which I couldn’t do in real life,’* (Tommy) and *‘You don’t experience it anywhere else. It’s all new and a challenge’* (Sonny).

The challenge of building up a powerful character, and developing skill during gameplay was something that the young people also found intrinsically motivating, giving them the opportunity to acquire skill and knowledge and be recognised as an expert. *‘You get more money when you win to buy better weapons or like a car. It gives you options to be powerful.* (Henry).

* 1. *Being part of the group*

Whilst not all participants reported social interaction as a motivator, several mentioned how gaming facilitated communication and the development of friendships, ‘*Easier to talk to friends online,’* (Alex) and *‘I don’t really like talking face to face but online is ok’* (Aaron). Others indicated how it gave them a shared area of interest to enjoy with friends and sense of belonging to a larger group:

*‘We like the same thing so we can chat about the game and then you feel like you*

 *are in the group because you all like the same thing… We don’t have to think about*

*something to talk about and if we don’t want to talk then we can just mute our headset. But if we want to talk we can.’* (Henry)

*“My friends at school are playing too so I can talk to them about it at school. If you don’t play, then what are you going to talk about?”* (Aaron)

A few participants also said that it was easier to approach peers in the playground that they had gamed with. They explained that the experiences that they were provided with during video interactions created intimate moments “ *…we had something in common to share if we need to talk*,’ (Tommy) and ‘*I know something is connecting us and I can be around them*’ (Tobby).

1. ***Learning how to switch off: regulating emotions through gaming and escapism***

The young people cited escape from the stressors of everyday life, and the impact it had on their emotional wellbeing as a strong motivator to engage in online gaming, *‘It isn’t real life so I can transport my brain there and forget about things’* (Tommy).Gaming provided a safe place, and a distraction from their fears and struggles, *‘I can forget about the things that scare me and buzz around my brain*’ (Toby). The need for time away from outside pressures was also a common experience, *‘People around me make me frustrated. If I don’t want to do something they keep going on and on,’* (Luke)*.* Henry specifically mentioned the pressures they faced within school and how gaming provided the opportunity to switch off from it all while still developing new skills:

‘*School is hard. I don’t know how to do all this stuff but when I play games,*

*I still learn skills but not with all the constant nagging. Its pressure all the*

*time. I can just get a moment of not having that.’*

The ability to escape these outside pressures led to increased feelings of positivity and joy for the young people:

 *‘I have my own space when I’m playing and that’s what I like. It’s peaceful and calm’* (Alex)*.*

*‘I can actually do it without any help or someone watching over me all the time and giving me constant instruction… ‘do this, do that’. Constant voices. I can just hear myself when I play. It’s peaceful and quiet. I know what I’m doing anyway. It’s much better’*(Sonny)*.*

In addition to providing somewhere to relax and unwind, some young people reported how gaming also provided a way to deal with negative emotions. Online gaming was sometimes used as a distraction from less appealing activities which participants found frustrating or boring: *‘Sometimes I have homework but I don’t have time to do it every night. Homework is boring anyway and pointless. I meet my friends online instead,*’ (Alex)and *‘I always play instead of doing my homework. I can’t do it anyway so what’s the point.’* (Luke). Gaming also provided a means of effectively managing negative emotions like stress and anger. For some this was through sheer engagement in something that they enjoy, *‘Sometimes when I start, I’m angry about something but during the game I am happier because it’s what I want to do. It helps your mind and makes it better.’* (Toby). For others, the immersion into the character’s abilities also provided an opportunity to release negative emotions in a safe and controlled environment:

‘*When you are shooting at like a character you release your anger without hurting*

 *someone. You get that feeling out so you can feel better.’* (Christopher).

Mood management was reported to be successfully achieved post game play with participants stating they felt, ‘*relaxed,*’ ‘*calm*’ and ‘*bette*r,’ because they could, ‘*just switch off*.’ In particular Freddie noted, *‘I need it to help me deal with a bad day or when someone annoys me.’*

1. ***Problematic for who? Acknowledgement of different priorities***

Though the young people in this study had a strong motivation to engage in gaming and could identify the positive way that it impacted on their personal wellbeing, they also recognised that their engagement with online gaming could impact negatively on other areas of home life, such as the relationship with their parents, and other aspects of their routine.

*3.1. A need for understanding: dispositional diversity and parental conflict*

Participants expressed their awareness of their parent’s expectations regarding the amount of time they played for, ‘*I know they think I play too much’* (Christopher)and *‘Usually we argue about it (time spent)’* (Henry). However, the young people related this to their parent’s lack of understanding of their need to engage, and the positive role that video game play has on their well-being, ‘*She doesn’t understand,’* (Luke)and ‘*If she asks me about my day, I get annoyed. I need to switch off first. Be calm. Then I’ll be ok’* (Henry).

A major issue had been negotiating homework time and playtime with parents. This often resulted in moments of conflict. Additionally some parents express that gaming is potentially harmful, which led to friction about what the young person and their caregiver though was best for them:

“*Usually we argue about it. She doesn’t want me to play. She thinks I get in a bad mood if I play too long. She makes me in a bad mood though. Always telling me to turn it off. That’s what makes me get angry*” (Henry)

It was also clear that gaming helped the young people to unwind and provided the space they needed to engage with family life, though this wasn’t always clear to caregivers. Freddie described how gaming allowed him to ‘switch off’ in order to make that transition between the demands of school and home: “*My mum usually knows when I come home from school, I play it straight away. If she asks me about my day, I’ll just get annoyed. I need to switch off first*.”

* 1. *Getting into the flow: balancing monotropic focus with self-care*

The young people explained that their reluctance to engage in everyday activities associated with self-care or homework when they had not achieved a particular goal in the game (e.g. ‘levelling up’). Some of the young people noted that their immersion within a game could make it difficult to disengage, and that this might lead to staying up late playing instead of going to sleep:

*‘Sometimes I got to bed at like 1am because I’m trying to complete a level. I just want to get to the end before I stop but it can go on and on. It’s ok if it’s the weekend because I’ll sleep until like lunch time but if I have to get up early then I can’t’* (Alfie).

Alex noted it affecting his eating habits, ‘*I would probably keep playing because I’m not actually hungry. I just have dinner because I have to.’*

**Discussion**

The current study aimed to explore the motivations of online video game play from the perspective of autistic teenagers, being mindful not to interpret their statements through a neuronormative lens. Whilst enjoyment is as good a reason as any to engage in hobbies and leisure activities, the insight provided by the young people here suggests that gaming provides a function that goes beyond sheer enjoyment, providing opportunities for skill development (i.e. decision making) and improving emotional wellbeing. The data painted a rich picture of the benefits and satisfaction that online gaming can bring to the lives of autistic CYP, and are consistent with previous research exploring the perspectives of autistic young adults in relation to gaming. Here we discuss our findings in further detail.

*The importance of autonomy*

Participants highlighted a desire for autonomy and opportunities for agency as a strong motivator for engaging in online video gaming. The pervasive nature of these comments indicated that the young people felt like they had little control over most of their daily lives. This was reinforced by their reflections on the use of gaming to de-stress, where many of the young people spoke of feeling pressured by the demands of others. The young people in this study were also engaging with gaming in a way that promoted their agency and decision making skills which are instrumental in self-advocacy across the lifespan (Pavlopoulou, 2020). Gaming may be one way that young people are able to ‘try out’ more adult or responsible roles in a safe environment and help them to develop their decision making skills.

This desire to try out different aspects of identity was also explicitly highlighted by the young people as something they found enjoyable about game-play, particularly the chance to make their own decisions, and to be ‘powerful’. Many autistic young people experience social stigma (Crane et al. 2019), peer victimisation (Fisher and Taylor, 2016) social exclusion (Kloosterman, Kelley, Craig, Parker and Javier, 2013), and an increase in personal restrictions in comparisons to non-autistic peers (MacMullin, Lunsky & Weiss, 2016). The opportunity to experience life as a powerful person may provide the opportunity to roleplay a more idealised version of themselves

Power and autonomy however were not the only aspects of identity-switching that participants enjoyed. The young people talked about the creative and fantastical aspects of gaming (such as flying, and character customisation) as well as the opportunity to see the world through someone else’s eyes. These statements highlight the creativity and perspective taking skills of autistic young people, which can often be overlooked.

*Self-regulation*

Video games provided the young people in this study with an outlet for daily stress, and worked as both a way to distract from, and deal with negative emotions as well as increasing feelings of positive wellbeing and happiness. This is consistent with previous research showing that gaming can provide opportunities for emotion regulation (Villani et al, 2018; Reinecke et al, 2012) and stress release, a key motivation for gaming highlighted by autistic adults (Finke et al. 2018). The participants in the current study demonstrated insight into their own emotional needs and the strategies they use for managing their emotional wellbeing. These insights can provide caregivers with understanding of how to support their young people in managing their own wellbeing. Additionally they can help caregivers to see *why* a young person might appear to be prioritising gaming over other responsibilities (i.e. doing their homework). This information may provide caregivers with the opportunity to find ways to promote agency, e.g. encouraging their young person to manage their own emotions in positive ways, but also to seek help when struggling instead of avoiding the problem altogether.

*Social Opportunities*

Some of the young people in this study identified the social opportunities provided by online video gaming as a positive benefit. Interacting with friends online instead of face to face facilitated communication and helped to make the young people feel more at ease by providing a platform to communicate on their own terms. The young people also reflected on how online gaming could foster a sense of belonging, through talking to friends with shared interests. These findings are consistent with research into the benefits of online gaming in autistic adults (Gallup, Duff, Serianni and Gallup, 2016), who have highlighted the importance of gaming spaces to share interests with likeminded others. They are also consistent with research which suggests that the communication styles of autistic people may differ to those of-non-autistic people (Milton, 2012; Crompton, Ropar, Evans-Williams, Flynn and Fletcher-Watson, 2020), and that alternative methods of communication may be beneficial for some (Howard and Sedgewick, 2021). Future research should focus on how engagement in hobbies that include a social aspect can a) foster a sense of belonging and wellbeing for autistic young people, and b) might encourage them to recognise and advocate for their own communication needs in adolescence.

*Dispositional diversity and parental conflict*

Despite online gaming providing a wealth of benefits to the young people in this study, they recognised that their parents were not always understanding of their motivations for their engagement with gaming. Milton (2014) highlighted how the concept of ‘dispositional diversity’ (the variation in disposition across different people) can lead to conflict, when mutual misunderstandings arise from a lack of insight into the other’s perspective. The participants expressed how disagreements over what constitutes ‘too much’ gaming could lead to strained relationships with their parents. The majority of studies examining ‘problematic gaming’ in autistic young people typically rely on parent report (Craig et al. 2021). Our findings suggest that what might be labelled as problematic gaming in autistic young people is not necessarily due to ‘excessive’ gaming, but might be due to a disparity in what is classified as excessive by parents (particularly those who do not see the value in gaming as a pastime) and young people. This disparity is important to address, given that parents who see their autistic children as engaging in what they classify as excessive gaming tend to enforce stricter restrictions than they would for siblings (Mazurek & Wenstrup, 2012; MacMullin, Lunsky & Weiss, 2016). These restrictions could lead to the removal of important self-regulation strategies used by autistic young people to modulate their own mood and wellbeing. The current study provides valuable knowledge to support a sensitive approach from parents and professionals, that acknowledges the needs, experiences and priorities of autistic young people. It is important that we recognise the positive impact that engagement with hobbies can bring to autistic young people, whilst also stressing the need for balancing this engagement with other aspects of their daily routine and responsibilities.

*Monotropism and flow states*

The young people in this study did acknowledge that it could be difficult to disengage from gaming when they were immersed in completing a particular task, and that this might cause difficulty in other aspects of their daily routine (i.e. remembering to go to sleep, or eat dinner). This increase in immersion can be explained by the monotropic attentional style theorised to be a core feature of autistic cognition (Murray, Lesser and Lawson, 2005). Monotropism is characterised by a more singular attentional allocation (as opposed to spreading attention across stimuli, in a polytropic manner) and can lead to increased flow states (McDonnell and Milton, 2014), where complete absorption in an enjoyable task can make it more challenging to track the passing of time (Csikszentmihalyi, 1990) and disengage from one task to move on to another. Finding ways to balance engagement in leisure activities with other responsibilities is something many people (autistic or not) have to learn to develop as they transition into adulthood and responsibilities increase. Placing strict restrictions on gaming time is unlikely to help young people to develop this balance effectively. Instead caregivers may want to work with their young person to figure out ways to help them transition more smoothly from one activity to another, and learn about the potential impact of neglecting self-care (i.e. being too tired the next day from staying up too late online gaming). Future research should examine how we can support autistic young people to balance their leisure time with other daily responsibilities, with a focus on personal autonomy that will aid in the development of independence.

**Limitations**

Though the aim of qualitative research is not generalisability, the current sample was small and relatively homogenous (participants were all males aged 13-15 and the majority were white). The homogeneity of the sample was not intentional and is representative of who volunteered to participate (i.e. we did not deliberately exclude participants of other genders). The majority of research on gaming in autistic CYP has been limited to male participants, and young people of other genders may have different experiences of online gaming. These experiences will be important to explore in future research.

Though we did gather information from caregivers about their young person’s gaming habits, we did not ask about their perceptions of their young person’s gaming. Future research might focus on both the experience of the caregiver and young person in order to more closely address discrepancies in perception of gaming behaviour, and how to smooth tensions around gaming.

**Conclusion**

Overall the findings of this research were consistent with previous studies showing that gaming provides a positive outlet for autistic people. However unlike previous studies, we did not focus on how this testimony could be used to encourage normative social skills. Instead our findings highlight the need to acknowledge and validate the viewpoints and experiences of autistic young people in research about their interests and wellbeing. The young people in this study demonstrated a complex understanding of their own interests, emotional needs, outsider perceptions (i.e. parental disagreements) and challenges in balancing responsibilities with leisure time. We recommend that instead of focussing on the use of autistic CYP interests as a way to develop skills that we think they may find challenging, we should recognise that autistic CYP may already be developing these skills (e.g. autonomy) in ways that adults may not expect. Helping caregivers and educators to recognise the insight that young people have into their own needs, and supporting young people to ‘invite them in’ can lead to further self-development opportunities for young people to find their own methods for self-regulation and skill development.

**References**

APA (2013) *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition* (DSM-5). Washington, DC: American Psychiatric Association.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.

Braun, V., & Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis?. *Qualitative research in psychology*, 1-25.

Bryman, A. (2016). *Social research methods*. Oxford. Oxford university press.

Craig, F., Tenuta, F., De Giacomo, A., Trabacca, A., & Costabile, A. (2021). A systematic review of problematic video-game use in people with Autism Spectrum Disorders. *Research in Autism Spectrum Disorders,* 82, 101726.

Crane, L., Adams, F., Harper, G., Welch, J., & Pellicano, E. (2019). ‘Something needs to change’: mental health experiences of young autistic adults in England. *Autism*, 23(2), 477-493.

Cridland, E. K., Jones, S. C., Caputi, P., & Magee, C. A. (2015). Qualitative research with families living with autism spectrum disorder: Recommendations for conducting semistructured interviews. *Journal of Intellectual and Developmental Disability*, 40(1), 78-91.

Crompton, C. J., Hallett, S., Ropar, D., Flynn, E., Fletcher-Watson, S. (2020). ‘I never realised everybody felt as happy as I do when I am around autistic people’: A thematic analysis of autistic adults’ relationships with autistic and neurotypical friends and family. *Autism,* 24(6), 1438–1448.

Csikszentmihalyi, M. (1990). Flow: The psychology of optimal experience (Vol. 1990). New York: Harper & Row.

Coutelle, R., Weiner, L., Paasche, C., Pottelette, J., Bertschy, G., Schröder, C. M., & Lalanne, L. (2021). Autism Spectrum Disorder and Video Games: Restricted Interests or Addiction?. *International Journal of Mental Health and Addiction*, 1-22.

da Silva, C. A., Fernandes, A. R., & Grohmann, A. P. (2014). Assisting Speech Therapy for Autism Spectrum Disorders with an Augmented Reality Application. In ICEIS (3) (pp. 38-45).

den Houting, J. (2019). Neurodiversity: An insider’s perspective. *Autism*, 23(2), 271–273.

Engelhardt, C., Mazurek, M., & Hilgard, J. (2017). Pathological game use in adults with and without Autism Spectrum Disorder. *Peerj*, *5*, e3393.

Engelhardt, C. R., Mazurek, M. O., & Sohl, K. (2013). Media use and sleep among boys with autism spectrum disorder, ADHD, or typical development. *Pediatrics,* 132(6), 1081-1089.

Fernandes, F. D. M., Santos, T. H. F., Amato, C. A. D. L. H., & Molini-Avejonas, D. R. (2010). Recursos de informática na terapia fonoaudiológica de crianças do espectro autístico. *Pró-Fono Revista de Atualização Científica*, 22, 415-420.

Finke, E. H., Hickerson, B. D., & Kremkow, J. M. (2018). “To Be Quite Honest, If It Wasn't for Videogames I Wouldn't Have a Social Life at All”: Motivations of Young Adults With Autism Spectrum Disorder for Playing Videogames as Leisure. *American journal of speech-language pathology,* 27(2), 672-689.

Fisher, MH, Taylor, JL (2016) Let’s talk about it: peer victimization experiences as reported by adolescents with autism spectrum disorder. *Autism* 20(4): 402–411.

Gallup, J., Serianni, B., Duff, C., & Gallup, A. (2016). An exploration of friendships and socialization for adolescents with autism engaged in massively multiplayer online role-playing games (MMORPG). *Education and Training in Autism and Developmental Disabilities*, 223-237.

Goh, C., Jones, C. & Copello, A. A Further Test of the Impact of Online Gaming on Psychological Wellbeing and the Role of Play Motivations and Problematic Use. *Psychiatr Q* 90, 747–760 (2019).

Grynszpan, O., Weiss, P. L., Perez-Diaz, F., & Gal, E. (2014). Innovative technology-based interventions for autism spectrum disorders: a meta-analysis. *Autism*, 18(4), 346-361.

Halbrook, Y. J., O’Donnell, A. T., & Msetfi, R. M. (2019). When and How Video Games Can Be Good: A Review of the Positive Effects of Video Games on Well-Being. Perspectives on *Psychological Science*, 14(6), 1096–1104.

Hopkins, I. M., Gower, M. W., Perez, T. A., Smith, D. S., Amthor, F. R., Wimsatt, F. C., & Biasini, F. J. (2011). Avatar assistant: improving social skills in students with an ASD through a computer-based intervention*. Journal of autism and developmental disorders*, 41(11), 1543-1555.

Howard, P. L., & Sedgewick, F. (2021). ‘Anything but the phone!’: Communication mode preferences in the autism community. *Autism.*

Hu, J., Zhen, S., Yu, C., Zhang, Q., & Zhang, W. (2017). Sensation seeking and online gaming addiction in adolescents: A moderated mediation model of positive affective associations and impulsivity. *Frontiers in Psychology*, 8, 699.

Kaye, L. K., & Bryce, J. (2012). Putting the fun factor into gaming: The influence of social contexts on the experiences of playing videogames. *International Journal of Internet Science*, 7(1), 24-38.

Ke, F., & Moon, J. (2018). Virtual collaborative gaming as social skills training for high‐functioning autistic children. *British Journal of Educational Technology*, 49(4), 728-741.

Ke, F., Moon, J., & Sokolikj, Z. (2020). Virtual reality–based social skills training for children with autism spectrum disorder*. Journal of Special Education Technology*, 0162643420945603.

Kelly, S., Magor, T., & Wright, A. (2021). The Pros and Cons of Online Competitive Gaming: An Evidence-Based Approach to Assessing Young Players' Well-Being. *Frontiers in Psychology*, 12, 1176.

Kienast, K. (2019). Time spent gaming weekly among children UK 2018 | Statista. Retrieved 7 August 2019, from <https://www.statista.com/statistics/274434/time-spent-gaming-weekly-among-children-in-the-uk-by-age/>

Kloosterman, P. H., Kelley, E. A., Craig, W. M., Parker, J. D., & Javier, C. (2013). Types and experiences of bullying in adolescents with an autism spectrum disorder. *Research in Autism Spectrum Disorders*, 7(7), 824-832.

Kuo MH, Magill-Evans J, Zwaigenbaum L. Parental mediation of television viewing and videogaming of adolescents with autism spectrum disorder and their siblings. *Autism.* 2015;19(6):724-735.

Kuo, M. H., Orsmond, G. I., Coster, W. J., & Cohn, E. S. (2014). Media use among adolescents with autism spectrum disorder. *Autism*, 18(8), 914-923.

Lam, G. Y. H., Sabnis, S., Migueliz Valcarlos, M., & Wolgemuth, J. R. (2021). A Critical Review of Academic Literature Constructing Well-Being in Autistic Adults. *Autism in Adulthood*, 3(1), 61-71.

Lobel, A., Engels, R.C.M.E., Stone, L.L. et al. Video Gaming and Children’s Psychosocial Wellbeing: A Longitudinal Study. *J Youth Adolescence* 46, 884–897 (2017).

MacMullin, J. A., Lunsky, Y., & Weiss, J. A. (2016). Plugged in: Electronics use in youth and young adults with autism spectrum disorder. *Autism*, 20(1), 45-54.

Mazurek, M., & Engelhardt, C. (2013). Video Game Use in Boys With Autism Spectrum Disorder, ADHD, or Typical Development. *PEDIATRICS*, *132*(2), X7-X7.

Mazurek, M. O., Engelhardt, C. R., & Clark, K. E. (2015). Video games from the perspective of adults with autism spectrum disorder. *Computers in Human Behavior*, 51, 122-130.

Mazurek, M., & Wenstrup, C. (2012). Television, Video Game and Social Media Use Among Children with ASD and Typically Developing Siblings. *Journal Of Autism And Developmental Disorders*, *43*(6), 1258-1271.

McDonnell, A, and Milton, D. (2014) Going with the flow: reconsidering ‘repetitive behaviour’ through the concept of ‘flow states’. In: Jones, G., and Hurley, E. eds. *Good Autism Practice: autism, happiness and wellbeing*. Birmingham, UK, BILD pp. 38-47.

Milton, D. E. (2012). On the ontological status of autism: the ‘double empathy problem’. *Disability & Society*, 27(6), 883-887.

Milton, D.E. (2014). Embodied sociality and the conditioned relativism of dispositional diversity. *Autonomy, the Critical Journal of Interdisciplinary Autism Studies*, 1(3), 1-7.

Murray, D., Lesser, M., & Lawson, W. (2005). Attention, monotropism and the diagnostic criteria for autism. *Autism*, 9(2), 139-156.

Pavlopoulou, G., & Dimitriou, D. (2019). ‘I don't live with autism; I live with my sister’. Sisters’ accounts on growing up with their preverbal autistic siblings. *Research in developmental disabilities*, 88, 1-15.

Pavlopoulou, G. (2020). A good night’s sleep: Learning about sleep from autistic adolescents’ personal accounts. *Frontiers in Psychology*, 11, 3597.

Reinecke, L., Tamborini, R., Grizzard, M., Lewis, R., Eden, A., & David Bowman, N. (2012). Characterizing mood management as need satisfaction: The effects of intrinsic needs on selective exposure and mood repair. *Journal of Communication*, 62(3), 437-453.

Robertson, C. E., & Baron-Cohen, S. (2017). Sensory perception in autism. *Nature Reviews Neuroscience,* 18(11), 671-684.

Seok, H. J., Lee, J. M., Park, C. Y., & Park, J. Y. (2018). Understanding internet gaming addiction among South Korean adolescents through photovoice. *Children and Youth Services Review*, 94, 35-42.

Shane, H. C., & Albert, P. D. (2008). Electronic screen media for persons with autism spectrum disorders: Results of a survey. *Journal of autism and developmental disorders*, 38(8), 1499-1508.

Stiller, A., & Mößle, T. (2018). Media use among children and adolescents with autism spectrum disorder: A systematic review*. Review Journal of Autism and Developmental Disorders*, 5(3), 227-246.

Villani, D., Carissoli, C., Triberti, S., Marchetti, A., Gilli, G., & Riva, G. (2018). Videogames for emotion regulation: a systematic review. *Games for health journal*, 7(2), 85-99.

WHO. (2020). International Classification of Diseases, 11th Revision (ICD-11).

Zayeni, D., Raynaud, J. P., & Revet, A. (2020). Therapeutic and preventive use of video games in child and adolescent psychiatry: a systematic review. *Frontiers in psychiatry*, 11, 36.

**Table 1:**Participant demographics and pseudonym

|  |  |  |  |
| --- | --- | --- | --- |
| **Participant Pseudonym** | **Age (years)** | **Diagnoses** | **Ethnicity** |
| Luke | 13 | Autism, ADHD,  | White British |
| Harry | 14 | Autism | White British |
| Lenny | 14 | Autism | White British |
| Henry | 14 | Autism | White British |
| Aaron | 13 | Autism | White British |
| Alfie | 15 | Autism | White British |
| Toby | 13 | Autism, ADHD | Black British |
| Christopher | 13 | Autism | White British |
| Alex | 14 | Autism | White British |
| Sonny | 14 | Autism | White British |
| Freddie | 14 | Autism | White British |
| Tommy | 14 | Autism, ADHD | White British |

**Figure 1**: Key themes and sub themes identified from the interview data.



Appendix 1: Interview schedule

|  |
| --- |
| 1. Can you tell me about the games you like to play?
 |
| 1. What’s important/exciting/fun/frustrating/motivating about gaming?
 |
| 1. What is happening before, during and/ or after you play games?
 |
| 1. Is gaming changing in any way what the rest of your day will be like?
 |
| 1. How do you think your family/brother/sister feels about this – is it important to them as well? (If relevant)
 |
| 1. Do you think other people know how you feel about gaming?
 |
| 1. Is there anything you’d want your parents, teachers or friends to understand about gaming that they may not already know?
 |