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Doctoral Thesis: The Impact of Games on Wellbeing in Autism.

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Word Count

Section	Words	Appendices (Including Tables, Figures and References)	Total
Thesis Abstract	297	-	297
Systematic Literature Review	7394	8618	16012
Research Paper	7417	11433	18850
Critical Appraisal	3169	401	3570
Ethics	4045	2632	6677
Total	**22322**	**23084**	**45406**

The Impact of Games on Wellbeing in Autism

This thesis begins with a systematic literature review exploring the experiences of autistic individuals who engage in multiplayer online gaming. A systematic search of the literature identified 11 papers for inclusion. The papers identified were analysed and synthesised using a meta-ethnographic approach. Four themes emerged from the analysis: 1) Relationships in multiplayer online games are built through a platform of opportunity, 2) Multiplayer online games are a platform to practise and develop communication skills with reduced barriers, 3) Emotional recognition, regulation and expression is facilitated through multiplayer online games, and 4) A sense of belonging and self-esteem contributes to increased wellbeing. The review highlighted that multiplayer online games provide opportunities for players to interact in a way that feels less pressured than the face-to-face world. Additionally, players learn skills that contribute to increased self-esteem and improved wellbeing. It is hoped that findings from this review could be used to help psychologists to think about how they can adapt their work to be more suitable for autistic individuals.

The research paper explores the impact of table-top board games on wellbeing and functioning in autistic adults. Ten autistic adults volunteered to participate in semi-structured interviews. Verbatim interview transcripts were analysed following the principles of Grounded Theory. Results identified three main themes: the cycle of board game engagement, impact on aspects of autism, impact on wellbeing and functioning. Content of these themes interacted in a variety of ways, represented in a theoretical model. Limitations for the research, along with areas for future research and clinical implications, have been considered.

The critical appraisal section of this work pulls together the two pieces of work and discuss how they are related. The processes of qualitative research have also been discussed, along with personal reflections. Future directions for the work have been identified.

Declaration

The work submitted for this thesis is my own work, except where references are made. The work is submitted as a record of work undertaken for the Doctorate in Clinical Psychology, the Division of Health Research at Lancaster University. I confirm that the work has not been submitted for any other academic award.

Name: Rebecca Bennett

Signature:

March 2024.

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I would firstly like to thank all of my participants for volunteering their time to share their experiences with me. Each participant provided a unique contribution to this work, and without them, this project would not have been possible.

A huge thank you goes to my research supervisors, Dr Ian Smith and Dr Miriam Sturdee. They have provided me with endless encouragement and support throughout this project and have helped my confidence and passion for research to continue to grow. There has never been a moment where I have felt unsupported on this research journey and that has made such a difference to how much I have enjoyed and learnt from the research process.

My final acknowledgement goes to my family, friends and cohort for always being there for me. Within this, an extra special thank you goes to my husband Alex, who has never stopped believing in me, encouraging me and who has always kept me laughing through the challenges.

Contents

Section One: Systematic Literature Review

What are the Experiences of Autistic Individuals who Engage in Multiplayer Online Gaming?

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Prepared for the Journal: *Autism* (See Appendix B).

Abstract

With a changing technological landscape, there come changes in the ways in which we interact with others. Multiplayer online gaming (MOG) is becoming an increasingly popular way to interact. Within the online gaming community, there is a high proportion of autistic players. The aim of this review is to understand the experiences of autistic individuals who engage in MOG activity. A qualitative systematic review was conducted across five databases: PsychINFO, Medline, CINAHL, ACM Digital Library, and Web of Science. An additional search on Google Scholar was conducted to screen for grey literature. This resulted in 11 studies being identified for inclusion. Studies were synthesised using a meta-ethnographic approach, which generated four themes. The review highlighted that MOGs provide opportunities for players to interact in a way that feels less pressured than the face-to-face world. This has positive implications for developing social skills and forming relationships with others. Additionally, players learn a variety of skills that contribute to increased self-esteem and improved psychological wellbeing. It is hoped that the findings from this review could be used clinically to help psychologists to think about how they can adapt the way they work to be more suitable for autistic individuals.

Lay Abstract

Multiplayer online gaming is becoming an increasingly popular way to interact. Within the online gaming community, there is a high number of autistic players. We wanted to look at the research to understand the experiences of autistic individuals who play multiplayer online games. Eleven research papers were found and from these papers, there were four themes created. The people who took part in the research said the multiplayer online games helped them to understand and form relationships, and helped them with communication. They also said that playing multiplayer online games helped them with their emotions. Finally, they said that playing multiplayer online games helped them to be themselves and this improved their wellbeing. This could enable mental health staff to understand how they can support autistic people better.

Introduction

With a changing technological landscape, there come changes in the ways in which we interact with others. One way that people choose to interact is through multiplayer online games (MOG). These types of video games allow people to interact and play with each other in a shared virtual game environment. Games can either take the form of co-operative play, where players work together towards a common goal (Seif El-Nasr et al., 2010), or competitive play, where players compete against each other to achieve a goal (Griffiths et al., 2016). Multiplayer online gaming can be accessed from a range of hardware across many platforms (E.g. Computer, Xbox, PlayStation, and Virtual Reality Platforms) and spans various genres of gaming.

A term often used in the MOG world is ‘Massively Multiplayer Online Games’ (MMOGs) (Chan & Vorderer, 2006). This refers to any online game hosting multiple players in a virtual game environment. The term ‘massively’ is used to suggest that the gaming platform can support thousands of players at the same time. It is difficult to determine the exact number of MMOG players worldwide, but it is thought that the most commonly played game alone, World of Warcraft, has around 135million players (MMO Populations, 2024). Further, the exact demographics of the MMOG gaming population are unknown. This can make it difficult to understand the unique experiences and motivations of people who engage in MMOG activity.

Whether an MMOG, or a smaller scale MOG, players typically have platforms via which they can communicate. For example, there may be the ability to send instant messages through the gaming platform, or speak via voice or video chat. These channels of communication are sometimes built into the gaming platform, or achieved through other dedicated means such as Discord (Discord Inc, 2015). Having a channel of communication is particularly important when the game requires team coordination (Spyridonis et al., 2018). It is often via these channels that players form teams, sometimes known as ‘guilds’ or ‘clans’, and build friendships within the gaming community (Jia et al., 2015; Ramirez, 2018). However, it is also possible that these communication channels can be an avenue for negativity (Fox et al., 2018). With the possibility for both positive and negative experiences via these channels, there might be varying impacts on people’s wellbeing.

Recent research has begun to explore the impact of MOG engagement on player wellbeing. A recent literature review by Raith et al. (2021) concluded that there is a significant positive relationship between playing MOGs and wellbeing. This specifically included evidence for a positive impact of MOGs on factors such as self-esteem, depression, stress, general affect and skill acquisition. However, there is contrasting literature reporting the negative consequences of MOGs. Among these consequences were negative social interactions, including bullying behaviour (Fox et al., 2018) and gaming ‘addiction’ (King et al., 2016). However, these studies do not focus on the experiences of the non-neurotypical population, and there is emerging anecdotal evidence to suggest that autistic players potentially experience MOGs in a different way to neurotypical players (differentnotdeficient, 2020; Rigney, 2012; Zeron, 2012).

Autism is a lifelong neurodevelopmental condition that affects how people communicate and interact with the world (Autism Around The Globe, 2011). It is characterised by persistent social and communication difficulties, restricted and repetitive patterns of behaviour, and sensory sensitivities (American Psychiatric Association, 2013). Autism impacts people worldwide, and has a prevalence rate globally that is estimated to be 1% (Zeidan et al., 2022). Every autistic individual has their own strengths and areas of challenge, and often these challenges may be exacerbated by living in a world which is not set up for their needs (Raymaker et al., 2020).

The autistic population is at increased risk of experiencing psychological distress (Colvert et al., 2021; Kannabiran & McCarthy, 2009), with research from an autism charity suggesting that almost 80% of autistic adults experience mental health difficulties at some point in their lives, compared to around 25% of the neurotypical population (Autistica, n.d.). This difference may be partially explained by an increased vulnerability to negative life events (e.g. employment difficulties, financial hardship, domestic abuse) (Griffiths et al., 2019). Additionally, autistic individuals are reported to ‘camouflage’ (e.g., attempt to hide behaviours associated with autism) (Hull et al., 2017) due to society's lack of awareness and acceptance of autism (Bradley et al., 2021). Time spent camouflaging is thought to be damaging for mental health (Bradley et al., 2021; Hull et al., 2021). However, having a positive self-identity built through personal characteristics and characteristics shared with social communities, has been identified to offer a possible protective factor for mental health deterioration in autistic people (Cooper et al., 2017). Despite this, Cooper et al. (2017) acknowledges that given the social challenges that autistic people experience, it is likely that building a positive self-identity may be more difficult than for a neurotypical individual. Experiences that contribute to building a positive self-identity for autistic people are under-researched, and this therefore leaves gaps in the understanding of preventative strategies and protective factors for mental health deterioration in the autistic population.

Given the aforementioned impact of MOG engagement for the neurotypical population explored in recent research (Fox et al., 2018; King et al., 2016; Raith et al., 2021), it could be that MOG engagement has a similar impact for the autistic population. For example, Finke et al. (2018) found evidence that MOGs helped autistic individuals with socialisation. However, similar to the literature reported in the neurotypical population, there are also reports that autistic people can experience addictive behaviours in response to the online gaming world (Murray et al., 2021). Therefore, it is helpful to consider what the experiences are of autistic individuals who engage in MOGs, to aid our understanding of the impact this has on psychological wellbeing, and to consider whether MOGs have the potential to act as a protective factor for the mental health of autistic people.

In recent years, there have been a growing number of qualitative studies that explore the experiences of autistic individuals who engage in MOG activity. However, to the author's knowledge, these studies have yet to be systematically reviewed. Reviewing these qualitative studies is important because it will allow for a rich understanding of the advantages and disadvantages of MOG engagement for autistic individuals, particularly in relation to the impact that MOG engagement has on their psychological wellbeing and the potential implications this could have for mental health services. This could help inform further areas that need researching, and holds the potential to influence the way that autistic people are proactively supported within society.

The focus of this review will be on qualitative research that explores the experiences of autistic individuals who engage in MOG activity. There are a higher number of published qualitative studies, and the nature of qualitative research will allow me to gain a rich insight into the experiences of participants. Throughout this review, the term MOG will be used to encompass both MMOGs and smaller scale MOGs. To capture experiences across the lifespan, the review will include studies that focus on individuals of any age. The aim of the review is to understand the experiences of autistic individuals who engage in MOG activity, by exploring both positive and negative aspects of MOGs, to determine what has been discovered about the impact that MOG engagement has on the wellbeing of autistic individuals.

Method

Search Strategy

To conduct a comprehensive search, the following five databases were used: PsychINFO, Medline, CINAHL, ACM Digital Library, and Web of Science. Searches were conducted on 24th August 2023. The SPIDER tool framework was utilised to support the development of the search strategy (Cooke et al., 2012), and has been included table one.

[Insert Table 1.]

Search terms were defined based on scanning literature related to the concepts in the review and using test searches. Additionally, thesaurus functions on the databases were employed where applicable. Free-text and thesaurus search terms were combined in those databases which had a thesaurus function. An additional search on Google Scholar was conducted to screen for grey literature. The Google Scholar search used a narrower search than those on other databases due to the functionality of the search tool and because Google Scholar was only utilised to find grey literature, rather than as a key database in the comprehensive search. The full search strategy has been included in table two.

[Insert Table 2.]

Inclusion and Exclusion Criteria

The following criteria were applied to papers returned by the systematic search, to determine their eligibility for inclusion:

- Qualitative studies or mixed methods studies where the qualitative data could be extracted.
- Participants of any age to capture a comprehensive understanding of the research across a lifespan perspective. Capturing experiences across the lifespan can help us to understand the impact of age on experiences of MMO engagement.
- Data focused on the experiences of autistic individuals.
- Data related to multiplayer online games (E.g. computer games, console games), or where the data on the multiplayer element of the games could be extracted.

- Studies where participants were undergoing a game-based intervention have been included if the game-based intervention met the above multiplayer criteria, and the participants were not in the same room as those people they were interacting with whilst in the virtual game environment.
- Studies found within the grey literature were included due to the small amount of peer-reviewed research available in the area to ensure comprehensive coverage of the topic.

The following exclusion criteria were applied:

- Studies that included games that were classed as ‘serious games’ were not included as the purpose of these games is different to games which are designed for entertainment (Ritterfeld et al., 2009).
- Papers that were neither published, nor translated to, English Language.

Screening

The search process followed PRISMA guidelines (Page et al., 2021) and a PRISMA flow diagram has been included (Figure 1).

[Insert Figure 1.]

The search produced 825 papers, of which 290 duplicate papers were removed. The titles of the remaining 535 papers were screened for relevancy. Thirty-two papers were retrieved for further screening of the abstract. Of these, a further 23 were excluded as they did not meet the inclusion criteria. Due to the limited amount of research in the field, it was decided that an additional narrow search would be run on Google Scholar to capture any missing grey literature. This search returned 12 results. Of these, eight were duplicates of those found on previous databases. The four remaining papers were screened and one was identified for inclusion. A further paper was found from hand searching the reference lists of the 10 papers identified for inclusion. This meant that 11 papers were included in the review. A summary of the 11 papers included is provided in table three.

[Insert Table 3.]

Quality Assessment

A quality assessment of all 11 papers included in the review was conducted using the Critical Appraisal Skills Programme (CASP) qualitative studies checklist (*Critical Appraisal Skills Programme*, 2022). This tool was chosen as it was developed for the quality appraisal of qualitative studies and CASP is a widely used tool for critical appraisal (Majid & Vanstone, 2018). The CASP scores were rated following the process outlined by Duggleby et al. (2010). The scores generated were not used to exclude any papers, but were used as a tool to consider the strengths and limitations of the data being synthesised. To ensure consistency with the scoring using the CASP tool, three papers (27%) were randomly selected to be quality checked by a peer researcher, and the scores were compared. There was an initial agreement rate of 83% between the two researchers. All disagreements in scoring occurred when one researcher had rated ‘can’t tell’ on an item, and the other had scored the item using either ‘yes’ or ‘no’. The two researchers discussed the disagreements and a final consensus was reached.

The purpose of the quality appraisal tool for this review was to allow for the quality of studies to be considered for the purpose of synthesis. Therefore, no papers were excluded because of the quality assessment. However, the scores were used to help determine the strengths and weaknesses of the studies, and the quality limitations have been considered when synthesising the results. These considerations were reflected in the weight each study was given in the results. For example, studies with a low score on the CASP tool, such as Kist & Morgan (2017), were used in support or contrast to themes that were generated from studies with higher scores on the CASP tool. This meant that more emphasis was placed on themes emerging from high-quality studies so that the most reliable findings were given appropriate emphasis in my synthesis. A summary of the quality appraisal for each study has been included in table four.

Additionally, one of the papers found within the grey literature and included in the review was a Masters level thesis project. This paper had not undergone the peer review process, and the quality of Master’s theses can vary widely. However, the decision was made to include this paper in the review, as the Master's project was very closely related to the topic of the systematic review and therefore including it allowed for more comprehensive coverage of the available literature. Additionally, the CASP score for this paper indicated that the project maintains a high standard of research with a rigorous methodology, data analysis and process for presenting the findings. Therefore, it was considered that this paper would contribute valuable data and perspectives to the systematic review.

[Insert Table 4.]

The 11 papers in this review included Gallup et al. (2017) and Gallup and Serrianni (2017) by the same author, along with Stone et al. (2019a) and Stone et al. (2019b) by the same author. Whilst the same participants were used in the sets of papers by the same authors, the research aims of the studies varied and therefore it felt important that both studies in each pair were included in the review. Where both studies reported identical concepts, the extracted data were only used once during the analysis. This process helped to ensure all data and interpretations from each paper were included, without undue weight being placed on the experiences of the participants where there was overlap in the data reported.

Furthermore, the research by Stone et al. (2019a) and Stone et al. (2019b) included interviews conducted with teachers. Data from these interviews were not included in the review, as its aim was to understand the experiences of autistic individuals. However, these studies also utilised observations alongside interviews. Direct quotes from these observations were utilised as first order constructs within the present meta-ethnography, as these data could be used to further the aim of first order constructs to capture the experiences of the individual participants in the research (Noblit & Hare, 1988). Interpretations of the observations also fit as second order constructs as they captured the researcher's interpretation and understanding of these experiences.

Five of the 11 papers in this review included children (people under the age of 18 years old). Of these, three studies focused specifically on children. I decided to include these studies as I wanted to capture a comprehensive understanding of the research across the lifespan, as to my knowledge, a systematic review covering research across the lifespan in this topic has not been conducted before. Capturing experiences across the lifespan can help us to understand the impact of age on experiences of MMO engagement.

Data Analysis

The process of reciprocal translation and synthesis within meta-ethnography (Noblit & Hare, 1988) was utilised. This is a widely used approach for synthesising data from qualitative studies. The steps identified by Noblit and Hare (1988), combined with further reading to understand the process fully (Sattar et al., 2021), were followed to complete the analysis and have been summarised in appendix A. A meta-ethnographic approach was appropriate as I was interested in understanding the question qualitatively, and the majority of the research in this field is of a qualitative nature. The selected studies were read multiple times to become familiar with the data. Data extraction occurred into Microsoft Excel Spreadsheets, by pulling out first order constructs (e.g. direct quotes from participants) and second order constructs (e.g. primary author interpretations) from the results and discussion section of each paper. At this stage, the relationships between the studies were considered and data was compared between the studies, which led to the development of new clusters and concepts. The studies were then ‘translated in to one another’ by comparing the concepts to highlight the similarities and differences. Following this, the studies were synthesised together using a reciprocal synthesis approach, leading to a final four themes being created, which were then written in narrative form. Table five demonstrates how the themes from the 11 papers reviewed can be grouped within the themes identified from the meta-synthesis.

[Insert Table 5.]

Results

Relationships in Multiplayer Online Games are Built Through a Platform of Opportunity

Building relationships is something that autistic people often struggle with and is recognised in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) for autism (American Psychiatric Association, 2013). However, it may be that there are elements of MOGs that makes building relationships seems more accessible for autistic people. Participants in one study described that one of their motivations for engaging in MOG activity was because they wanted “to make friends with” other online players (Stone et al., 2019b; Gallup et al., 2016).

From the studies reviewed, some participants described how they “don’t have any friends in the physical environment” (Finke et al., 2018). It would appear that MOGs could help people to build friendships through aiding a development of an understanding of the nature of friendships and how they may operate (Gallup et al., 2017). One participant described friendships as “a mutually beneficial interaction between two people where they care about each other and there is a mutual feeling of trust” (Gallup et al., 2017). Participants shared that MOG engagement has helped them to understand and build in-game relationships because the nature of the games (e.g., completing a challenge or quest over time) allowed them to interact with other players over an extended time period, allowing them to develop trust within the friendship and a mutual understanding of the relationship (Gallup et al., 2017). The shared goal of completing the challenge within the game can also provide more opportunities for repeated interactions than might happen when forming a friendship in the real world (Gallup et al., 2017). Additionally, these types of games were seen as encouraging reciprocal engagements, which were seen as contributing to friendship formation (Stone et al., 2019b).

Another way in which MOGs were reported to contribute to building relationships is by providing communities that autistic people could become part of. Participants expressed that having like-minded individuals involved in MOG activity helped to form a sense of community online, which in turn provided them with opportunities to form friendships with like-minded people globally (Archibald, 2020). The studies reported that MOGs harness a sense of community because they require players to join a team, often referred to as a ‘guild’ or ‘clan’. Being a member of a ‘guild’ within an MOG was described as an opportunity to develop stronger, more intimate relationships, again due to the need to repeatedly communicate and work together to achieve a shared goal (Gallup et al., 2017).

Moreover, MOGs may help people to build relationships by providing them with a platform to practise relationship-building skills. Stone et al. (2019a) suggested that MOGs encourage players to use gestures and initiate interactions using their in-game avatars, and these skills may then be able to be replicated in face-to-face contexts. Additionally, participants were observed to be friendlier in conversations across multiple settings in the real world and virtual world since they began engaging with MOGs (Stone et al., 2019b). This was thought to be a result of developing an understanding of the reciprocal nature of friendships through online interactions.

Despite this, there are elements of the gaming world, such as options to ‘remove friend’ or ‘kick player’ which were observed to be used by participants in the study (Stone et al., 2019b). This meant that instead of developing skills in conflict resolution and managing challenges that come up within relationships in the virtual world, players could opt to take actions that potentially ended or constrained friendships (Stone et al., 2019b). Whilst this was not beneficial for friendships, it also may mean that players do not practise skills in conflict resolution and this may prevent players from developing key skills that may help them to manage difficulties and maintain relationships in the real world.

Multiplayer Online Games are a Platform to Practise and Develop Communication Skills with Reduced Barriers

From reviewing the research, it appears that MOGs support communication through providing multiple ways in which players can communicate. Participants reported that MOG engagement provided opportunities for social interactions through either verbal speech, or text messaging (Gallup et al., 2016; Stone et al., 2019a). This appeared to be helpful in reducing the pressure of reliance on one mode of communication. For example, the text-messaging component that is available in many MOGs was especially beneficial when the participants were unsuccessful in initiating, transmitting and sustaining their social interactions orally or visually (Gallup et al., 2016). This appears to help players continue communication, where in the real world with fewer communication options, they may struggle.

Another way in which MOG engagement might affect communication is through skill development. For example, MOGs require collaboration between players to succeed in the game, encouraging players to communicate through the use of imperative (i.e., commands) or declarative (i.e., making a statement) speech (Stone et al., 2019a). For example, participants were observed making commands such as “follow me”, as well as making statements to their peers such as “I’m going to the end”. This provides opportunities for autistic players to practise communicating in these ways. Additionally, participants reported that MOG play has helped them to learn to be reciprocal in their communication (Gallup et al., 2016). Further to these verbal communication skills, Stone et al. (2019a) found that MOGs supported participants to use non-verbal communication skills, such a virtual gestures (e.g., pointing or giving a high-five using the cursor). This demonstrates that engaging in MOG play could help to develop skills in engaging in reciprocal conversations, and making requests, commands or directing others verbally, along with using non-verbal communication skills.

Delving further into the research helps to understand why MOGs might hold an advantage for developing and practising communication skills. One hypothesis in the research is that MOGs reduce barriers to communication. Gallup et al. (2017) explained that as participants were interacting in a virtual world, they felt they had greater control of their environment. Having greater control over their environment was important to increasing their comfort levels. In turn, their increased comfort levels allowed them to practise communication skills. Further, participants explained that this helped them to “consistently reframe and cope with new experiences” that happened when communicating in face-to-face settings in the real world (Gallup et al., 2017).

Emotional Recognition, Regulation and Expression is Facilitated Through Multiplayer Online Games

The DSM-5 recognises that autistic people often experience difficulties related to recognising, expressing and regulating their emotions (American Psychiatric Association, 2013). Additionally, a common comorbidity within autism is Alexithymia, which is the difficulty identifying and describing one’s own emotions (Ferguson et al., 2023). Multiplayer online games may have features that help to reduce these emotional challenges for autistic individuals. In the studies reviewed, participants described how emoticons within MOG play helped them to recognise emotions both in themselves, and in others (Gallup & Serrianni, 2017). Emoticons are small images, typically of facial expressions, that can be inserted into the game chat box (Gallup & Serrianni, 2017). Participants described being able to select from a range of emoticons, helping them to think about, identify and express their feelings (Gallup et al., 2017). Additionally, participants recognised that the use of emoticons in written text was helpful in them learning to interpret what other people may be feeling (Gallup & Serrianni, 2017). There is not a clear reason that emoticons are helpful within the research reviewed. It may be because the visual element is more concrete and expressive, which reduces ambiguity.

Whilst emoticons were reported to be a helpful tool for recognising and expressing emotions, participants also described expressing their emotions verbally with their peers during MOG play (Gallup & Serrianni, 2017). This was considered to be more accessible than in face-to-face engagements because the virtual world is described by participants as having less barriers to communication. For example, participants explained that the social pressure to make and maintain eye contact in face-to-face situations is a barrier to face-to-face communication that does not exist in a virtual world where participants communicate by audio calls or text (Gallup et al., 2017; Kist & Morgan, 2017; McEvoy, 2017; Pavlopoulou et al., 2022; Stone et al., 2019a). Reducing this barrier through MOG engagement meant participants felt more comfortable to communicate verbally and talk about and express their emotions.

Participants reported that MOG engagement helped them with emotion regulation, and served as a coping strategy for managing difficult emotions. For example, participants talked about how MOG engagement helps to “get out the aggression” and is “cathartic” because the MOG environment provides a “safe place” to let out these emotions (Gallup & Serrianni, 2017), and described the virtual world as a “new world” for them to manage their emotions in (Archibald, 2020). Despite this, one participant described how other players in the MOG environment are an “unknown variable”, and described this unpredictability as a source of stress (McEvoy, 2017). Participants described how interactions can become “unfriendly” (Gallup et al., 2017). This was thought to be a result of the level of anonymity which the virtual world provides (Mazurek et al., 2015). Participants described that this can bring a “reality to the video game” in which it “affect[s] their real life”, causing them to feel upset or angry (Archibald, 2020). Gallup et al. (2017) observed that where these negative interactions occurred, it appeared to allow the participants to practise emotional recognition and regulation skills. Therefore, whilst not all emotions associated with MOG engagement are positive, the experience of a range of emotions appears to help players to develop skills in emotional regulation.

A Sense of Belonging and Self-esteem Contributes to Increased Wellbeing

In the studies reviewed, participants talked about the positive impacts that MOGs had on their wellbeing. They described how they felt more able to be “themselves” in the virtual world and reveal their true identity (Gallup et al., 2017; Pavlopoulou et al., 2022). Being able to reveal their true identity was attributed to how online gaming could foster a sense of belonging, through talking to friends with shared interests (Pavlopoulou et al., 2022). Participants explained that this felt very different to the face-to-face real world, where bullying negatively impacted on their self-image (Gallup et al., 2017). Whilst being able to reveal their true identity was attributed to shared interest, it was not clear from the studies reviewed if this was unique to the virtual world, or if having a shared interest in the face-to-face world can harness the same sense of belonging that positively impacts on wellbeing.

Further to fostering a sense of identity, MOGs also appear to have an impact on developing self-esteem. Multiplayer online games focus on players overcoming difficulties through quests and challenges within the games and acquiring rewards or achievements for completion of tasks (McEvoy, 2017). These elements of game play harboured a sense of mastery and competency (McEvoy, 2017), contributing to the development of self-esteem. Additionally, one participant shared that they have learnt that “if one thing is not working…try a different approach” (Gallup et al., 2017), which helped them to be more confident in themselves overcoming challenges in the real world.

Prior to becoming involved in MOG play, participants reported a level of anxiety which impacted on their wellbeing, typically stemming from social interactions (Gallup & Serrianni, 2017). However, MOGs appear to provide a way in which participants can socially interact with reduced levels of anxiety. Participants reported that talking online whilst gaming is often “easier” (McEvoy, 2017; Pavlopoulou et al., 2022) and “generally a lot more fun” (McEvoy, 2017) than socialising face-to-face. McEvoy (2017) suggested that the reduced anxiety allowed players to gain competence in social interactions, which provided a sense of belonging. Despite this, it is not clear what the mechanism for this difference in anxiety levels is. It could be the aforementioned reduced pressures of virtual interactions, or the increased sense of belonging that MOGs create through the team aspect that contributes to reduced anxiety.

Discussion

This review explored the experiences of autistic individuals who engage in MOG activity. The process of meta-ethnography (Noblit & Hare, 1988) was followed, which generated four themes relating to participants' experiences.

One of the recognised characteristics of autism is difficulties with social communication and interaction (American Psychiatric Association, 2013). The current review demonstrates that there are multiple ways in which engaging in MOG activity positively impacts on communication and relationships. These include providing opportunities to practise communication skills which can then be applied to face-to-face settings, and facilitating players to understand friendships (Gallup et al., 2017). Participants explained that MOG engagement does this by being more "gradual" than interactions in the face-to-face world (Kist & Morgan, 2017) which increases comfort (Gallup et al., 2017; Stone et al., 2019a). Participants also reflected on how this has helped to reduce social isolation, contributing to improved wellbeing (Gallup et al., 2017). Additionally, the wider literature demonstrates that increased skills and opportunities for social interaction has a direct link with improving psychological wellbeing and reducing common mental health difficulties such as anxiety and depression (White & Roberson-Nay, 2009; Whitehouse et al., 2009). In turn, this can lead to a cyclical effect as improved wellbeing often leads to improved cognitive function, and therefore reduced barriers to social interaction (Morgado & Cerqueira, 2018). Where there are reduced barriers to social interaction, there are increased opportunities for friendships to form (Whitehouse et al., 2009), further perpetuating this cycle towards improved psychological wellbeing. As this population is at increased risk of experiencing psychological distress (Colvert et al., 2021; Kannabiran & McCarthy, 2009), pro-actively creating cycles which reduce vulnerability to mental health difficulties is important.

One of the themes identified through reviewing the literature is 'a sense of belonging and self-esteem contributes to increased wellbeing'. The focus of this theme was around participants feeling more able to be "themselves" in the virtual world and reveal their true identity (Gallup et al., 2017; Pavlopoulou et al., 2022) and discusses the factors that lead to this experience. As autistic individuals are reported to ‘camouflage’ (Hull et al., 2017) and time spent camouflaging is thought to be damaging for mental health (Bradley et al., 2021; Hull et al., 2021), this finding is of particular importance for identifying a potential activity that can act as a protective factor for mental health for autistic individuals. Having a positive self-identity built through social communities has been identified to offer a possible protective factor for mental health deterioration in autistic people (Cooper et al., 2017). Therefore, MOGs may play an important role in increasing self-esteem and a sense of belonging, which may contribute to preventing mental health deterioration in autistic people.

The studies included in this review capture perspectives across the lifespan. This has highlighted similarities in the experiences of autistic people who engage in MOG play of all ages. Particular similarities appear in the ways that MMOs support relationship formation (Gallup et al., 2017; Stone et al., 2019b) and in the ways that all ages appear to value multiple platforms of communication (Gallup et al., 2016; Stone et al., 2019a). However, given the small proportion of studies focusing specifically on children in this review, it highlights a gap in the research, and a need for more research in this field to focus on the experiences of children and young people, to fully understand their experiences and both similarities and differences in their experiences of MOG engagement to adults.

Clinical Implications

The current recommended approach for the treatment of mental health difficulties for autistic people in the United Kingdom (UK) is talking therapies (National Institute for Health and Care Excellence, 2012, 2013). However, there is limited research evidence for the usefulness of talking therapies for autistic individuals (Catchpole, 2023). Some research is beginning to emerge about how mental health professionals can best support autistic individuals (Ingham et al., 2023; Trimmer et al., 2023). However, this research focuses on how therapies developed for the neurotypical population can be adapted, rather than considering broader approaches to mental health support for the autistic population. The learning from MOGs evidenced within this review could be used to improve interventions and skill-building opportunities for autistic people.

However, lots of services are evolving to offer more flexibility in the approaches that are being offered, particularly in the area of telemedicine, which some autistic people have reported to be beneficial when compared with face-to-face therapy (Nohelty et al., 2021). Additionally, there has been a small amount of research into the field of virtual reality use for providing mental health support to autistic individuals (Emmelkamp & Meyerbröker, 2021; Mesa-Gresa et al., 2018). Given that participants in this review reported that talking in the virtual world was much easier for them than the real world because it removed the pressure of non-verbal communication (e.g., having to make and maintain eye contact), it can be implied that a ‘virtual’ approach to mental health support could be beneficial and more accessible for the autistic population.

Participants in this review reported that MOGs provided them with a sense of community. However, it may be that the ways in which a community is experienced by autistic individuals may be different to that of the neurotypical population, and this is not understood through this review. A next step for researchers might be to understand what factors contribute to a sense of ‘community’ for autistic people. Further work could then be done clinically to promote a sense of community for autistic individuals, which in turn is likely to protect their psychological wellbeing. This will help clinical psychologists have more of a community focus to their work, which is increasingly encouraged by The British Psychological Society (2018).

Given the current demand for mental health services in the UK (Care Quality Commission, 2022), particularly for services specific for autistic people (Camm-Crosbie et al., 2019), it is important that proactive strategies are identified that may prevent mental health difficulties occurring. Investing resource into proactive strategies may reduce the number of people requiring referrals to mental health services. This will reduce the strain currently being placed on mental health services in the UK, which is likely to lead to earlier intervention for those who are referred, which is known to be important for outcomes (Membride, 2016). As the participants in this review suggest that MOGs can act as a protective factor for their mental health, MOGs could be used clinically as a protective factor to prevent mental health deterioration in autistic people, and therefore reduce the number of autistic people requiring a referral to mental health services.

One way in which MOGs are set up to harness the aforementioned benefits is through the nature of having a range of communication options (e.g., voice only chat, text chat, emoticons, avatar gestures), which participants explained reduces pressure on non-verbal communication such as eye contact. This reduced pressure removed a barrier to socialisation, allowing them to practise and develop skills. Other recreational activities may be able to meet the same needs for autistic individuals, by having an alternative focus for eye contact (e.g., table-top board games). Further exploration of this may help gain an understanding of what proactive community strategies could be offered to autistic people to support them in increasing their general wellbeing. This could then be used clinically to support autistic people by utilising activities that reduce barriers to communication within the therapeutic setting.

Strengths and Limitations of the Review

One strength of synthesising qualitative papers is that this has allowed for a rich insight into the advantages and disadvantages of MOG engagement for autistic individuals. This has led to the development of ideas for how clinical psychologists might be able to best support autistic people, along with proactive strategies that might reduce the number of autistic individuals requiring a referral to mental health services.

One limitation of this review is the high proportion of male participants. As there is a male to female gender difference in diagnosis of roughly 3:1 in the general population (Loomes et al., 2017), one could conclude that the sample is representative of the wider population. However, there is a growing body of research that indicates the challenges and barriers to receiving a diagnosis of autism in the female population (Hamdani et al., 2023; Leedham et al., 2020; Lockwood Estrin et al., 2021; Rogan, 2023; Zener, 2019). This could mean that the gender difference in diagnosis can be explained by the diagnostic process, rather than a true representation of a gender difference in the number of autistic people. Therefore, it may be that this research also reflects this skew. To avoid this, researchers might want to consider self-diagnosis within participation criteria.

Another limitation of this review is the use of the quality appraisal tool. Whilst a well-recognised tool was utilised, and a peer reviewed a sample of the papers using the same tool to ensure for consistency and reduce the impact of subjectivity, no papers were excluded from the study based on the quality appraisal score it received. This meant that some papers included in this review were deemed low quality. However, this was taken into account during the analysis phase of the review through comparison of data from lower-appraised papers to higher-appraised papers. This information was then used when considering the contributions of each paper during the development of themes. A summary of the CASP rating can be found in table four.

A final limitation that needs to be considered is that only studies that were published in English could be accessed. This limited the population in the review to western samples and therefore, may have missed cultural differences in the experiences of autistic individuals. This means that the findings of the review cannot be generalised cross-culturally.

Future Studies

The current review suggests that MOG engagement is useful for autistic people and has positive consequences for their wellbeing. Future research into the specific elements of MOG engagement that are useful could increase the understanding in this field. This could be done using a qualitative approach through interviewing autistic people who engage in MOG play to understand their experiences of which elements of MOGs they find to be useful. This would build on the current knowledge from existing research. Once the elements that are useful within MOGs are understood, these could be tested to determine the effectiveness within mental health interventions, and other avenues of accessing these benefits could be explored to make them more accessible for people who do not have access to the technology that allows them to engage in MOG play.

Participants expressed feeling part of a community within MOG engagement. Future research could consider what ‘community’ means to autistic individuals, as this is important for being able to harness a community, which could act as a protective factor against psychological distress. This might be done using a qualitative approach by interviewing autistic individuals to gain a rich insight into their understanding and experiences of what community means to them. Further, it might be important to collect demographic details of participants so that data can be analysed in a way that would demonstrate whether the view of ‘community’ varies by characteristics such as age and gender.

Given the difficulties that autistic people often experience with emotions and that emotional recognition and expression is an important part of the therapeutic process, the aforementioned benefits of emoticons could be utilised in the therapeutic environment to help autistic individuals with emotional expression and recognition. This may increase levels of therapeutic engagement and in turn, increase outcomes for autistic individuals, who are a population known currently to benefit less from therapeutic interventions (El Baou et al., 2023). There is some evidence that emoticons can be helpful in the context of text-therapy (Nusrat & Huang, 2021), and evidence which suggests that emoticons can be helpful for supporting autistic individuals to communicate about their emotions with their families (Sharma et al., 2019). However, there does not appear to be any published research into using emoticons in the therapeutic environment to help autistic individuals with emotional expression and recognition, so future research is needed to explore this further.

Conclusion

This review considered the experiences of autistic individuals who engage in MOG activity. The themes identified highlight similarities in the experiences that autistic individuals have when they engage in MOG play. The review highlighted that MOGs provide opportunities for players to interact in a way that feels less pressured than the face-to-face world. This has positive implications for developing social skills and forming relationships with others. Additionally, participants reported that MOGs provided them with a sense of community, which allowed them to reveal their identities, and contributed to increased self-esteem and improved psychological wellbeing. This could have implications for both preventing mental health deterioration, and for how we support autistic people who require psychological intervention. Whilst areas for future research have been identified, it is hoped that the findings from this review could be used clinically to help psychologists to think about how they can adapt the ways in which they work to be more suitable for autistic individuals. Additionally, it is hoped that this review has highlighted the need for proactive interventions for autistic individuals and enables psychologists to dedicate resources to encouraging community engagement for autistic individuals.

Overall, autistic individuals experienced MOG engagement to be helpful for understanding and forming relationships, as well as developing skills in relation to communication and emotions. They appear to do this via harnessing a sense of community that helps autistic people feel more able to be themselves and promotes self-esteem, which contributes to improved wellbeing. Further, defining the useful elements of MOGs has the potential to influence the development of more effective interventions that can help autistic people build essential skills and improve their wellbeing.

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Tables and Figures

Table 1

The SPIDER tool framework used to support the development of the search strategy.

	Sample	**Phenomenon of Interest**	**Design**	**Evaluation**	**Research Type**
Description	Participants with a diagnosis of autism.	The impact of engaging in multiplayer online games.	Any qualitative or mixed methods where the qualitative data can be extracted.	Understanding the experiences.	Qualitative or mixed methods where the qualitative data can be extracted.

Table 2

Search terms used in systematic search.

Database	**Concept 1**	**Concept 2**
PsychINFO	(DE "Autism Spectrum Disorders" OR DE "Neurodiversity") OR TI ("ASD" OR "ASC" OR ((Neurodev* OR neuro-dev* OR Autis*) N3 (Disorder* OR disabilit* OR condition*)) OR Autis* OR Neurodiv* OR Neuro-div* OR Asperger) OR AB ("ASD" OR "ASC" OR ((Neurodev* OR neuro-dev* OR Autis*) N3 (Disorder* OR disabilit* OR condition*)) OR Autis* OR Neurodiv* OR Neuro-div* OR Asperger*)	(DE “Computer Games”) OR (DE “Digital Gaming”) OR "MMORPG*" OR “MMOG” OR "massively multiplayer rpg" OR "Online role play*" OR "MMO" OR "massive multiplayer online" OR "multiplayer online" OR "online gam*" OR "online board gam*" OR "online role play gam*" OR "online gam*" OR "Collaborative online" OR "multiplayer digital gam*" OR "cooperative online gam*" OR "co-op gam*" OR "co-op online" OR “cooperative gam*” OR "online cooperative" OR "collaborative gam*" OR "online collaborative" OR “collaborative online” “computer gam*” OR “VR gam*” OR “virtual

Database	Concept 1	Concept 2
		reality gam*" OR "virtual multiplayer" OR "virtual gam*" OR "video gam*" OR "digital gam*" OR "console gam*" OR "video gam*"
Medline	(MH "Autistic Disorder") OR (MH "Asperger Syndrome") OR (MH "Autism Spectrum Disorder+") OR TI ("ASD" OR "ASC" OR ((Neurodev* OR neuro-dev* OR Autis*) N3 (Disorder* OR disabilit* OR condition*)) OR Autis* OR Neurodiv* OR Neuro-div* OR Asperger) OR AB ("ASD" OR "ASC" OR ((Neurodev* OR neuro-dev* OR Autis*) N3 (Disorder* OR disabilit* OR condition*)) OR Autis* OR Neurodiv* OR Neuro-div* OR Asperger*)	(MH "Video Games+") OR "MMORPG*" OR "MMOG" OR "massively multiplayer rpg" OR "Online role play*" OR "MMO" OR "massive multiplayer online" OR "multiplayer online" OR "online gam*" OR "online board gam*" OR "online role play gam*" OR "online gam*" OR "Collaborative online" OR "multiplayer digital gam*" OR "cooperative online gam*" OR "co-op gam*" OR "co-op online" OR "cooperative gam*" OR "online cooperative" OR "collaborative gam*" OR "online

Database	Concept 1	Concept 2
		collaborative" OR “collaborative online” “computer gam*” OR “VR gam*” OR “virtual reality gam*” OR “virtual gam*” OR “virtual multiplayer” OR “video gam*” OR “digital gam*” OR “console gam*”
Cinahl	(MH "Autistic Disorder") OR (MH "Asperger Syndrome") OR (MH "Neurodiversity") OR TI ("ASD" OR "ASC" OR ((Neurodev* OR neuro-dev* OR Autis*) N3 (Disorder* OR disabilit* OR condition*)) OR Autis* OR Neurodiv* OR Neuro-div* OR Asperger) OR AB ("ASD" OR "ASC" OR ((Neurodev* OR neuro-dev* OR Autis*) N3 (Disorder* OR	(MH “Video Games+”) OR OR"MMORPG*" OR “MMOG” OR "massively multiplayer rpg" OR "Online role play*" OR "MMO" OR "massive multiplayer online" OR "multiplayer online" OR "online gam*" OR "online board gam*" OR "online role play gam*" OR "online gam*" OR "Collaborative online" OR "multiplayer digital gam*" OR "cooperative online gam*" OR "co-op gam*" OR "co-op

Database	**Concept 1**	**Concept 2**
	disabilit* OR condition*)) OR Autis* OR Neurodiv* OR Neuro-div* OR Asperger*)	online" OR “cooperative gam*” OR "online cooperative" OR "collaborative gam*" OR "online collaborative" OR “collaborative online” “computer gam*” OR “VR gam*” OR “virtual reality gam*” OR “virtual gam*” OR “virtual multiplayer” OR “video gam*” OR “digital gam*” OR “console gam*”
Web of Science	((TI=("Neurodev*" OR "Autis*" OR “Neurodiv*” OR “Asperger” OR “ASC” OR “ASD”)) OR (AB= ("ASD" OR "ASC" OR “Neurodev*” OR “neuro-dev*” OR “Autis*” OR “Neurodiv*” OR “Neuro-div*” OR “Asperger*”)))	AND (AB= ("MMORPG*" OR “MMOG” OR "massively multiplayer rpg" OR "Online role play*" OR "MMO" OR "massive multiplayer online" OR "multiplayer online" OR "online gam*" OR "online board gam*" OR "online role play gam*" OR "online gam*" OR "Collaborative online" OR "multiplayer digital

Database	Concept 1	Concept 2
		gam*" OR "cooperative online gam*" OR "co-op gam*" OR "co-op online" OR “cooperative gam*” OR "online cooperative" OR "collaborative gam*" OR "online collaborative" OR “collaborative online” “computer gam*” OR “VR gam*” OR “virtual reality gam*” OR “virtual gam*” OR “virtual multiplayer” OR “video gam*” OR “digital gam*” OR “console gam*” OR “video gam*”))
ACM DL	Title:("Neurodev*" OR "Autis*" OR "Neurodiv*" OR "Asperger" OR "ASC" OR "ASD") OR Abstract:("ASD" OR "ASC" OR "Neurodev*" OR "neuro-dev*" OR "Autis*"	Abstract:("MMORPG*" OR “MMOG” OR "massively multiplayer rpg" OR "Online role play*" OR "MMO" OR "massive multiplayer online" OR "multiplayer online" OR "online gam*" OR "online board gam*" OR "online

Database	Concept 1	Concept 2
	OR "Neurodiv*" OR "Neuro-div*" OR "Asperger*")	role play gam*" OR "online gam*" OR "Collaborative online" OR "multiplayer digital gam*" OR "cooperative online gam*" OR "co-op gam*" OR "co-op online" OR “cooperative gam*” OR "online cooperative" OR "collaborative gam*" OR "online collaborative" OR “collaborative online” “computer gam*” OR “VR gam*” OR “virtual reality gam*” OR “virtual gam*” OR “virtual multiplayer” OR “video gam*” OR “digital gam*” OR “console gam*” OR “video gam*”)

N.B. A search of the grey literature was also carried out on Google Scholar using the following search terms in the title:

Exact phrase: MMORPG|MMOG|multiplayer|MMO

At least one of the words: Autism|Asperger|ASC|ASD

Table 3

The Papers Included for Review.

Study Reference	Study Location	Sample	Diagnosis	Measures	Reasonable Adjustments	Analysis	Main findings
Archibald (2020)	Canada	Autistic adults (N= 9). Age: 19-36 years. Gender identity: 3 female, 5 male, 1 non-binary. Ethnicity: Not reported.	Self-reported professional diagnosis.	Interviews.	Interview schedule in advance. Flexibility to turn off camera or type answers.	Phenomenological analysis.	Connection between online gaming and communication.
Finke et al. (2018)	USA	Autistic adults (N= 10). Age: 18-24 years. Gender identity: 1 female, 9 male. Ethnicity: 9 White not Hispanic or Latino, 1 Hispanic or Latino.	Self-reported professional diagnosis.	Interviews.	Not stated.	Grounded theory.	Positive impact on their lives and their development.
Gallup and Serrianni (2017)	USA	Autistic adults (N= 5). Age: 19-24 years. Gender identity: 2 female, 3 male. Ethnicity: Caucasian.	Professional diagnosis.	Interviews.	Not stated.	Phenomenological analysis.	Potential to support social skills, friendship development and emotional awareness and expression.

Study Reference	Study Location	Sample	Diagnosis	Measures	Reasonable Adjustments	Analysis	Main findings
Gallup et al. (2016)	USA	Autistic people (N= 3). Age: 16-21 years. Gender identity: 3 males. Ethnicity: Not stated.	Professional diagnosis.	Interviews.	Not stated.	Qualitative emergent coding.	Participants articulated the desire to socialise, interact, and frequently communicate in a virtual environment; challenges with being misunderstood; issues with identification and perceptions of friends; and awareness of rules specific to face-to-face and virtual environments.
Gallup et al. (2017)	USA	Autistic adults (N=5). Age: 19-24 years. Gender identity: Not stated. Ethnicity: Caucasian.	Professional diagnosis.	Interviews.	Not stated.	Transcendental phenomenology.	Recognition and reciprocation of emotions, friendship development, and role identification.
Kist and Morgan (2017)	USA	Case study of an Autistic adult. Age: 21 years. Gender identity: Male. Ethnicity: Not stated.	Self-reported professional diagnosis.	Interviews.	Extended interview periods to build rapport. Interview with caregiver present.	Constant comparative analysis.	Increase communication skills.

Study Reference	Study Location	Sample	Diagnosis	Measures	Reasonable Adjustments	Analysis	Main findings
Mazurek et al. (2015)	USA	Autistic adults (N= 58). Age: 17-25 years. Gender identity: 50 males, 8 not stated. Ethnicity: 50 Caucasian, 8 not stated.	Professional diagnosis.	Interviews.	Not stated.	Thematic analysis.	Perceived benefits of video game use (e.g., social connection, stress reduction) as well as perceived negative effects (e.g., time use, addictive potential).
McEvoy (2017)	USA	Autistic adults (N= 5). Age: 19-24 years. Gender identity: Males. Ethnicity:4 Caucasian, 1 Asian.	Self-reported professional diagnosis.	Interviews.	Choice of interview options (i.e. face-to-face or remote).	Thematic coding.	Themes; socialisation, competence and immersion occurring in the game.
Pavlopoulou et al. (2022)	United Kingdom.	Autistic children (N= 12). Age: 13-15 years. Gender identity: Males. Ethnicity: 11 White British, 1 Black British.	Self-reported professional diagnosis.	Interviews.	Participants given extra time to answer questions.	Thematic analysis.	Three key themes: Agency and a sense of belonging, emotion regulation, and acknowledgement of the differing perceptions between young people and carers.

Study Reference	Study Location	Sample	Diagnosis	Measures	Reasonable Adjustments	Analysis	Main findings
Stone et al. (2019a)	Australia.	Autistic children (N=3). Age: 9-10 years. Gender identity: Males. Ethnicity: Not stated.	Professional diagnosis.	Observations and interviews.	Not stated.	Multimodal analysis.	Engage in reciprocal conversations, to share information, to make requests, to give commands and to direct others. Additionally, screen-based written texts were used to attract the attention of others, send messages, communicate rules and maintain engagements with others within the students' physical and virtual worlds.
Stone et al. (2019b)	Australia.	Autistic children (N= 3). Age: 9-10 years. Gender identity: Males. Ethnicity: Not stated.	Professional diagnosis.	Observations and interviews.	Not stated.	Inductive coding and multimodal analysis.	Supported students' use of speech to engage in conversations about their friendships, and to share gaming experiences with their offline and online friends. Difficulties reported; students engaged in verbal disagreements about video gaming discourses.

Table 4

Summary of CASP scores of the Studies Included for Review.

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total
Archibald (2020)	Yes	Yes	3	3	3	3	3	3	3	3	24
Finke et al. (2018)	Yes	Yes	3	3	3	1	3	3	3	3	22
Gallup and Serrianni (2017)	Yes	Yes	3	2	2	1	1	2	2	2	15
Gallup et al. (2016)	Yes	Yes	3	1	2	1	1	2	2	2	14
Gallup et al. (2017)	Yes	Yes	3	3	2	3	1	3	1	3	19
Kist and Morgan (2017)	No	Yes	1	1	2	1	1	2	2	1	11
Mazurek et al. (2015)	Yes	Yes	3	3	3	1	1	2	3	3	19
McEvoy (2017)	Yes	Yes	3	3	3	3	3	3	3	3	24
Pavlopoulou et al. (2022)	Yes	Yes	3	3	3	1	3	1	3	3	20
Stone et al. (2019a)	Yes	Yes	3	2	2	1	3	3	3	3	20

Stone et al. (2019b)	Yes	Yes	3	2	3	1	2	2	3	3	19

N.B. The CASP scores were rated following the process outlined by Duggleby et al. (2010): 1 point= a weak score was assigned, 2 points= a moderate score was assigned, 3 points= a strong score was assigned.

Table 5

Summary of themes reported in the reviewed studies grouped within the themes identified from the meta-synthesis.

Papers Reviewed	**Relationships in Multiplayer Online Games are Built Through a Platform of Opportunity.**	**Multiplayer Online Games are a Platform to Practise and Develop Communication Skills with Reduced Barriers.**	**Emotional Recognition, Regulation and Expression is Facilitated Through Multiplayer Online Games.**	**A Sense of Belonging and Self-esteem Contributes to Increased Wellbeing.**
Archibald (2020)		Transfer of information		
Finke et al. (2018)	Friendship		Emotion Escape and being creative	Functioning and Skill Escape and being creative
Gallup and Serrianni (2017)	Seeking social interaction, defining friendship, and overcoming challenges, to include barriers to friendship Roles in life, increased socialisation, and friendships.	Seeking social interaction, defining friendship, and overcoming challenges, to include barriers to friendship Comfort in socialising through a virtual environment. Roles in life, increased socialisation, and friendships.	Emotional awareness	Skills learned and generalised.
Gallup et al. (2016)	Socialisation with friends and development of new friends	Comfort and overcoming barriers.	Awareness of self and others with recognition of emotions.	

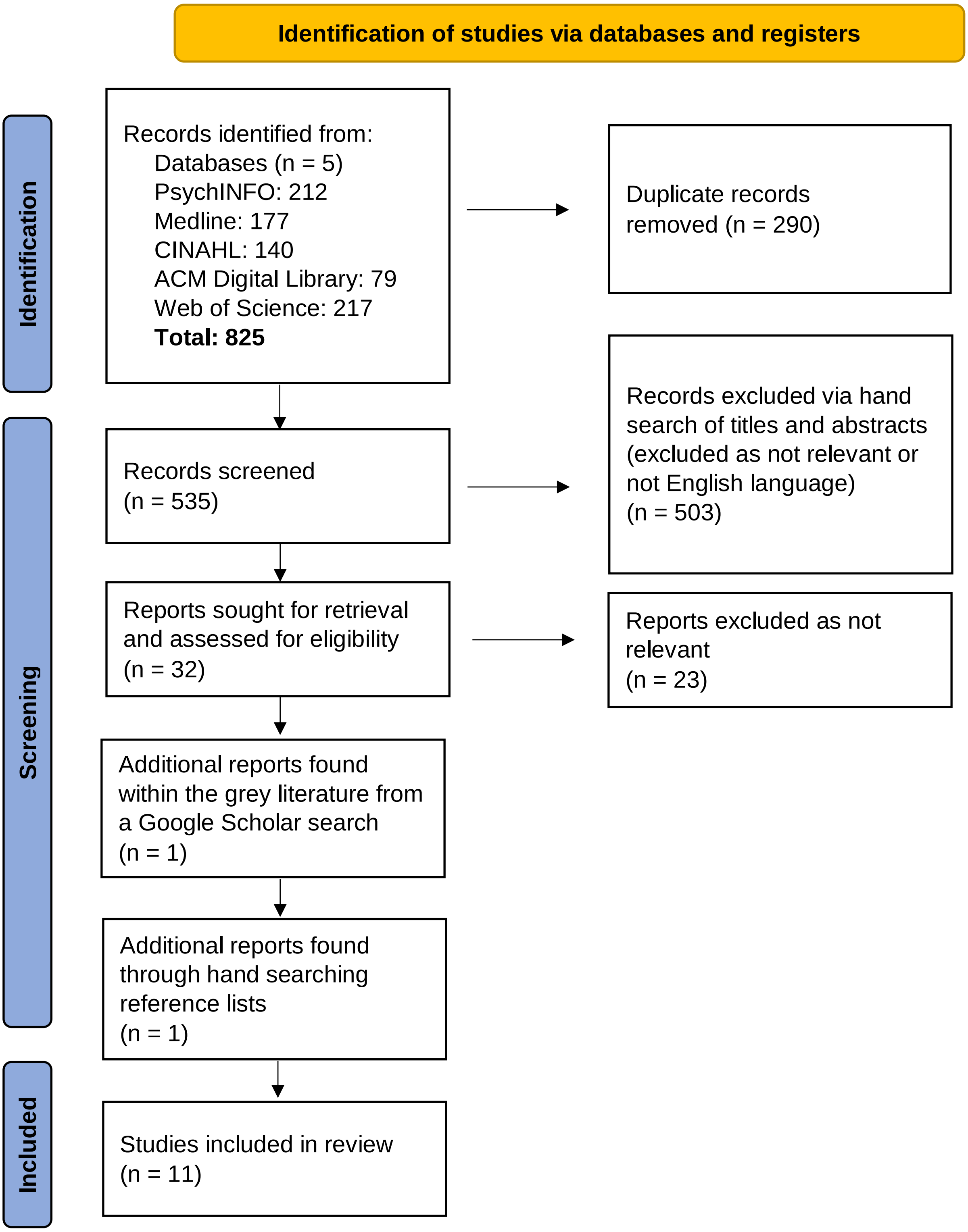
Papers Reviewed	**Relationships in Multiplayer Online Games are Built Through a Platform of Opportunity.**	**Multiplayer Online Games are a Platform to Practise and Develop Communication Skills with Reduced Barriers.**	**Emotional Recognition, Regulation and Expression is Facilitated Through Multiplayer Online Games.**	**A Sense of Belonging and Self-esteem Contributes to Increased Wellbeing.**
	through virtual connections. Learning to interact in a virtual environment and generalising skills to a face-to-face setting.			
Gallup et al. (2017)	Seeking social interactions, defining friendship, and overcoming barriers. Roles in socialisation, friendship and life interaction.	Comfort level of interacting in a virtual environment.	Emotional recognition.	Skills learned and generalised.
Kist and Morgan (2017)	Impact on existing face-to-face relationships and social interactions. Online friendships and social interactions as comfortably distant. Online friends transition to real-life friends.	Online friendships and social interactions as comfortably distant. Role of technology on social development.		
Mazurek et al. (2015)	Reasons for video game play.		Reasons for video game play.	
McEvoy (2017)	Socialisation.		Immersion.	Competence.

Papers Reviewed	**Relationships in Multiplayer Online Games are Built Through a Platform of Opportunity.**	**Multiplayer Online Games are a Platform to Practise and Develop Communication Skills with Reduced Barriers.**	**Emotional Recognition, Regulation and Expression is Facilitated Through Multiplayer Online Games.**	**A Sense of Belonging and Self-esteem Contributes to Increased Wellbeing.**
Pavlopoulou et al. (2022)			Learning how to switch off: regulating emotions through gaming and escapism.	Being your own boss: a sense of agency and belonging.
Stone et al. (2019a)	Opportunities to support speech for social interactions.	Opportunities to support speech for social interactions.		
Stone et al. (2019b)	Friendships.			

N.B. There are a some themes from some of the studies not included in this table as the data was excluded as it did not meet the inclusion criteria for the review (e.g., related to parent or teacher perspectives).

Figure 1

A flow diagram representing the search process.



Appendices

Appendix A

Summary of the Seven Phases of Meta-ethnography.

Below is a summary of the seven phases of meta-ethnography, created from reading papers by Noblit and Hare (1988) and Sattar et al. (2021).

Phase 1: The initial phase requires the researcher to determining a gap in the literature to identify a question to be answered. It is at this stage that the researcher considers the appropriateness of using a meta-ethnographic approach. A Meta-ethnographic approach is suitable when researchers are interested in conceptual or theoretical understandings. The researcher also needs to consider whether synthesis of the literature can contribute valuable knowledge.

Phase 2: Inclusion and exclusion criteria are decided and inform the search terms. These are likely to be decided by scoping the current literature. The search terms are used to conduct a systematic search and these are input into the selected database(s) and results from the search are screened for eligibility for inclusion. Quality appraisal of studies can take place at this stage.

Phase 3: The selected studies are read multiple times to become familiar with the data. Data is then extracted from the studies into a data extraction table.

Phase 4: At this stage, the relationships between the studies are considered and data is compared between the studies. This will lead to the development of new clusters and concepts.

Phase 5: The studies are then ‘translated in to one another’ by comparing the concepts to highlight the similarities and differences.

Phase 6: In this stage, the studies are synthesised together using either reciprocal or refutational synthesis, or a lines of argument synthesis.

Phase 7: The synthesis is then expressed in a summary of findings. Strengths and limitations and recommendations and conclusions are included.

Appendix B

Author Guidelines for *Autism* Journal.

1. What do we publish?

1.1 Aims & Scope

Before submitting your manuscript to Autism, please ensure you have read the Aims & Scope.

There is no need to submit a pre-submission enquiry to the journal, and in fact we discourage this as our scope is clearly stated at the link above.

It is journal policy for all submitted manuscripts to be screened by an Editor who will decide whether to send the manuscript for review. In this screening process, Editors will focus on:

- fit with the journal aims and scope, and listed Article Types (see below)
- relevance to autistic people's quality of life
- justification of the research question
- relevance and quality of the methods and analysis methods for the topic under study
- validity of the conclusions in relation to the methods and findings
- quality of the writing
- potential for practical impact

1.2 Article Types

The Journal considers the following kinds of article for publication:

Research Reports. Full papers describing new empirical findings. These papers may present quantitative and/or qualitative data. In each case, the methods should be carefully selected to address the research question being posed, with due justification being given for: needfulness of the research; relevance to autistic people's quality of life; appropriateness of the sample size and diversity; quality of the methods; robustness of the analysis methods; validity of the conclusions.

Fundamental or basic scientific discoveries can be considered for publication but need to make a convincing case for relevance to autistic people's lives, especially if future implementation of the discovery is still far off.

Research Reports are generally restricted to a maximum of 6,000 words, including all elements (title page, abstract [200 words maximum], notes, tables, text), but excluding references. Editors may ask authors to make certain cuts before sending the article out for review

Before submitting a Research Report, please make sure to review the author guidelines, and especially section 2.8 for our reporting expectations.

Review Articles. General reviews that provide a synthesis of an area of autism research. These will normally be systematic but narrative and/or focused reviews can be considered if the authors make a convincing case for their ability to address a gap in knowledge.

Review Articles are generally restricted to a maximum of 6,000 words, including all elements (title page, abstract [200 words maximum], notes, tables, text), but excluding references. Editors may ask authors to make certain cuts before sending the article out for review.

Before submitting a Review, please make sure to review the author guidelines and especially section 2.8 for our reporting expectations.

Short Reports. Brief papers restricted to a maximum of 2,000 words with no more than two tables. The title should begin with 'Short Report'. Short reports also report empirical findings from quantitative and / or qualitative data, but these may be preliminary, low-impact, or otherwise less substantial than a Research Report. Another reason to submit a Short Report is if your rationale, methods and findings are simple and neat. If your paper can be reported within the 2000 word limit we would encourage you to do so.

Letters to the Editors. Readers' letters should address issues raised by articles published in our journal, or issues in the field of autism research more generally. The issues should be contextualised within the literature to permit readers to draw general conclusions. Letters might cover: discussions of existing debates in the literature, articulations of new or controversial ideas, comments on work published in our journal, theoretical perspectives, methodological or conceptual critiques, The decision to publish is made by the Editors, in order to ensure a timely appearance in print. Letters should be no more than 1000 words, with no tables and a maximum of 5 references.

Registered Reports, Pre-Data or Post-Data:

There are two types of Registered Reports:

- Registered Reports – Pre-Data, i.e., before any data have been gathered
- Registered Reports – Post-Data, i.e., before already existing data have been examined and analysed.

These submissions are reviewed in two stages. In Stage 1, a study proposal is considered for publication prior to data collection and/or analysis. Stage 1 submissions should include a complete Introduction, Methods, and Proposed Analyses. High-quality proposals will be accepted in principle before data collection and/or data analysis commences. Once the study is completed, the author will finish the article including Results and Discussion sections (Stage 2). Publication of the Stage 2 submission is guaranteed as long as the approved Stage 1 protocol is followed and the conclusions are appropriate. Full details can be found here. The Journal's manuscript requirements should be adhered to for the stage 2 submission.

1.3 Writing your paper

The Sage Author Gateway has some general advice and on how to get published, plus links to further resources. Sage Author Services also offers authors a variety of ways to improve and enhance their article including English language editing, plagiarism detection, and video abstract and infographic preparation.

1.3.1 Make your article discoverable

When writing up your paper, think about how you can make it discoverable. The title, keywords and abstract are key to ensuring readers find your article through search engines such as Google. For information and guidance on how best to title your article, write your abstract and select your keywords, have a look at this page on the Gateway: How to Help Readers Find Your Article Online.

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2. Editorial policies

2.1 Peer review policy

Autism operates a strictly anonymous peer review process in which the reviewer's name is withheld from the author and, the author's name from the reviewer. The reviewer may at their own discretion opt to reveal their name to the author in their review but our standard practice is for both identities to remain concealed. Each new submission is carefully read by one of the Editors to decide whether it has a reasonable chance of getting published, consulting with other Editors if and when they feel it is necessary. Our Editors strive to make this initial review within two weeks after submission, so that authors do not have to wait long for a rejection. In some cases, feedback may also be provided on how to improve the manuscript, or what other journal would be more suitable. The criteria used by the Editors when determining what to reject or send for review as described here [https://journals.sagepub.com/author-instructions/aut#Aims-Scope]. Each manuscript which passes this initial screening, is sent out for peer review by at least two referees. All manuscripts are reviewed as rapidly as possible, and an editorial decision is generally reached within (e.g.) 6-8 weeks of submission.

2.2 Authorship

All parties who have made a substantive contribution to the article should be listed as authors. Principal authorship, authorship order, and other publication credits should be based on the relative scientific or professional contributions of the individuals involved, regardless of their status. A student is usually listed as principal author on any multiple-authored publication that substantially derives from the student's dissertation or thesis.

Please note that AI chatbots, for example ChatGPT, should not be listed as authors. For more information see the policy on Use of ChatGPT and generative AI tools.

2.3 Acknowledgements

All contributors who do not meet the criteria for authorship should be listed in an Acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, or a department chair who provided only general support.

Please supply any personal acknowledgements separately to the main text to facilitate anonymous peer review.

2.3.1 Third party submissions

Where an individual who is not listed as an author submits a manuscript on behalf of the author(s), a statement must be included in the Acknowledgements section of the manuscript and in the accompanying cover letter. The statements must:

- Disclose this type of editorial assistance – including the individual's name, company and level of input

- Identify any entities that paid for this assistance
- Confirm that the listed authors have authorized the submission of their manuscript via third party and approved any statements or declarations, e.g. conflicting interests, funding, etc.

Where appropriate, Sage reserves the right to deny consideration to manuscripts submitted by a third party rather than by the authors themselves.

2.4 Funding

Autism requires all authors to acknowledge their funding in a consistent fashion under a separate heading. Please visit the Funding Acknowledgements page on the Sage Journal Author Gateway to confirm the format of the acknowledgment text in the event of funding, or state that: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Important note: If you have any concerns that the provision of this information may compromise your anonymity, you should withhold this information until you submit your final accepted manuscript.

2.4.1 National Institutes of Health (NIH) funded articles

If you have received NIH funding for your research, please state this in your submission and if your paper is accepted by *Autism* an electronic version of the paper will automatically be sent to be indexed with the National Library of Medicine's PubMed Central as stipulated in the NIH policy.

2.5 Declaration of conflicting interests

Autism encourages authors to include a declaration of any conflicting interests and recommends you review the good practice guidelines on the Sage Journal Author Gateway. In particular, for working reporting on the development or evaluation of interventions the ICJME Conflict of Interest form provides an excellent template for considering a range of potential sources of conflict, and this can be uploaded and submitted with your manuscript if relevant.

Where an Editor of Autism is a lead or contributing author to a paper submitted to publication, the paper is always handled through the peer review process by another member of the Editor team and three reviews are obtained in each case. A statement is also published on each article where this occurs.

2.6 Research ethics and patient consent

Medical research involving human subjects must be conducted according to the World Medical Association Declaration of Helsinki

Submitted manuscripts should conform to the ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals, and all papers reporting animal and/or human studies must state in the methods section that the relevant Ethics Committee or Institutional Review Board provided (or waived) approval. Please ensure that you have provided the full name and institution of the review committee, in addition to the approval number.

For research articles, authors are also required to state in the methods section whether participants provided informed consent and whether the consent was written or verbal.

Information on informed consent to report individual cases or case series should be included in the manuscript text. A statement is required regarding whether written informed consent for patient information and images to be published was provided by the patient(s) or a legally authorized representative.

Please also refer to the ICMJE Recommendations for the Protection of Research Participants

2.7 Clinical trials

Autism conforms to the ICMJE requirement that clinical trials are registered in a WHO-approved public trials registry at or before the time of first patient enrolment as a condition of consideration for publication. The trial registry name and URL, and registration number must be included at the end of the abstract.

2.8 Reporting guidelines

2.8.1 Transparent reporting of trials

The relevant EQUATOR Network reporting guidelines should be followed depending on the type of study. For example, all randomized controlled trials submitted for publication should include a completed CONSORT flow chart as a cited figure and the completed CONSORT checklist should be uploaded with your submission as a supplementary file. Systematic reviews and meta-analyses should include the completed PRISMA flow chart as a cited figure and the completed PRISMA checklist should be uploaded with your submission as a supplementary file. The EQUATOR wizard can help you identify the appropriate guideline.

The What Works Clearinghouse (WWC) guidelines should be followed when submitting in single-case design (SCD) and meet the standards outlined for internal validity of the SCD.

Other resources can be found at NLM's Research Reporting Guidelines and Initiatives

2.8.2 Sample selection and demographic characteristics

Autism now requires authors to report the following information for all Research Reports (including systematic reviews):

i. procedures for sample selection and recruitment; and
ii. major demographic characteristics, including age, gender, race/ethnicity and socioeconomic status.

Including this information will provide greater clarity regarding sample characteristics and generalisability of the findings, even when such characteristics are not used in the analysis (although we encourage investigation of subgroup differences, where possible). It should also encourage researchers to consider the way in which context and culture contribute to their findings.

If authors are unable to report some or all of this information, its absence must be acknowledged with a clear statement of explanation (e.g., “specific data on socioeconomic status and educational attainment levels were not recorded”). Manuscripts that contain neither the required information nor an appropriate statement will be returned prior to consideration by the editors.

2.8.3 Community involvement

Autism encourages research that is actively carried out ‘with’ or ‘by’ members of the Autistic and autism communities (rather than ‘to’, ‘about’, or ‘for’ them), often referred to as ‘co-production’, ‘participatory research’, ‘patient and public involvement’ or ‘integrated knowledge translation’.

We therefore now require authors to include a community involvement statement at the end of the Methods section for Research Reports, outlining whether autistic people or family members, community providers, policy makers, agency leaders or other community stakeholders were involved in developing the research question, study design, measures, implementation, or interpretation and dissemination of the findings. Community members should be duly acknowledged – as authors or in the acknowledgements section – depending on the extent and nature of their contribution. We recommend that authors follow the BMJ’s editorial guidelines for documenting how community stakeholders were involved in their research.

If community members were not involved in the study, authors should state this.

For more details about the reasoning behind this journal requirement, and editorial expectations of authors, please download this FAQs document.

2.9 Data Policy Statement

Autism supports open research practices and FAIR principles. As such encourages authors to share their data wherever possible and submit their data (or a link to it) and where applicable, their syntax/command files for the analyses presented in the contribution. Authors can make data available through a third party data repository or on the journal website as a supplementary data file.

If cited data is restricted (e.g. classified, require confidentiality protections, were obtained under a non-disclosure agreement, or have inherent logistical constraints), authors should notify the editor at the time of submission. The editor shall have full discretion to follow their journal’s policy on restricted data, including declining to review the manuscript or granting an exemption with or without conditions. The editor shall inform the author of this decision prior to review.

Where data is sensitive and cannot be shared in an open forum, authors are encouraged to share metadata and provide a contact for requesting access if the raw data itself cannot be made available.

Data can be submitted with your article and hosted on the Sage *Autism* website where we work with Figshare to host data content. Authors can use a recognised third party data repository service to host their data such as Open Science framework. Authors may use their institution’s data sharing repository.

Autism also encourages authors to delineate clearly the analytic procedures upon which their published claims rely, and where possible provide access to all relevant analytic materials. If such materials are not published with the article, we encourage authors to share to the greatest extent possible through a digital repository (above).

Autism encourages authors to use data citation practices that identify a dataset's author(s), title, date, version, and a persistent identifier. In sum, data should be referenced and cited, where possible, as an intellectual product of value.

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3. Publishing Policies

3.1 Publication ethics

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Section Two: Research Paper

“Life has more purpose now”: A Grounded Theory Investigation of the Impact of Table-top Board Games on Wellbeing and Functioning in Autistic Adults.

Rebecca Bennett

Lancaster University

Doctorate in Clinical Psychology

Prepared for the Journal: Research in Autism Spectrum Disorders (See Appendix A).

Abstract

Background:

Despite anecdotal evidence of the benefits of table-top board game engagement for the wellbeing and functioning of autistic adults, no research to date has explicitly explored this relationship. If table-top board games are perceived to be beneficial for psychological wellbeing and functioning in autistic adults, they could be utilised within the community as a protective factor which could reduce the number of autistic adults requiring a referral to mental health services. Learning about the role of board games could also lead to the development of innovative therapeutic approaches. Therefore, the aim of this research will be to examine qualitatively what impact autistic adults perceive playing table-top board games has on their wellbeing and functioning.

Method:

Ten autistic adults volunteered to participate in semi-structured interviews. Verbatim interview transcripts were analysed following the principles of Grounded Theory.

Results:

Results identified three main concepts: 1) The cycle of board game engagement 2) Impact on aspects of autism 3) Impact on wellbeing and functioning. Content of these concepts interacted in a variety of ways, which have been represented in a theoretical model.

Conclusion:

Multiple components of board games were identified as impacting on wellbeing and functioning. These have been represented in a theoretical model. The more time playing board games generally meant that participants were communicating better, forming better relationships, feeling more included and enjoying the games more. These factors contributed to them playing more games, becoming a virtuous cycle. In turn, the concepts all lead back to a general sense of improved wellbeing and functioning.

Key words:

Autism, ASD, Wellbeing, Functioning, Table-top Board Games.

Introduction

Autism, often referred to as Autism Spectrum Condition (ASC), is a lifelong neurodevelopmental condition that affects people worldwide (Autism Around The Globe, 2011). It is characterised as persistent social and communication difficulties, restricted and repetitive patterns of behaviour, and sensory sensitivities (American Psychiatric Association, 2013). The prevalence of autism in adults in the United Kingdom (UK) is around 1.1% (National Institute for Health and Care Excellence, 2020), with recent research suggesting the growth in autism diagnosis was exponential between 1998 and 2018 (Russell et al., 2022).

Autistic people are more likely to experience mental health difficulties than neurotypical individuals (Autistica, n.d.). Research suggests that approximately 70-80% of autistic people will experience difficulties with their mental health at some point in their lives (Lever & Geurts, 2016; Simonoff et al., 2008). Comparatively, the estimate for the percentage of the neurotypical population who will experience difficulties with their mental health is around 25% (McManus et al., 2016). The difference in vulnerability to experiencing mental health difficulties may be partly explained by an increased chance of being exposed to negative life events (e.g., employment and financial difficulties, domestic abuse) (Griffiths et al., 2019). Another possible explanation for the increased vulnerability to mental health difficulties could be that society is not structured in a way that adequately meets the needs of autistic people (Raymaker et al., 2020). This includes aspects of daily life not being set up to accommodate for sensory sensitivities, social and communication challenges, and a lack of understanding of restricted and repetitive behaviours (Raymaker et al., 2020).

There are many different interpretations of functioning, but one definition that has been long-standing is the ‘ability to continually work towards your full potential’ (Rogers, 1965). The key area of difficulty within autism considered to impact on functioning is communication, including difficulties with initiating conversation, understanding abstract language, reading body language, and processing information (Cummins et al., 2020). Communication helps us to build relationships and share experiences and needs with others, so it is no surprise that autistic adults appear to be facing barriers to functioning (Cummins et al., 2020) and report a lower quality of life when compared to the general population (Ayres et al., 2018). In addition, barriers in communication are likely to affect access to physical and mental health services for autistic people (Cummins et al., 2020). This is problematic given that this is a population who are known to be at increased risk of experiencing psychological distress (Colvert et al., 2021; Kannabiran & McCarthy, 2009).

Despite the increased risk of psychological distress in autistic individuals (Colvert et al., 2021; Kannabiran & McCarthy, 2009), research suggests that there are many gaps in mental health support for autistic people (Maddox et al., 2021). These gaps also appear in social prescribing (a health priority in the NHS Long Term Plan aiming to connect people to activities and services in their communities (NHS England, 2019)), an approach which is receiving increasing attention from commissioners as an alternative to therapeutic support (Charlton et al., 2021; Featherstone, 2024). Benevides et al. (2020) carried out a large-scale study to identify what autistic adults feel is needed to address mental health in the autistic population. The study found a need for approaches to improve mental health that were available in the community, without the need for a mental health professional to be present. Such approaches would allow for the self-management of mental health through building strategies that focus on social well-being.

One example of an activity that is readily available in the community without the need for mental health professionals is table-top board gaming. Table-top board games are a popular form of entertainment (Donovan, 2018) and it is estimated that the global board game market will be worth more than £9bn by 2023, and that it will continue to grow (BBC NEWS, 2019). Amongst the reasons that board games are thought to be so popular, despite a technology-dominated culture, is the socio-economic inclusivity of board games, and the advantages of having quality face-to-face social interactions and human connection (Sargeantson, n.d).

Over recent years, there has been a growth in the number of anecdotal reports which claim a number of mental health benefits of table-top board gaming (Booth, 2020; Burman, 2021; Papworth, 2018). The benefits described in these media reports include improvements in mental health and wellbeing, a reduction in social isolation and stress, and an increase in social skills and emotional regulation skills. There is some emerging empirical research to support this anecdotal evidence, but the study focuses specifically on board games that were designed to be therapeutic as opposed to recreational board games (Streng, 2009). However, it demonstrated a potential for games to engage and motivate people for the benefit of their mental health.

It is estimated that around four to five percent of the board gaming community are autistic (Cross et al., 2023), with this estimate likely to be low due to a relatively small sample size and barriers to accessing diagnosis (Crane et al., 2018; Howes et al., 2021; Lewis, 2017). Despite this, there has yet to be any research into table-top board gaming and mental health that specifically focuses on the experiences of autistic people. However, anecdotal media reports suggest that the benefits of table-top board game engagement for mental health and wellbeing are not exclusive to the neurotypical population (Gelder, 2017). In this media report, an autistic man expresses his experiences of the value of table-top board game engagement for his mental health. He describes how he engaged in table-top board gaming during a hospital admission for his mental health. The benefits he cited in this interview included reduced social isolation through opportunities to interact with other people, which in turn improved his wellbeing. This suggests that the benefits of table-top board gaming may not be exclusive to neuro-typical populations and could be applicable to autistic individuals.

To my knowledge, no empirical research to date has explored what the perceived impact of table-top board game engagement is for autistic adults. If table-top board games are perceived to be beneficial for psychological wellbeing and functioning in autistic adults, they could be utilised within the community as a protective factor which could reduce the number of autistic adults requiring a referral to mental health services. This is important for clinical psychology as clinical psychologist are increasingly encouraged to have a community focus to their work (The British Psychological Society, 2018). Learning about the role of board games could also lead to the development of innovative therapeutic approaches. Therefore, the aim of the project was to examine qualitatively what impact autistic adults perceive playing table-top board games has on their wellbeing and functioning. A qualitative approach was chosen because it allowed the participants to freely reflect on and share their experiences, which allowed me to gain a deeper understanding of the participant’s perceptions.

Method

Participants

Ten participants were recruited via volunteer sampling. The sample size was determined by guidelines from Dey (1999), aiming for the principle of ‘theoretical sufficiency’. Demographic details of participants can be found in table one. To be eligible to participate in the study, volunteers needed to:

- Self-report that they had been diagnosed autistic or with Asperger’s syndrome by a health professional.
- Be aged 18 years old or over.
- Report that they regularly engaged in table-top board game play, and currently play at least once a month.
- Be able to engage in a semi-structured interview using English language.

A total of 23 people expressed an interest in participating in the study. Eight people did not return the consent form and five people were not eligible for participation due to having a self-diagnosis of autism, and so were excluded from participation.

[Insert table 1.]

Materials

A computer with access to a microphone and webcam was used to conduct interviews. Interviews were held and recorded using Microsoft Teams software, or where conducted face-to-face they were also recorded using Microsoft Teams.

Procedure

Recruitment

The study was advertised using posters in 24 board game cafés within the UK and via relevant online forums (e.g. social media autism support groups, board gaming forums). The advertisement poster (appendix B) contained details of the research and encouraged anyone who was interested in participating in the study to contact me.

Consent and Ethics

People who expressed an interest in the study were provided with a participant information sheet (appendix C) and an accessible version of the participant information sheet (appendix D), consent form (appendix E) and initial eligibility-screening questionnaire (appendix F) via email. A 48-hour minimum time period was given before following up with the potential participant to ensure that the interested person had time to read and consider the information in the participant information sheet and decide whether they wanted to take part in the study. Opportunity was given for the potential participant to ask any questions. Capacity to consent to participation was assumed, as there was no evidence that any of the participants may lack capacity to consent to participation. Written consent was obtained before a date and time for interview was agreed. Immediately prior to the interview, participants were given a further opportunity to ask any questions and a verbal check that they still consented to participation was conducted. Participants were reminded of their right to withdraw from the study at any time during participation. Participants were informed that following a two-week period after participation, a best possible attempt to remove any data would be made, although they were informed that it might not be feasible to extract data once it is combined with the data set as a whole. Video recordings and transcripts were stored securely in a separate location to any identifying information about the participant. The research was approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University.

Data Collection and Transcription

I developed a semi-structured interview topic guide, informed by the existing literature in the field. The topic guide began largely with open-ended questions that were designed to explore the general area of research. The topic guide was adapted following every interview, based on the data analysis process, in line with the processes of Constructivist Grounded Theory (Charmaz, 2006). For example, the guide was adapted to delve deeper into emerging concepts or to clarify ambiguities in the data. The topic guide for the first interview and the topic guide for the final interview have been included in appendices G and H to show an example of how the interview topic guide evolved over the course of the research. The guide was also adjusted at times following changes suggested by participants (e.g., wording questions differently to make them more accessible).

Following recruitment and written consent via email to participating in the study, a time and date to conduct an interview was agreed with the participant. Participants were offered a choice between attending an interview in person at Lancaster University, or online via Microsoft Teams. Interviews lasted between one hour and one and a half hours and a semi-structured interview schedule, created by the research team, was utilised. The video recording was immediately transferred to secure storage. I created verbatim transcripts of the recordings as soon as possible following the interview. A transcript sample with coding can be found in table two.

[Insert table 2.]

Data Analysis

Constructivist Grounded Theory techniques, based on the process outlined by Charmaz (2006), were used to analyse the interview transcripts. Grounded Theory principles were adopted in this study as Grounded Theory was developed with the aim of using qualitative data whilst maintaining the rigor of a quantitative approach (Glaser & Strauss, 2017). The use of Grounded Theory allowed me to attempt to understand the perceived benefits of board games for autistic adults through listening to their perspectives, whilst still being able to analyse the data in a rigorous way.

After each interview, I listened to the recording, transcribed the data and read the transcript to immerse myself in the data. Once I was familiar with the data, initial stages of coding began. In the initial stages of coding, I completed sentence-by-sentence coding in order to code as much of the text as possible. The research supervisor coded an anonymised transcript to check for reliability of coding. Memos were created during the coding process to allow for constant comparison to aid in the process of conceptual categorisation. The next stage was focused coding, whereby I considered which codes came up most frequently and appeared to be the most significant. The research supervisor reviewed the focused codes to ensure validity. Following the focused coding stage, themes from multiple transcripts emerged which allowed for the development of categories. Once categories were created, theoretical sorting began and the links between categories were defined. I amended the semi-structured interview schedule at varying intervals. Typically, this process would be combined with re-interviewing participants until a point of data saturation is achieved. However, due to the scope of the project in the context of a doctoral programme, it is unlikely that true data saturation has been achieved. Instead, I aimed for ‘theoretical sufficiency’ (Dey, 1999). Diagrammatic representations were used to facilitate the process of data analysis, as shown in figure one.

Results

Analysis of the data using a Grounded Theory approach (Charmaz, 2006) identified three main concepts. Content of these concepts interacted in a variety of ways, which have been represented in a theoretical model (figure 1). Each concept is represented by a 'branch' of the model. Each branch of the model has multiple parts that contribute to the branch. The arrows in the model show where interactions take place, with some being between branches, and some being between the different parts within a branch.

[Insert Figure 1.]

The way that the branches of the model interact created a feedback loop that meant that participants spent more time playing board games. The more time playing board games generally meant that participants were communicating better, forming better relationships, feeling more included and enjoying the games more. These parts contributed to them playing more games, becoming a virtuous cycle. In turn, these branches all lead back to a general sense of improved wellbeing and functioning. Participant nine demonstrated this through saying "I cannot overstate to you what a massive difference that [board gaming] has made to me in my life and my mental health, and just the quality of my life generally". They went on further to say that table-top board game engagement has been "transformative" and has provided "a window out of a really, really dark tunnel". Participant two also described how transformative table-top gaming had been for them through saying their "viewpoint" of autism has changed since engaging in table-top board gaming, as they see it as less of a "barrier" now, and this has helped their "wellbeing in general". They went on to conclude that they "feel like [their] life has more purpose now". The mechanisms of these patterns and relationships will be explored. Branch A: 'the cycle of board game engagement', and branch B: 'impact on aspects of autism' are explained together over the next few paragraphs, rather than independently of each other. Branch C: 'impact on wellbeing and functioning' will then be explained in the final section of the results.

Participants shared that playing board games provides them with *rules and routines* (Branch A) and they discussed how this had a direct impact on them *developing, maintaining* *and understanding relationships* (Branch B) and impacted on them *coping* (Branch C). There were reported to be different levels in which rules and routines were important. Firstly for example, participant two described how having ‘board game night’ scheduled in gave them “something to look forward to” in their week as a coping mechanism for stress. Participant one also explained that for them it was the “scheduling side of things and the people itself that was the most important thing and the board games sort of just act as like a facilitation”. Secondly, within the mechanics of the games, the written rules were reported to create shared objectives, which reduced ambiguity for participants. This in turn was reported to reduce anxiety and therefore positively influence mental health. For example, Participant one reported “the more structure you have, the less anxious you are”. However, some participants shared examples of occasions where there were ruptures in relationships due to disputes over rules, and this could be difficult to manage. Participant 10 recounted, “I was getting so angry like every single week because there was like a particular person who just wouldn’t play by the rules”. Therefore, whilst participants cited rules of the game as a helpful mechanism, there were instances where the rules could prevent flexibility and this could lead to difficulties, affecting the person’s emotional wellbeing and their relationships with others. This relationship is outlined using the purple arrows in figure one to demonstrate how the relationship is mixed as there are both positive and negative implications. Despite the negative impact that board games may have on flexibility, participants expressed how the nature of board gaming meant they developed and practised skills related to *cognitive flexibility* (Branch B) such as planning, organisation and problem solving. Participants explained that the consistency of mechanics across games, yet the variability within both the games themselves and the groups of players meant that participants were introduced to having to tolerate uncertainty to a degree. This helped them to develop skills in adapting to change, whilst the consistency in game mechanics provided some familiarity to prevent them being too far outside of their comfort zone. Participant three demonstrated this by saying that learning new board games has become one of their “coping mechanisms around change”.

Another mechanism of board games that participants reported to be helpful was the turn-taking aspect, which appeared to have an impact on *communication* (Branch B). Participant five explained that board games helped them to develop skills in “knowing when it’s your turn to speak in a conversation”. Further, participants felt that having board gaming as a shared interest provided them with “touchstones or common reference points for communication” [participant three] because they could “talk about something that we’re all interested in” [participant seven]. Participant nine described communicating whilst playing a board game as “socialising on easy mode” and shared that it allowed them to “have a social life, but in a way that’s cope-able with the limitations that autism presents”. It seems that turn-taking helps participants to socialise by reducing the cognitive load of communication. For example, participant four explained that board games “generally gives me the headspace to be more relaxed and to think about how I communicate”. Despite this, some participants also spoke about how the cognitive load of games could be so high that they would end up missing cues in conversations. For example, participant three described how sometimes “the game takes up my head space” which can leave them “focusing on the game and not developing social skills”. This can impact negatively on players relationships with others, meaning they could end up socially isolated which negatively impacts on their wellbeing and functioning. Therefore, it might be that only certain games with the mechanics deemed to be useful, such as turn-taking, are beneficial for socialising.

Enjoyment (Branch A) was viewed as a key motivator for engaging in table-top board game play. Participants six, eight and 10 all talked about the games being “fun” and highlighted that they can involve humour and bring a positive energy that increases their mood. This was viewed as positively affecting their mental health. For example, participant eight described how board game engagement “has a good effect on my mental health”, and participant four shared “It’s become part of that cycle of self-care, and in terms of my mood and energy level it’s almost a maintenance activity”. Despite this, some participants reported that enjoyment in game play can be unpredictable, as it is “dependent on who I played the board games with” [participant one], and the outcome of the game. Additionally, participants shared that board gaming can be an expensive hobby if it becomes a fixed interest, as they became so invested in buying new games to try them out with their peers. However, these factors were not viewed to be so frequent or problematic that they would have much of an impact on mood.

Another motivator for engaging in table-top board gaming was *inclusivity in the context of often feeling excluded* (Branch A). Participants talked about often feeling excluded from social circles throughout their lives, and that table-top board gaming is different because of “how inclusive it is to everyone” [participant five]. They talked about the mechanisms for inclusion within board gaming as opposed to other hobbies. These included having no requirement of pre-determined skill level (e.g., “there’s no issues about skill, there’s no barriers” [participant four]) as other people are open to learning together. Participants reflected that the types of people attracted to playing board games tended to be, in their experience, more “accepting” [participant six, participant seven] and “very open minded” [participant six] to difference and diversity, and therefore more inclusive. This appeared to impact on participant’s mental health because it increased their self-esteem and reduced anxiety through providing them with a sense of belonging within a community. Participant five demonstrated this by saying “having a community of people that you feel connected to” is “really beneficial to wellbeing”.

Additionally, participants reported that board gaming is accessible in many ways (e.g., free or cheap to play, available to all ages, no restrictions for people with a variety of disabilities) and this created an openness amongst the community that made it feel “welcoming” [participant four]. They also viewed the large variety and choice within board gaming as positive for attracting people from a variety of backgrounds and with various different interests. Participants were clear that the inclusivity they experienced within the table-top board gaming community felt unique when compared to other hobbies (e.g., rock climbing, knitting groups). For example, after talking about feeling excluded from another hobby due to pressures to buy expensive equipment and have specialist knowledge, participant five shared that in the board gaming community “It’s like no pressure. So I think that's just the community…I don't think I would have found it anywhere else". This appears to link back to the aforementioned nature of people in the board gaming community as generally being perceived to be more accepting.

Impact on Wellbeing and Functioning

In branch C, two main parts of the branch emerged from the ways in which participants described a direct link between table-top board gaming and wellbeing and functioning, forming a third branch on the model. The two parts are: 1) coping, and 2) mental health.

The first positive contribution that participants discussed to their wellbeing and functioning was how board games affected their *coping* (Branch C). They reported that they experienced most board games as relaxing, which helped them to cope with stress. One of the factors that appeared to contribute to relaxation was the sensory satisfaction of the feel or look of game pieces. For example, participants reported that they had found that the pieces and mechanics of some games soothed their sensory system. Participant eight reported, "There are things to hold, and they feel nice, and it takes the 'top level' off a lot of the sensory issues. Quite often everything just kind of calms down and settles". Similarly, participants reported that whilst they were in game play, they noticed a reduced focus on sensory sensitivities. Even when this did not reduce their stress levels, they reported that it prevented further escalation and allowed them to tolerate situations that they would typically struggle to tolerate (e.g., loud noises, bright lights).

Participants also reported that games served as a distraction technique from difficulties they were having in wider life, and this helped to decrease stress levels and aid relaxation. For example, participant three reported that table-top board games are a helpful distraction from "intrusive thoughts". Finally, participants reported that engaging in table-top board game play provided a regularity for social connection, preventing them from becoming socially isolated. This is linked to the aforementioned impact of table-top board games on communication and relationship formation. This, combined with increased relaxation, had a positive impact on them coping.

Participants reflected on the positive impact that table-top board game play has on their *mental health* (Branch C). A range of branches and parts of the model link to mental health. Participants described four main factors associated with mental health; self-esteem, mood, energy, and anxiety. They shared that they feel a positive energy both during and after engagement in play. This positive energy increased their mood and made them feel “happier” [participant seven]. Additionally, participants reported that board game play helped them to feel a sense of mastery, increasing their self-esteem. For example, participant 10 said after playing board games “I feel a lot better about myself”. Participant nine explained that board games have done a lot for their “self-esteem” and helped with them “feeling authentic”. Finally, participants reported that the aforementioned coping strategies provided by board games, combined with the routine and structure that board gaming provides to their week, helped to reduce their anxiety levels and therefore helped them to function better in daily life. Whilst many of the parts of the model feed into mental health, mental health was not reported to directly impact on the other parts of the model. However, there was considered to be an indirect link in that if mental health was poorer, people generally felt they were coping less and this generally meant they enjoyed playing board games less. Additionally, mental health was reported to contribute to the time spent playing board games, and participants were able to use how much they were playing board games, and enjoying playing, as an indication of their mental health status. Participant eight described this relationship through saying “I think they have had a good impact on my mental health and they continue to do so, and they are also a good barometer of how I'm doing…if I don't want to play a game, or if the thought of playing the game that I would usually play just fills me with dread and heaviness then that's a good indication that I haven't been looking after mental health”.

Discussion

The results in this study demonstrated that overall, participants perceived table-top board gaming to have a positive impact on their wellbeing and functioning. Participants discussed their reasons for playing board games and the impact this had on various aspects of their autism. Specifically, participants reported that various factors of board game engagement helped them to cope, and reported that this led to improvements in their self-esteem, mood and energy levels, and decreased their levels of anxiety. Because of improved coping and mental health, participants explained that they had more motivation and capacity to engage in table-top board game play. Therefore, this created a feedback loop in whereby participants spent more time playing board games, perpetuating a cycle that was positive for their wellbeing and functioning.

The questions asked did not directly prompt participants to talk about their difficulties in the context of the DMS-5 criteria (American Psychiatric Association, 2013). However, the main areas of difficulty that participants in this study reported that board gaming has an impact on were communication, relationships and cognitive flexibility- all of which are recognised in the DSM-5. This demonstrates that board game play is seen to target the areas of difficulty that are most common and recognised within autism, and shows potential for generalisability to the wider autistic population.

Participants talked about similarity of table-top board game mechanics between different games, which allowed them to feel familiar and comfortable with developing skills in adapting to change when the group of players or the board game itself changed each time they played. This indicates that table-top board games may allow players to develop within their ‘Zone of Proximal Development’ (ZPD) (Vygotsky & Cole, 1978). The ZPD is defined as ‘the conceptual space in which such interventions are most effective’ (Cohen & Ambrose, 1999). It is a zone in which people are challenged to develop, without being pushed too far that learning becomes inhibited. Given that participants have suggested that table-top board gaming allows them to develop within their ZPD, it may be that we can learn from table-top board gaming about how to best place other aspects, such as mental health interventions, into an autistic adults ZPD.

Currently, the NICE guidelines for the treatment of mental health difficulties in autistic adults states that the same approach should be used for autistic people as is used in the neurotypical population (National Institute for Health and Care Excellence, 2012). The approach recommended for most common mental health difficulties is talking therapies. There are some recommendations in the NICE guidelines for adaptations to communication that may help autistic people to engage with talking therapies, such as using visual tools and making the rules of the therapy explicit (National Institute for Health and Care Excellence, 2012). It could be that the mechanisms identified as helpful within board gaming could also be useful for communication in the therapeutic setting for autistic adults. For example, in this research, board games were reported to provide a turn-taking structure that reduced barriers to communication. Therefore, a turn-taking structure could be implemented within the therapeutic setting to support autistic people to access support for their mental health, in a way that is more accessible for them.

One of the important parts of the model that many of the participants in this study talked about was inclusivity in the context of often feeling excluded. Research supports that feeling excluded is a common experience amongst autistic people (Levi et al., 2023). This is thought to be explained by social misunderstandings, rejection and social exclusion from peers, and internal evaluations of the self as different from others. Levi et al. (2023) suggest that intervention programmes need to focus on inclusivity in the community, through promoting understanding and acceptance of autism. However, it appears that understanding and acceptance already seem to be present within the board gaming community, so it may be that the characteristics of the board gaming community can be explored further so that they can be replicated in other scenarios to make other communities more inclusive for autistic individuals. This could help accelerate the process of increasing inclusivity and preventing autistic people feeling excluded.

Clinical Implications

Clinical psychologist are increasingly encouraged to have more of a community focus to their work (The British Psychological Society, 2018). Additionally, the National Health Service (NHS) in the UK has set out a Long Term Plan (NHS England, 2019), which has a specific aim around using community resources as a protective factor for mental health. Table-top board gaming is happening in communities globally, and this research demonstrates that it is positively impacting the lives of autistic adults. This might provide a good avenue for clinical psychologists to work proactively in the community, through encouraging the use of board games. This could be done through working with third sector organisations such as charities and leisure organisations. Many of these organisations are already aware of the benefits for autistic people of safe and enjoyable opportunities to interact with their peers, so it would be of particular importance to link up with newly established organisations and those that may not already be aware of these benefits, to educate them on the usefulness of activities which provide similar functions that have been identified as being helpful within board gaming (e.g., activities involving turn-taking, activities with clear rules and structure).

Additionally, it might be that similar activities could be used within inpatient mental health settings alongside current approaches to reduced distress and promote coping. Clinical psychologists could have a role in educating support staff in inpatient services on how to organise activities that provide the elements of board games that appear to be therapeutically beneficial. Further, with waiting lists for mental health support in the UK being long (Sizmur & Raleigh, 2018), creating a social experience which harnesses the factors identified as helpful about board gaming could be used whilst people are waiting for support, or as a relapse-prevention strategy. Practically, using board games or similar approaches as a waiting list initiative could be beneficial in providing immediate engagement in an activity that promotes wellbeing, potentially demonstrating motivation to engage with therapy and providing therapists with useful insights into a client's engagement and interaction styles. However, clients may not be aware of the therapeutic benefits of board games and similar activities, and this could lead to them feeling as though their experiences are being minimised. Therefore, education around what factors appear to be therapeutically beneficial could help with motivation, and help people to identify other activities that might provide them with the same benefits where board games may not be of interest to them.

Talking therapies are the current recommended approach in the UK for the treatment of mental health difficulties for autistic individuals. (National Institute for Health and Care Excellence, 2012, 2013). However, the evidence base for such talking therapies is largely based on neurotypical populations (Catchpole, 2023; El Baou et al., 2023), and evidence around how mental health professionals can best support autistic individuals is often focused on adapting therapies which were developed for the neurotypical population (Ingham et al., 2023; Trimmer et al., 2023). Instead, this research suggest that we could learn from board games what autistic individuals find to be therapeutically beneficial, and apply this to a talking therapies approach. For example, participants found the turn-taking structure of board games to help them with communication difficulties. Additionally, they reported that having board games routinely in their week was helpful. This could indicate at some adaptations to therapy that could be beneficial for autistic individuals, such as utilising a turn-taking structure in therapy and having appointments planned for the same time in each week in advance. These may seem like small changes to make, but they could make a significant impact on improving the accessibility of mental health services, along with also being achievable for clinicians. This supports recommendations from existing guidelines that highlight the importance of clear routines, predictable structures and visual aids (Spain & Happé, 2020). Additionally, Spain & Happé (2020) highlight the importance of using individual interests to enhance motivation and engagement in therapy. Whilst these guidelines were created following consultations with professionals, the current research supports them whilst capturing the voice of some members of the population of autistic adults.

Another implication for this research is the impact it could have on staff working in mental health services. Feeling unable to do your job to a standard that aligns with your values and beliefs can lead to a sense of moral injury (the difficult emotions that arise from knowing what care patients need but being unable to provide it), and burnout (Dean et al., 2019; Ford, 2019). Research in this field could help mental health professionals support autistic individuals better, and therefore improve job satisfaction and reduce stress in mental health care professions. High levels of clinical stress are associated with poorer quality of care (Salyers et al., 2017), meaning that reducing stress and burnout in mental health professionals could improve care quality and perpetuate a cycle of improved wellbeing for both staff, and the individuals who they support.

Strengths and Limitations of the Research

A strength of this research is that it introduces a novel idea to the field, providing avenues for multiple different research topics to be explored as discussed below. To my knowledge, no research to date has attempted to gain an understanding of the perceived impact of table-top board game play on the wellbeing and functioning of autistic adults. This field is under-researched, but could have many potential benefits for autistic individuals, as well as systemic benefits for mental health services and the people who use them. It is hoped that this research has opened avenues for further research in the area to be explored.

A limitation of this research is the use of diagnosis for inclusion criteria. The inclusion criteria of the study required participants to have a formal diagnosis of autism. Five of the people who contacted me to express an interest in participating in the study declared that they had a self-diagnosis of autism and they were therefore excluded from participating. However, there are systemic barriers to receiving a diagnosis in the UK (Crane et al., 2018; Howes et al., 2021; Lewis, 2017), meaning this research may exclude a large proportion of the autistic population. Additionally, there are some demographic characteristics (e.g., age, gender) (Fusar-Poli et al., 2022; Hamdani et al., 2023; Lockwood Estrin et al., 2021) that exacerbate the issues with accessing a diagnosis and this may have meant that the population of people recruited in this study is not representative of the full population of autistic people.

This research displays some cultural limitations. All participants were residents in the UK, and to my knowledge, were sharing their experiences of playing board games in the UK. This means that the results may not be applicable to autistic people living in other countries, where the culture, and therefore the culture within the board gaming community, may be different. For example, participants shared their experiences of board gaming being accepting and inclusive because of the open-mindedness of other players to difference and diversity. They went on to discuss how this feeling of acceptance and inclusivity was unique to board gaming when compared to other hobbies. However, the components behind the accepting and inclusive culture within board gaming are not fully understood by this study. As they are not fully understood, it is difficult to determine whether they are impacted by the views and attitudes that are held towards difference and diversity more widely within the UK. Therefore, the experiences of board game engagement for autistic people could vary by culture, meaning this study may be culturally limited.

A further limitation of this research is that all participants volunteered to take part in this study because they play table-top board games voluntarily in their free time. This is likely to mean, that for various differing reasons, participants enjoy engaging in table-top board gaming. Therefore, the research does not capture the views of autistic people who do not already engage in table-top board gaming, who may be less enthusiastic about the benefits of table-top board gaming. It could be interesting to understand the views of autistic people who are encouraged to engage in table-top board gaming, to gain the perspectives of autistic people about the impact of table-top board gaming on their wellbeing and functioning when this is not something that they would voluntarily do in their spare time.

Reflexivity Statement

Throughout the process of conducting this research, I reflected on my positionality and the influence this may have on the research. Whilst my aim was to create an inclusive study, it is possible that my gender and age could have influenced my communication style and impacted on the rapport I built with participants, affecting how much information they freely gave to the research. Actively reflecting on these characteristics helped me to remain sensitive to potential biases. Additionally, being a non-autistic researcher in the field of autism could have led to potential biases in interpreting behaviours and experiences through a neurotypical lens. To minimise this bias, I incorporated a participatory research design when creating the participant-facing materials of the study. However, to further reduce bias, it could have been helpful to have an autistic person as part of the research team. Further, my limited experience with table-top board games may have impacted by understanding and assumptions. During the process of this research project, I immersed myself in the world of board gaming. This opened my eyes to the wide variety of games and their mechanics, and my understanding continued to change as I progressed through the project. I kept a reflective journal of my time through the research process, along with regularly reflecting with my research team, to attempt to acknowledge and address any biases.

Areas for Future Research

Participants in this study identified components that helped board gaming harness an inclusive community. For example, not having a pre-determined skill level for participation and having a variety of board games to attract a range of people were identified as making the community diverse and welcoming. Future research might help to explore whether the same components within board gaming are helpful for other marginalised populations to feel included. This could be done using a qualitative approach to gain a rich understanding of the experiences of other marginalised populations when playing board games. Understanding whether the same components are helpful could aid understanding of components that need to be replicated in other communities outside of board gaming. This could help society as a whole increase inclusivity in communities, which could generally improve wellbeing and act as a protective factor for mental health.

As demonstrated by the current research, recreational board games, or activities that harness similar components, may have some therapeutic benefit. Research could explore whether incorporating certain features from board game activity, such as turn-taking and clear rules, could improve effectiveness of therapeutic interventions. This could be evaluated by comparing the therapeutic outcomes of a control group of autistic people accessing therapy, versus a group of autistic people accessing therapy that incorporates components of board games. However, as the current study has limitations as detailed above, any future research would need to give careful considerations to how the findings of the current study were utilised before implementing findings in a way that could impact on someone's experience of therapy.

Conclusions

In summary, 10 autistic participants were interviewed for this piece of research, to understand the perceived impact that table-top board game play has on their wellbeing and functioning. Multiple components of board games were identified as impacting on wellbeing and functioning. These have been represented in a theoretical model. The way that the branches of the model interact created a feedback loop that meant that participants spent more time playing board games. The more time playing board games generally meant that participants were communicating better, forming better relationships, feeling more included and enjoying the games more. These parts contributed to them playing more games, becoming a virtuous cycle. In turn, these branches all lead back to a general sense of improved wellbeing and functioning.

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Tables and Figures

Table 1

Participant demographic information.

Participant ID	**Gender Identity**	**Age Category**	**Country of Residence**	**Frequency of Board Game Play**	**Years Since Diagnosis**
Participant 1	Male	26-35	UK	Weekly	25
Participant 2	Non-binary trans masculine	26-35	UK	Monthly	8
Participant 3	Male	36-45	UK	Monthly	11
Participant 4	Male	36-45	UK	Weekly	15
Participant 5	Female	26-35	UK	Twice weekly	<1
Participant 6	Female	26-35	UK	Four times a week	7
Participant 7	Male	56+	UK	Twice weekly	<1
Participant 8	Non-binary	46-55	UK	Twice weekly	10
Participant 9	Male	36-45	UK	Weekly	34
Participant 10	Non-binary	26-35	UK	Fortnightly	2

Table 2

Sample transcript with coding.

Line	Person	Transcription	Initial Codes	Focused Codes
207	Participant	I think more I guess in terms of my viewpoint of my autism. Definitely I didn't see it as as much of a barrier since like you know, having been able to socialise in that way, because I saw that I can socialise in certain situations and that it is just a difference. It's not something I should be, you know,	Viewpoint of autism changed since playing board games Autism not as much of a barrier since playing board games Being able to socialise through board gaming Board games helped me see I can socialise	Viewpoint of autism positively changed since playing board games Board games increased

Line	Person	Transcription	Initial Codes	Focused Codes
		ashamed of or something I should let pull me back, like it's something, I'm really bad describing things. Erm, yeh, basically, if that made any sense.	Board gaming made me realise autism isn’t something I should be ashamed of Made me realise I shouldn’t let autism pull me back	confidence in socialising
208	Researcher	Yeah. So around your viewpoint of autism changing around that time of starting playing games and since then, because you		

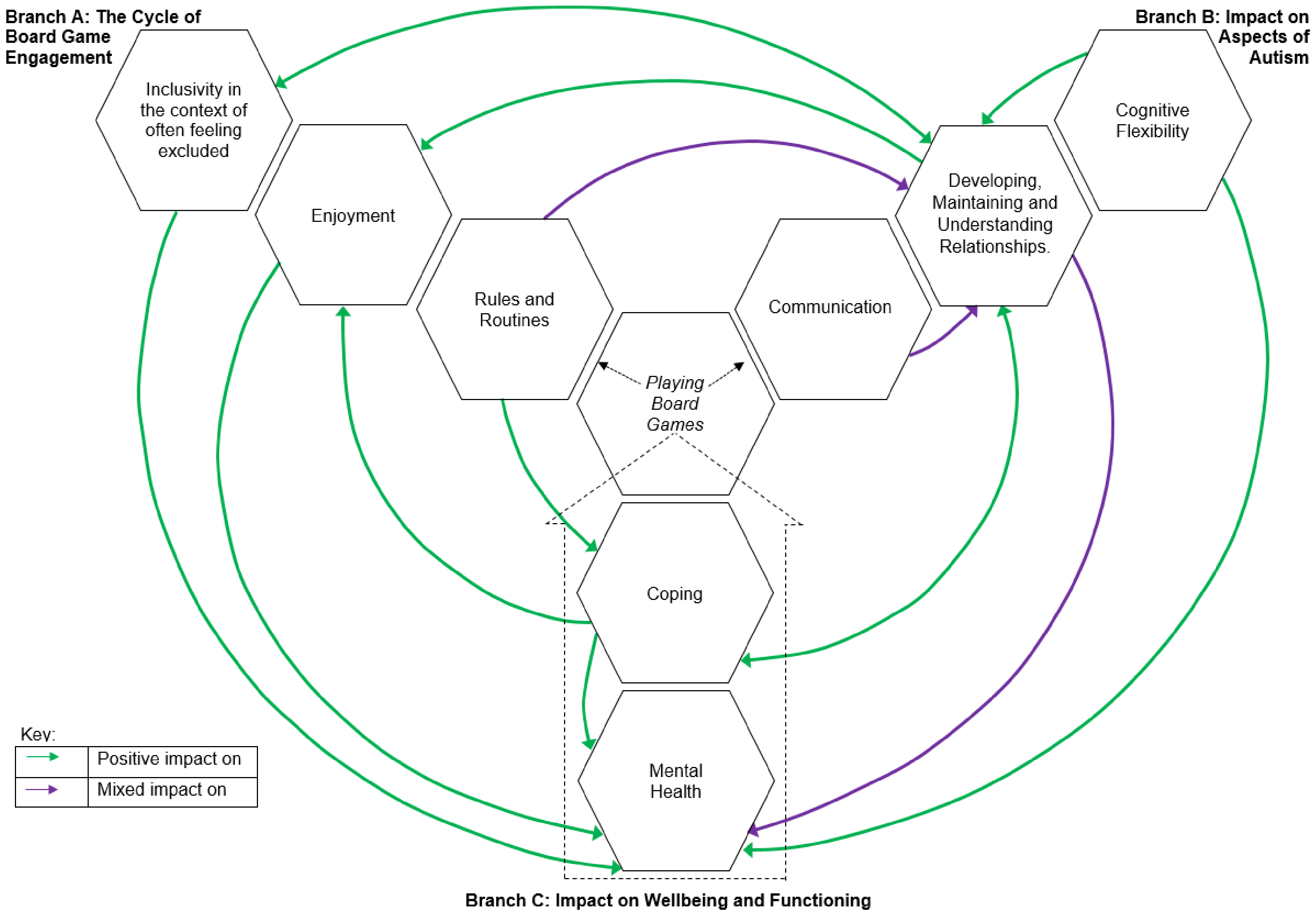
Line	Person	Transcription	Initial Codes	Focused Codes
		don't see autism as a barrier to that socialising as much.		
209	Participant	Yeah.		
210	Researcher	So your viewpoint of autism has changed since playing board games, has that impacted on your wider life, that change in viewpoint?		
211	Participant	Yeah, I guess because I said like in terms of my confidence definitely it made me more sure that I'm,	Board games increased confidence	

Line	Person	Transcription	Initial Codes	Focused Codes
		I'd be able to you know, go into the job that I'm in right now. I don't	Made me sure I was able to do my job	
		think I would have had the confidence if I didn't think that I am able to like, actually connect with	Would not have had the confidence prior to board gaming	Board games increased confidence
		people. Erm because you know, I've always loved, been interested psychology and wanted to look after other	Board games increased confidence in my skills of connecting with people	Board games increased confidence in socialising
		people and like wanted to care, you know care for people but I	Unsure if I could hold a conversation	

Line	Person	Transcription	Initial Codes	Focused Codes
		was unsure of whether I can actually like hold a conversation with someone well enough to like be able to do the job that I'm in right now. Definitely. Yeah, I had a lot of kind of anxiety about that at the start.	Anxiety in the past about being able to hold a conversation	
		But I think I've just learned that I can talk with people. I can adapt to situations	Board games helped me learn I can talk with people Adapt to situations	Board games helped adapt to situations

Figure 1

Model representing autistic participant's perceptions of how table-top board game engagement impacts on their wellbeing and functioning.



Appendices

Appendix A

Author Guidelines for Research in Autism Spectrum Disorders Journal.

Editorial Process

All submissions will first be checked against the Aims and Scope and Guide for Authors by the Editor-in-Chief. Papers found to conform, in principle, to the journal's remit and standards will be assigned to a handling Editor (an Associate Editor or the Editor-in-Chief) for further evaluation. If a paper meets the journal's criteria a minimum of two independent reviewers will be invited to comment on the paper's methodological rigour and significance. Based on these comments and additional opinions if necessary, the handling Editors will make a decision. All accepted papers will therefore have received comments from a minimum of two independent reviewers and be reviewed by one or more editors. **Please note that RASD currently operates single-blinded peer review.**

Human and Animal Rights

If the work involves the use of animal or human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/; EU Directive 2010/63/EU for animal experiments http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm; Uniform Requirements for manuscripts submitted to Biomedical journalshttp://www.icmje.org. Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.All animal studies need to ensure they comply with the ARRIVE guidelines. More information can be found at http://www.nc3rs.org.uk/page.asp?id=1357

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All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double anonymized) or the manuscript file (if single anonymized). If there are no interests to declare then please state this: 'Declarations of interest: none'. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. More information.

Declaration of generative AI in scientific writing

The below guidance only refers to the writing process, and not to the use of AI tools to analyse and draw insights from data as part of the research process.

Where authors use generative artificial intelligence (AI) and AI-assisted technologies in the writing process, authors should only use these technologies to improve readability and language. Applying the technology should be done with human oversight and control, and authors should carefully review and edit the result, as AI can generate authoritative-sounding output that can be incorrect, incomplete or biased. AI and AI-assisted technologies should not be listed as an author or co-author, or be cited as an author. Authorship implies responsibilities and tasks that can only be attributed to and performed by humans, as outlined in Elsevier’s AI policy for authors.

Authors should disclose in their manuscript the use of AI and AI-assisted technologies in the writing process by following the instructions below. A statement will appear in the published work. Please note that authors are ultimately responsible and accountable for the contents of the work.

Disclosure instructions

Authors must disclose the use of generative AI and AI-assisted technologies in the writing process by adding a statement at the end of their manuscript in the core manuscript file, before the References list. The statement should be placed in a new section entitled ‘Declaration of Generative AI and AI-assisted technologies in the writing process’.

Statement: During the preparation of this work the author(s) used [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

This declaration does not apply to the use of basic tools for checking grammar, spelling, references etc. If there is nothing to disclose, there is no need to add a statement.

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In support of Open Science, this journal offers its authors a free preprint posting service. Preprints provide early registration and dissemination of your research, which facilitates early citations and collaboration.

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Use of inclusive language

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns ("clinicians, patients/clients") as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. When coding terminology is used, we recommend to avoid offensive or exclusionary terms such as "master", "slave", "blacklist" and "whitelist". We suggest using alternatives that are more appropriate and (self-) explanatory such as "primary", "secondary", "blocklist" and "allowlist". These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

Reporting sex- and gender-based analyses

Reporting guidance

For research involving or pertaining to humans, animals or eukaryotic cells, investigators should integrate sex and gender-based analyses (SGBA) into their research design according to funder/sponsor requirements and best practices within a field. Authors should address the sex and/or gender dimensions of their research in their article. In cases where they cannot, they should discuss this as a limitation to their research's generalizability. Importantly, authors should explicitly state what definitions of sex and/or gender they are applying to enhance the precision, rigor and reproducibility of their research and to avoid ambiguity or conflation of terms and the constructs to which they refer (see Definitions section below). Authors can refer to the Sex and Gender Equity in Research (SAGER) guidelines and the SAGER guidelines checklist. These offer systematic approaches to the use and editorial review of sex and gender information in study design, data analysis, outcome reporting and research interpretation - however, please note there is no single, universally agreed-upon set of guidelines for defining sex and gender.

Definitions

Sex generally refers to a set of biological attributes that are associated with physical and physiological features (e.g., chromosomal genotype, hormonal levels, internal and external anatomy). A binary sex categorization (male/female) is usually designated at birth (""sex assigned at birth""), most often based solely on the visible external anatomy of a newborn. Gender generally refers to socially constructed roles, behaviors, and identities of women, men and gender-diverse people that occur in a historical and cultural context and may vary across societies and over time. Gender influences how people view themselves and each other, how they behave and interact and how power is distributed in society. Sex and gender are often incorrectly portrayed as binary (female/male or woman/man) and unchanging whereas these constructs actually exist along a spectrum and include additional sex categorizations and gender identities such as people who are intersex/have differences of sex development (DSD) or identify as non-binary. Moreover, the terms ""sex"" and ""gender"" can be ambiguous—thus it is important for authors to define the manner in which they are used. In addition to this definition guidance and the SAGER guidelines, the resources on this page offer further insight around sex and gender in research studies.

Author contributions

For transparency, we require corresponding authors to provide co-author contributions to the manuscript using the relevant CRediT roles. The CRediT taxonomy includes 14 different roles describing each contributor’s specific contribution to the scholarly output. The roles are: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation;

Visualization; Roles/Writing - original draft; and Writing - review & editing. Note that not all roles may apply to every manuscript, and authors may have contributed through multiple roles. More details and an example.

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MANUSCRIPT PREPARATION & SUBMISSION

Use of word processing software

Files must be saved in the native format of the word processor and the text should be in 10-point Arial font, single-column format, double spaced, with standard 1 inch page margins

(2.54 cm). Please keep the layout of the text as simple as possible, as most formatting codes will be replaced on processing the article. In particular, do not use the options to justify text or hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. Note that source files of figures and text graphics will be required whether or not you embed them in the text. See also the section on Electronic artwork below for details on preparing figures and graphics.

Language (usage and editing services)

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel they require support in editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop (https://webshop.elsevier.com/language-editing/).

In relation to terminology, we ask that authors carefully consider their choice of wording when describing the patterns of strengths and difficulties that are associated with autism. Specifically, based on a paper by Kenny et al., (2015; http://aut.sagepub.com/content/early/2015/06/10/1362361315588200.abstract) we ask authors not to describe participants as 'low-functioning' or 'high-functioning' but to provide precise information about participants' abilities and areas of difficulty instead, ideally as assessed using relevant standardised tools. Autism should also not be described as a 'disease' or 'illness'. Finally, authors are encouraged to avoid language that inappropriately pathologizes certain characteristics or behaviours of autistic individuals (e.g., 'abnormality', 'impairment', 'deficit' etc) choosing less laden descriptions instead (e.g., 'difference'; 'tendency', 'preference', etc) - we note, however, that there are contexts where it may be appropriate to describe certain characteristics as, for example, an impairment (e.g., language impairment).

Types of Articles

Research in Autism Spectrum Disorders publishes the following types of manuscripts:

Brief reports: Papers of no more than 2,500 words that report an original piece of research of limited scope and/or that serves as proof-of principle for larger-scale studies.

Regular Articles: Papers of up to 6,000 words that report a substantive piece of research that makes a significant contribution and has clear implications for practice. Manuscripts reporting the results of randomized trials or interventions must demonstrate adherence to the CONSORT guidelines and include the relevant flow diagram and completed checklist.

Reviews: Papers of up to 10,000 words that provide a comprehensive overview of a significant area of research. Quantitative (e.g., meta-analyses) and qualitative reviews are welcome as long as they go beyond a mere description of the available literature and synthesise new knowledge with clear implications for future directions and practice. For systematic reviews and meta-analyses, authors must demonstrate adherence to the PRISMA guidelines (www.prisma-statement.org) and include the relevant flow diagram and checklist.

Commentaries: We welcome brief commentaries of no more than 1,000 words that offer new insights on papers published in RASD or elsewhere. Commentaries on government policy and/or items in the media are also welcome. .

Registered Reports: Registered reports are a form of empirical article in which the rationale, methods, and proposed analyses are pre-registered and reviewed prior to research being conducted. This format seeks to neutralise a variety of unhelpful research practices and biases that contribute to the many inconsistencies in findings that currently exist in the autism and wider literature. This format is suitable for novel as well as replication studies and we particularly welcome submissions describing proposed studies involving under-represented groups in research such as the elderly, minority groups and individuals with complex support needs. For further details please click RASD Registered Reports Author Guidelines)

NOTE: Word limits do not include the title page, abstract, figure legends, tables and reference list.

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Our online submission system guides authors stepwise through the submission process. The system converts article files to a single PDF file used in the peer–review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e–mail.

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Queries

For questions about the editorial process (including the status of manuscripts under review) or for technical support on submissions, please visit our Support Center.

Manuscript Format

All manuscripts must include a Title, Abstract and Highlights on separate pages, followed by the main manuscript text. The main manuscript text of brief reports, regular articles and quantitative reviews should include subsections carrying the headings Introduction, Methods, Results, Discussion & Implications. Reviews may deviate from this structure but must include a methods section that provides details on how the relevant literature was searched. The structure of commentaries is at the discretion of authors.

Essential Title Page Information

Title:Titles must be concise and informative and should have no more than 20 words. Titles are often used in information–retrieval systems. Avoid abbreviations and formulae where possible.

Author names and affiliations: Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the author's affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lowercase superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e–mail address of each author.

Corresponding author: Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that the e–mail address is given and that contact details are kept up to date by the corresponding author**.

Present/permanent address: If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract & Keywords

The abstract page must include a structured abstract of no more than 250 words that includes the following subsections:

Background: A brief summary of the research question and rationale for the study.

Method: A concise description of the methods employed to test the stated hypotheses, including details of the participants where relevant.

Results: A brief description of the main findings.

Conclusions: This section must include a clear statement about the implications of the findings for practice.

Immediately after the abstract, a maximum of 6 keywords should be provided, avoiding general and plural terms and multiple concepts (for example, avoid 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible (e.g., ADOS, ASD, etc). These keywords will be used for indexing purposes.

Graphical Abstract

Graphical abstracts are optional but encouraged to draw more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Please provide an image with a minimum of 531 X 1328 pixels (h X w) or proportionally more. The image should be readable at a size of 5 X13 cm using a regular screen resolution of 96 dpi. Preferred file types include TIFF, EPS, PDF or MS Office files.

See https://www.elsevier.com/graphicalabstracts for examples.

Introduction

The introduction should develop a clear rationale for the presented work on the basis of a concise overview of the relevant literature. Detailed literature reviews should be avoided.

Methods

This section will typically include sub–headings for a description of the Participants, Materials & Design, Procedures and Analysis. However, alternative sub–headings may be used to suit particular research approaches (e.g., case–studies, meta–analyses, imaging studies etc.)

The participants section should provide demographic information (age, sex, ethnicity, socio–economic status, etc.), and include details on where and how participants were recruited and how relevant clinical diagnoses were verified. Additional clinical information (e.g., intellectual functioning, co–morbidities, use of medication etc.) is desired and may be necessary for some research designs. Sample sizes should be justified by suitable power calculations although it is appreciated that it is not always feasible to obtain desired numbers of participants.

The materials, design and procedures must be described in sufficient detail for the work to be replicable. Authors must also include a statement confirming that the work was carried out in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Declaration of Helsinki as revised in 2000. In this context confirmation should also be given that participant or guardian informed consent was obtained where appropriate.

The analysis section should provide details of the statistical methods used including information on the significance thresholds and the methods used to correct for multiple comparisons where necessary. Information on inter–rater reliability and any data filtering / transformation that was applied should also be included here.

Results

The results should be set out transparently and in full and should conform to the formatting style of the American Psychological Association (http://www.apastyle.org/). Effect sizes must be reported for all significant and non–significant effects, and sufficient descriptive statistics must be provided for the effect size calculations to be replicated.

Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. The formatting of tables should conform to APA guidelines (http://www.apastyle.org/).

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General points

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use similar fonts.

- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.

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Discussion and Implications

The discussion section should draw together the findings and must end with a clear indication of the implications of the findings for practice under a separate subheading (Implications).

Acknowledgements

Collate acknowledgements in a separate section at the end of the main manuscript text and before the references. List here any sources of funding (including grant numbers where relevant) and briefly describe the role of the sponsor(s), if any, in study design; the collection, analysis or interpretation of data; the writing of the report; and the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Conflict of interest

At the end of the main manuscript text and before the references,authors must disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. If no such conflict of interest exists, this must be clearly stated. For further information and examples of conflict of interest statements please visit the following: https://www.elsevier.com/conflictsofinterest https://service.elsevier.com/app/answers/detail/a_id/286/supporthub/publishing A decision may be made by the Journal not to publish on the basis of the declared conflict.

References

In-text citations should conform to the formatting style of the American Psychological Association. Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full

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Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

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[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T. (2015). Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. http://dx.doi.org/10.17632/xwj98nb39r.1. Examples Reference to a journal publication: Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. Journal of Scientific Communications, 163, 51-59.

Reference to a book:

Strunk, W., Jr., &White, E. B. (2000). The elements of style. (4th ed.). New York: Longman, (Chapter4).

Reference to a chapter in an edited book:

Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), Introduction to the electronic age (pp. 281-304). New York: E–Publishing Inc.

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All submissions must be accompanied by a cover letter to confirm that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see https://www.elsevier.com/sharingpolicy), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically, without the written consent of the copyright–holder. To verify originality, your article may be checked by the originality detection service CrossCheck https://www.elsevier.com/editors/plagdetect

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Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for consideration. Please refer to relevant sections above for guidance if you are not yet in a position to confirm all of the following points.

Ensure that the following items are present:

- The title page is complete, one author has been designated as the corresponding author and contact details are provided (e-mail; full postal address)
- All necessary files have been uploaded and include all necessary sections
- All figures have been uploaded and figure captions are provided separately
- All tables are clear and include relevant captions and footnotes
- The manuscript has been 'spell&checked' and 'grammar–checked' References are in the correct format.
- All references mentioned in the Reference list are cited in the text, and vice versa
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- All sources of funding have been acknowledged and the authors have either declared conflicts of interest or confirmed that none exist
- The manuscript gives due consideration to the practical implications of the work, which are clearly stated in the abstract and thoroughly considered in a final section of the discussion

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Highlights are optional yet highly encouraged for this journal, as they increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

Data references

This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Preprint references

Where a preprint has subsequently become available as a peer-reviewed publication, the formal publication should be used as the reference. If there are preprints that are central to your work or that cover crucial developments in the topic, but are not yet formally published, these may be referenced. Preprints should be clearly marked as such, for example by including the word preprint, or the name of the preprint server, as part of the reference. The preprint DOI should also be provided.

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Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

Research data

This journal requires and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles.

Research data refers to the results of observations or experimentation that validate research findings, which may also include software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. When sharing data in one of these ways, you are expected to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

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If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

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During submission, you will be alerted to the opportunity to prepare and submit a manuscript to one of the Research Elements journals.

More information can be found on the Research Elements page.

Data statement

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

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B) http://dx.doi.org/10.1016/j.physletb.2010.09.059

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Appendix B

Recruitment Poster

Doctorate in Clinical Psychology

Lancaster University

My name is Becca and I am a trainee clinical psychologist at Lancaster university.

For my thesis I would like to understand what impact you think board games have on your wellbeing and functioning.

Do you play board games at least once a month?

Have you been diagnosed with Autism or Asperger's Syndrome?

Are you aged 18 or over?

Why am I doing this study?

I want to understand what helps to improve wellbeing for autistic adults.

What will you be asked to do?

I will meet you and ask you about your experiences of playing games and how this either helps you or makes things harder for you.

If you are interested in being involved,
please contact me:
Email: b.kenney@lancaster.ac.uk

Phone: 07508 375 658

Appendix C

Participant Information Sheet

The impact of table-top board games on wellbeing and functioning in autistic adults.

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

My name is Becca and I am conducting this research as a student on the doctoral programme in Clinical Psychology at Lancaster University, United Kingdom.

You have contacted me after seeing the poster advertising my research. I want to hear about the experiences of autistic adults who regularly play board games.

What is the study about?

The purpose of this study is to understand what you think the benefits of playing board games is on your wellbeing and functioning.

Do I have to take part?

No. It's completely up to you to decide whether or not you take part.

What will I be asked to do if I take part?

If you decide you would like to take part, I will meet you and ask you to talk about your experiences of playing games. Our conversations would be either audio-recorded or video-recorded.

This could be held online using Microsoft Teams, via telephone, or face-to-face at Lancaster University. Our conversations will last at least one hour. I may ask some people to meet me again later for a second interview.

Will my data be Identifiable?

The data collected for this study will be stored securely and only the researchers conducting this study will have access to this data.

- Audio and video recordings will be stored on secure university cloud storage and will destroyed once the data has been transcribed.
- Any files containing written data in relation to the study will be password protected (so no-one apart from me will be able to access them) and the computer itself will also be password protected.
- The typed version of your interview will be made anonymous by removing any identifying information including your name. Anonymised direct quotations from your interview may be used in the reports or publications from the study, so your name will not be attached to them. All reasonable steps will be taken to protect the anonymity of the participants involved in this project.
- All your personal data will be confidential and will be kept separately from your interview responses.
- There are some limits to confidentiality: if what is said in the interview makes me think that you, or someone else, is at significant risk of harm, I may have to break confidentiality and speak to my supervisor or someone else about this. If possible, I will tell you if I have to do this.

What will happen to the results?
The results will be summarised and reported in a thesis and will also be submitted for publication in an academic or professional journal in the future. Results may also be presented at conferences in the future.

Are there any risks?
There are no risks anticipated with taking part in this study. However, if you experience any distress after you take part then please make use of the resources provided at the end of this sheet.

Are there any benefits to taking part?
Although you may find participating interesting, there are no direct benefits in taking part. However, you might enjoy sharing your experiences and talking about your hobby. We hope to provide you an opportunity for your voice to be heard.

Who has reviewed the project?
This study has been reviewed and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University and by the research team on the Lancaster University doctorate in clinical psychology programme.

Where can I obtain further information about the study if I need it?
If you have any questions about the study, please contact the main researcher:

Email: b.kenney@lancaster.ac.uk
Project title: The impact of table-top board games on wellbeing and functioning in autistic adults.
Supervisor: Ian Smith
Supervisor email: i.smith@lancaster.ac.uk
Supervisor phone number: 01524592282

Complaints
If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email: l.machin@lancaster.ac.uk
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

Thank you for taking the time to read this information sheet.

Resources in the event of distress
Should you feel distressed either as a result of taking part, or in the future, the following resources may be of assistance:

- The National Autistic Society https://www.autism.org.uk/
- Qwell provides free, safe and anonymous mental wellbeing support for adults across the UK with qualified practitioners https://www.qwell.io/
- The Autism Alliance is a network of charities which support adults with autism across the UK https://www.autism-alliance.org.uk/
- Samaritans is a 24-hour service which you can contact for support on 116 123.

Appendix D

Accessible Version of Participant Information Sheet

The Impact of Table-top Board Games on Wellbeing and Functioning in Autistic Adults.

For further information about data processing and your data rights visit: www.lancaster.ac.uk/research/data-protection

My name is Becca.

I am studying at Lancaster University, United Kingdom.

You have contacted me after seeing the poster advertising my research.

What is the study about?

I want to understand what you think the benefits of playing board games is on your wellbeing and functioning.

Do I have to take part?

No, it is your choice.

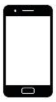
What will I be asked to do if I take part?

I will meet you and ask you about your experiences of playing board games.

I will record us talking so that I can type it up on a computer.

We could talk on Microsoft Teams,

or we could talk on the phone



or we could meet at Lancaster University.

Our conversations will last at least one hour.

I may ask to talk to you again another time.

What happens to my data?

Lancaster University will look after your data from this study.

Recordings will be stored securely.

I will safely get rid of the recording once I have typed up our conversation.

All information will be password protected.

I might use things that you have said in my report, but nobody will know it was you who said it.

Our conversations are private unless I am worried that you or someone else is at risk of harm. If this happens, I will talk to my supervisor about our conversations.

What will happen to the findings from the study?
If you would like a summary of my findings, please let me know.

Who has checked the project?
This study has been checked and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University and by the research team on the Lancaster University doctorate in clinical psychology programme.

What if I have a question?
If you have any questions about the study, please contact me:

Email: b.kenney@lancaster.ac.uk
Project title: The impact of table-top board games on wellbeing and functioning in autistic adults.
Supervisor: Ian Smith
Supervisor email: i.smith@lancaster.ac.uk
Supervisor phone number: 01524592282

What if I'm unhappy with the study?
If you do not want to speak to me, you can contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email: l.machin@lancaster.ac.uk
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

What if I feel upset?
Should you feel upset either as a result of taking part, or in the future, please get support from:

- https://www.autism.org.uk/
- https://www.autism-alliance.org.uk/
- Talk to someone at Qwell: https://www.qwell.io/
- Samaritans (Call free on 116 123).

Appendix E

Blank Consent Form

Project title: The impact of table-top board games on wellbeing and functioning in autistic adults.

Name of Researchers: Rebecca Kenney, Dr Ian Smith, Dr Miriam Sturdee
Email: b.kenney@lancaster.ac.uk

Please tick each box

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time during my participation in this study and within two weeks after I took part in the study, without giving any reason. If I withdraw within two weeks of taking part in the study my data will be removed.	☐
3. I understand that any information given by me may be used in future reports, academic articles, publications or presentations by the researcher/s, but my personal information will not be included and all reasonable steps will be taken to protect the anonymity of the participants involved in this project.	☐
4. I understand that my name/my organisation's name will not appear in any reports, articles or presentation without my consent.	☐
5. I understand that any interviews will be either audio-recorded or video-recorded and transcribed and that data will be protected on encrypted devices and kept secure.	☐
6. I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.	☐
7. I agree to take part in the above study.	☐

________________________________ ____________________ ________

____
Name of Participant Date Signature

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher ____________________________ Date ____________

One copy of this form will be given to the participant and the original kept in the files of the researcher at Lancaster University

Appendix F

Initial Screening Demographic Questionnaire

Please tick the category that represents your age group:

☐ Below 18 years

☐ 18-25

☐ 26-35

☐ 36- 45

☐ 46-55

☐ 55+

Please write the gender that you identify as below:

Do you have a diagnosis of either Asperger's Syndrome or Autism Spectrum Condition?

☐ Yes

☐ No

How long ago did you receive your diagnosis?

Which country do you live in?

How often do you play board games?

How long ago did you begin to regularly play board games?

Do you play board games with the same group each time you play, or a different group?

Do you have a game that you play most often? If so, please write the name of it below:

Where do you tend to play board games? (E.g. at a gaming café, at home)

Appendix G

Example Interview Topic Guide- Interview One

At the start of the interview:
Thank you for meeting with me today to take part in my study about the impact of board games on your wellbeing and functioning.
-Check participant still consents
As you are aware, our conversation will be audio/video recorded today.
Please only share what you feel safe and comfortable to share. If at any point you need to take a break or you would like to stop our conversation, please let me know. Our conversation will last around one hour but it might be longer or shorter. Is there a time you need to finish by?

1. What difficulties do you think your autism causes for you?

   Prompt: can you tell me more about that?

2. Is there anything about your autism that makes you unhappy?

   Prompts: Please can you give examples?

3. When did you start playing board games?

   Prompt: Did you notice any changes in your autism around this time?

4. Does autism impact on your ability to play board games?

   Prompt: How does this impact on your game play? Is there anything you do to adapt game play due to this?

5. Do you think there are any benefits of playing board games on your autism?

   Prompt: How have these benefits/skills been transferable/ impacted on your day-to-day life? Have these benefits impacted on your general wellbeing? Have these benefits impacted on your general functioning? Please can you provide examples.

6. Are there any negative impacts of playing board games on autism?

   Prompt: Have these had an impact on your day-to-day life as an adult? Have these negative impacts had an effect on your general wellbeing? How have these impacts effected your general functioning? Please can you provide examples.

7. What do board games mean to you and your wellbeing and functioning overall?

   Prompt: Are there more positive impacts or negative impacts of board games on your wellbeing and functioning?

At the end of the interview:
We have now completed the interview. Thank you for taking part in the interview. As advised on the participant information sheet, I may contact you for a follow-up meeting to ask some more questions. Is this okay?

Appendix H

Example Interview Topic Guide- Interview 10

At the start of the interview:
Thank you for meeting with me today to take part in my study about the impact of board games on your wellbeing and functioning. When we talk about board games, the focus is on table top games rather than role-playing games where you act out the character.
-Check participant still consents
As you are aware, our conversation will be audio/video recorded today.
Please only share what you feel safe and comfortable to share. If at any point you need to take a break or you would like to stop our conversation, please let me know. Our conversation will last around one hour but it might be longer or shorter. Is there a time you need to finish by?

1. Can you start by telling me what autism means to you?

2. What difficulties do you think your autism causes for you?

   Prompt: can you tell me more about that?
   Impact at this point in your life?

3. Did you notice and changes in autism around the time that you started playing board games?

   Prompt: Can you give examples
   Any changes in the way you view autism and how it impacts on you as a result of playing board games?

4. How has playing board games impacted on [‘X’ earlier highlighted difficulty]?

   Prompt: How have these benefits/skills/ negatives been transferable/ impacted on your day-to-day life?
   Have these benefits/negatives impacted on your general wellbeing?
   Have these benefits/negatives impacted on your general functioning? Please can you provide examples.

5. Are there any ways that board gaming can be applied to your wider life?

   Prompt: Any ways that board gaming helps you that are applied to life outside of the board gaming community?

6. What specifically about board games makes them helpful as oppose to other hobbies/ leisure activities?

   Prompt: Are there any things that board gaming provides that other hobbies can’t?
   What is it that drew you to board gaming?

Can you give examples of ways that board gaming helps that's different from other leisure activities?

7. What do board games mean to you and your wellbeing and functioning overall?

   Prompt: Are there more positive impacts or more negative impacts of board games on your wellbeing and functioning?

8. Are there any negative impacts of board gaming on your wellbeing and functioning?

9. As we come to the end of today's in conversation, I wondered if there's anything generally about board games and autism and how they impact on like your wellbeing and functioning that you feel like we haven't covered today that you want would want to be captured in the study?

At the end of the interview:
We have now completed the interview. Thank you for taking part in the interview. As advised on the participant information sheet, I may contact you for a follow-up meeting to ask some more questions. Is this okay?

Section Three: Critical Appraisal

Rebecca Bennett

Doctorate in Clinical Psychology

Lancaster University

Faculty of Health and Medicine

Summary of the Aims of the Critical Appraisal

This critical appraisal of my work aims to outline the literature review and the research paper and draw together their findings. This will include discussions of my motivations to carry out work in this field, along with the influence of my own stance within qualitative research. The Grounded Theory research approach will be discussed and the strengths and limitations of the chosen approaches will be explored. Finally, I will explore considerations that were made during the process, along with future steps that can be taken following this work.

Outline of the Literature Review

The aim of the literature review was to understand the experiences of autistic individuals who engage in multiplayer online gaming (MOG) activity. These types of video games allow people to interact and play with each other in a shared virtual game environment. Recent research has shown both a wealth of benefits of MOG activity (Raith et al., 2021), along with contrasting research relating to negative impacts of MOGs (Fox et al., 2018; King et al., 2016). Given that autistic people spend significantly more time gaming than their neurotypical peers (Mazurek & Engelhardt, 2013), it is no surprise that there are a growing number of qualitative studies that explore the experiences of autistic individuals who engage in MOG activity. However, I noticed that these studies had yet to be systematically reviewed. I considered that reviewing the qualitative studies in the field would allow me to gain a rich understanding of the advantages and disadvantages of MOG engagement for autistic individuals, which could help inform further areas that need researching. I therefore conducted a qualitative systematic review, and the studies identified for inclusion in the review were synthesised using a meta-ethnographic approach. Four new themes emerged from the analysis: *1) Relationships in MOGs are built through a platform of opportunity, 2) Multiplayer online games are an opportunity to practise and develop communication skills with reduced barriers, 3) Emotional recognition, regulation and expression is facilitated through MOGs 4) A sense of belonging and self-esteem contributes to increased wellbeing.*

The review discussed both positive and negative aspects of MOG engagement within the context of the themes developed. The hope is that the findings from this review could be used clinically to help psychologists to think about how they can adapt the way they work to be more suitable for autistic individuals. Additionally, future areas of research were identified, such as to explore whether other recreational activities, which may be more accessible to those without technology within communities, may provide similar functions to multiplayer online gaming. One example of this could be table-top board gaming.

Outline of the Research Paper

The aim of the research paper was to examine qualitatively what impact autistic adults perceive playing table-top board games has on their wellbeing and functioning. After exploring research during the literature review which was undertaken as part of this project, I noticed that there was some anecdotal evidence suggesting that board games could be helpful for autistic individuals (Gelder, 2017). Further exploration of the field identified that there were two distinct types of board games: table-top board games (a game played around a table, typically involving a playing board) and table-top role-playing games (a game where players take on the role of a character and create a story and interact in the world of the game) (Game to Grow, n.d.). There are some clear distinct differences between these two types of games, and the anecdotal evidence in this area indicates that there could be different motivations, benefits and negative implications of playing the different types of games for autistic individuals (Gelder, 2017; Lamberg, 2023; Parker, 2023). Given this difference, I decided that my research needed to focus exclusively on one of the types of board gaming, and I was aware of another trainee undertaking research into table-top role-playing games. Therefore, I decided to focus my research onto table-top board games.

To my knowledge, no empirical research to date has explored what the perceived impact of table-top board game engagement is for autistic adults. Ten participants were recruited via volunteer sampling and they were interviewed about their experiences of table-top board gaming. Verbatim transcripts of the interviews were analysed using Constructivist

Grounded Theory techniques, based on the process outlined by Charmaz (2006). This technique was chosen because I wanted to understand the perceived benefits of board games for autistic adults through listening to their perspectives, whilst maintaining the rigor of a quantitative approach (Glaser & Strauss, 2017). The study identified three main concepts: a) the cycle of board game engagement, b) impact on aspects of autism, and C) impact on wellbeing and functioning. The interactions between parts within the concepts was represented using a diagrammatical model. The concepts were represented as ‘branches’ of the model. The way that the branches of the model interact created a feedback loop that meant that participants spent more time playing board games. The more time playing board games generally meant that participants were communicating better, forming better relationships, feeling more included and enjoying the games more. These parts contributed to them playing more games, becoming a virtuous cycle. In turn, these branches all led back to a general sense of improved wellbeing and functioning.

Implications from the Review and Research Paper

Whilst the topics of the literature review and the research paper differ, there are similarities in the results between the two. The review and the research paper both identify that games, whether table-top board games or multiplayer online games, have a positive impact on understanding and developing friendships. Additionally, both revealed that there was an impact on communication and interactions. Further, in both the literature review and the research paper, participants talked about the emotional impact of playing games and how this interacted with wellbeing and functioning. This indicates that table-top board gaming and multiplayer online gaming may have similar functions for autistic individuals. This could be because there are similarities in the mechanisms of both types of games. For example, both games were reported to provide a structure that encourages reciprocal interactions through turn taking, and both games were reported to help friendships through repeated interactions in an environment where there was reduced pressure. Further research could be helpful to understand how these mechanisms can be replicated in society to protect the wellbeing of autistic individuals.

The clinical implications from both the review and the research paper echo this story. For both, there are suggestions that more can be done proactively in the community to prevent mental health difficulties for autistic individuals, and therefore reduce the number of autistic individuals requiring a referral to mental health services. Additionally, there could be implications for how mental health professionals support autistic individuals. In turn, this would be beneficial not only to the autistic individuals who would potentially receive more person centred care, but would also potentially benefit staff in mental health services where they typically might feel like they do not know how to support autistic individuals. This has the potential to reduce burnout and moral injury (the difficult emotions that arise from knowing what care patients need but being unable to provide it) (Dean et al., 2019; Ford, 2019).

Motivations for Work in this Field

My interest in the field of autism stemmed from my experience of working in a child development psychology team as an Assistant Psychologist in 2018. The main remit of the team at the time was to contribute to autism assessments for children and young people. Through working in this role, I learnt a lot about autism, particularly through the children and young people I met during my time working in the team. One thing that particularly stood out for me was how many of the families repeatedly told the same stories of a lack of support for the autistic individual, and when support was received, this was often not tailored towards the needs of the person. Through these stories, I also heard tales of resilience, whereby families and people with autism had found their own ways of coping and thriving in a world that is not set up for their needs. Whilst it was great to hear of the variety of ways people had found to cope and thrive, it opened my eyes to the huge inequalities that autistic individuals face when it comes to accessing support. In particular, given my career, I noticed these inequalities in terms of access to mental health support, although it was apparent to me that this was not the only area of inequality. As a service, we spent our days conducting thorough and timely autism assessments, and doing our best to deliver the outcomes of these assessments in a compassionate and person-centred way. Strikingly though, the service was not commissioned to offer any post-diagnostic support. This resulted in a noticeable gap for support for autistic individuals. For me, this set me forward on a journey of wanting to complete research in the field of autism, particularly looking into community approaches to supporting autistic individuals. When I started on training, I hoped that I would be able to follow through with my aims of completing research in the field of autism and when this project was proposed by my now supervisor, the opportunity stood out to me. My hope is that this project inspires further research into community support for autistic people, and contributes to changes in the way that we, as clinicians, support autistic individuals.

Working Qualitatively

My Epistemological stance led me down the path of constructivist Grounded Theory, which suggests that knowledge and reality are socially constructed, generating an assumption that there are multiple realities (Charmaz, 2006). My understanding is that everyone has different beliefs and attitudes, which influence how they interpret and interact with the world around them. In constructivist Grounded Theory, the data and analysis are co-created by the researcher and the participants. This motivated me to use a constructivist Grounded Theory approach in my work, as I wanted to gain a deep understanding of the beliefs, experiences and interpretations of my participants. Whilst other qualitative approaches would also allow me to gain a deep understanding, I chose to conduct constructivist Grounded Theory because I value that the approach acknowledges that there is not a single reality and that the results are an interpretation of the processes and meanings behind experiences. Further, I valued that the process of Grounded Theory uses qualitative data whilst maintaining the rigor of a quantitative approach (Glaser & Strauss, 2017).

Similarly, for the literature review, I chose to use meta-ethnography because it allowed me to re-analyse and interpret the data to construct a new understanding of the data from the qualitative studies. Noblit & Hare (1988) described this as ‘making a whole into something more than parts alone imply’. This allows for a richer, more comprehensive understanding of the data than the findings from a single study alone. Whilst there are lots of other synthesis approaches that also offer a rich and comprehensive understanding of the data, meta-ethnography stood out to me because it allows for interpretation within the approach, rather than focusing on summarising the existing data.

During the qualitative data collection and analysis process, I kept a log of my reflections to document my thoughts during the different stages of the process. In addition, my research supervisor listened to the full recording of the first interview I conducted and read the transcript with the corresponding initial codes and focused codes. This helped me to minimise the risk of bias in the collection and analysis process. However, it is always important to acknowledge that despite the strategies used to mitigate the risk of subjectivity in the data collection and analysis process, the influence of the researcher can not be entirely removed from any piece of qualitative research (Finlay, 2002; Le Gallais, 2008).

Avoiding Limitations in Future Research

During recruitment, there were eight people who contacted me to express an interest in participating in my study who did not go on to complete the screening questionnaire or the consent form. I reflected on this, and whilst there were multiple reasons that this could have occurred, I think the format which participants were required to return the consent form could have been simplified, which may have encouraged more people to readily return it. I created the consent form on Microsoft Word, making signing the document electronically a difficulty for some people. In future when carrying out research, I think it would be more accessible to have a link to a questionnaire that is designed to be completed electronically, or consider adding to my ethics application that response from a participant’s email address confirming that they have read and are happy with the consent form, can be taken to demonstrate a signature.

On reflection, I think it would have been valuable to go through my interview schedule with an autistic individual, to understand how the questions might be interpreted from their perspective. During the interview process, some participants fed back that some questions did not make sense to them, and so I tweaked the wording of questions before the next participant's interview. This meant that my interview schedule and the process of the interviews became more streamlined as time went on. However, I think it would have been valuable to have this insight and input prior to commencing interviews.

As I have reflected on in the discussion section of the research paper, there were issues with using autism diagnosis for the inclusion criteria. I decided to use diagnosis for the criteria after discussions with my supervisors around the advantages and disadvantages of this approach. Whilst this criterion ensures that the data collected holds internal validity, it also potentially excludes some participants. Future research in the field might want to consider how it can increase accessibility by altering the inclusion criteria so that those who are self-diagnosed can opt to participate. Further, to uphold the internal validity that is gained from using diagnosis in the inclusion criteria, if the criteria is broadened to include self-diagnosis, using an autism screening tool such as the AQ10 (Allison et al., 2012) might be helpful for deciding participant eligibility. However, consideration would need to be given to ensure that any such tool was used in a way that is compassionate and non-harmful.

Other Considerations During the Process

One consideration during the design of the study was how I could increase accessibility of participation. This was important to ensure inclusivity, maximise my opportunities to reach sufficient participant numbers, and gain a representative sample. In order to do this, I offered for interviews to be conducted either in person, or remotely. Nine out of 10 participants chose to participate in the study remotely. For those participating remotely, there was no need to travel and this meant that participants did not need to live close to the university to participate. Additionally, findings from my systematic literature review suggested that there are reduced barriers to communication when interacting virtually rather than face-to-face, which could explain a preference for remote participation. Future research might want to explore increasing the range of participation modes further by, for example, conducting research interviews via an instant messaging platform. This would allow participants to communicate in a way that, in the literature review, was reported to be helpful for reducing barriers. Additionally, this would allow for the use of emoticons, which were highlighted to be helpful for expressing emotions.

Another reflection I had during the process of data collection was that I did not collect data on comorbid diagnoses and support received from mental health services. During interviews, some participants mentioned comorbid diagnoses and support received from mental health services, that could affect how they engage with table-top board gaming, and the aspects of the games that they find to be either challenging or helpful. However, the nature of researching participant’s lived experiences means that every participant’s story will be unique, and the experiences attributed to table-top board gaming can never truly be separated from other life experiences of the participant. Whilst I wanted to acknowledge that it could be that some of the changes attributed to engaging in table-top board gaming could have been a consequence of other life circumstances of the participants, my epistemological stance remains that there are multiple realities. Therefore, my view is that collecting information on comorbid diagnoses and mental health support may not be necessary as even with this information considered, each participant’s beliefs and experiences will be unique, and will shape the data in a unique way.

Next Steps

The National Health Service (NHS) in the UK has set out a Long Term Plan (NHS England, 2019), which has a specific aim around using community resources as a protective factor for mental health. Given that clinical psychologists are increasingly encouraged to have more of a community focus to their work (The British Psychological Society, 2018), they could work with third sector organisations such as charities and leisure organisations to educate them on the usefulness of activities which provide similar functions that have been identified as being helpful within board gaming (e.g., activities involving turn-taking, activities with clear rules and structure). Moreover, a next step for researchers might be to understand what factors contribute to a sense of ‘community’ for autistic people, using a qualitative approach to gain a rich insight into the views of what community means to autistic individuals. Further work could then be done clinically to promote a sense of community for autistic individuals, which in turn is likely to protect their psychological wellbeing. If this can prevent mental health difficulties for autistic people, it could reduce the number of people requiring a referral to mental health services, which is beneficial to individuals, as well as having cost-saving implications for services.

Additionally, there are elements from table-top board gaming and multiplayer online gaming that can be learnt from for use within the therapeutic setting. For example, the literature review demonstrated that emoticons could be useful for helping autistic people to recognise and express their emotions. This could be used as an adaptation within therapeutic settings. Other mechanisms that could be useful in the therapeutic setting could include having a turn-taking structure in therapy and setting clear rules. These may seem like small changes to make, but they could have a significant impact on improving the accessibility of mental health services, along with also being achievable for clinicians.

Conclusions

Ways to prevent mental health deterioration and promote psychological wellbeing within the autistic population are generally under researched. My projects combined aimed to contribute to the field, by exploring community-led activities (e.g., table-top board gaming, multiplayer online gaming) which are already popular amongst the autistic population, to determine the role that they have on psychological wellbeing and functioning. Both the research and the literature review identified benefits of table-top board gaming or multiplayer online gaming on mental health. Areas of future research and next steps have been suggested, along with how these findings can be implied clinically.

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Section Four: Ethics

Rebecca Bennett

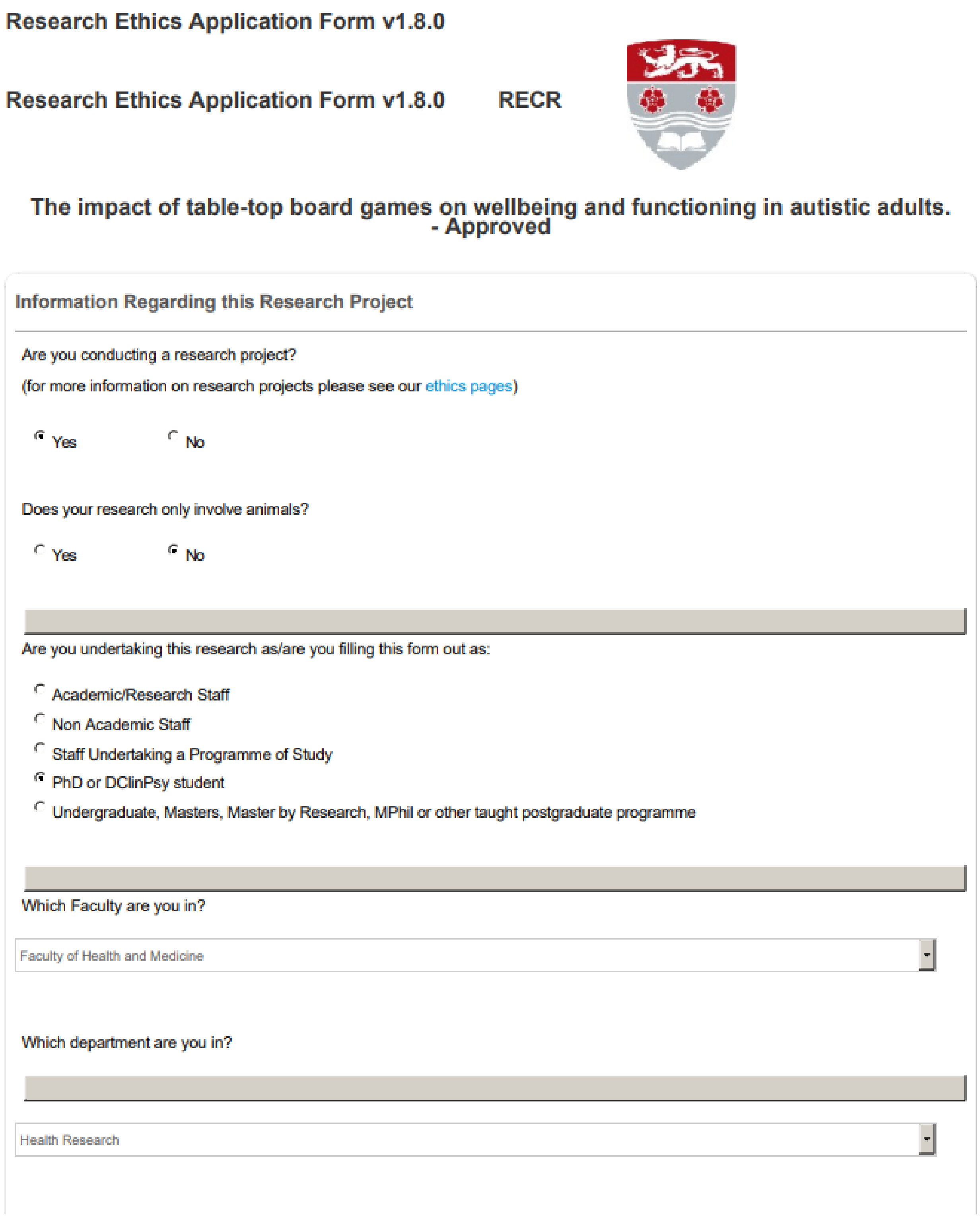
Doctorate in Clinical Psychology

Lancaster University

Faculty of Health and Medicine

N.B. Trainee surname has changed from ‘Kenney’ to ‘Bennett’ since the ethics application was submitted.

Ethics Application



Research Ethics Application Form v1.8.0

Research Ethics Application Form v1.8.0 **RECR**

The impact of table-top board games on wellbeing and functioning in autistic adults. - Approved

Information Regarding this Research Project

Are you conducting a research project?

(for more information on research projects please see our ethics pages)

● Yes ○ No

Does your research only involve animals?

○ Yes ● No

Are you undertaking this research as/are you filling this form out as:

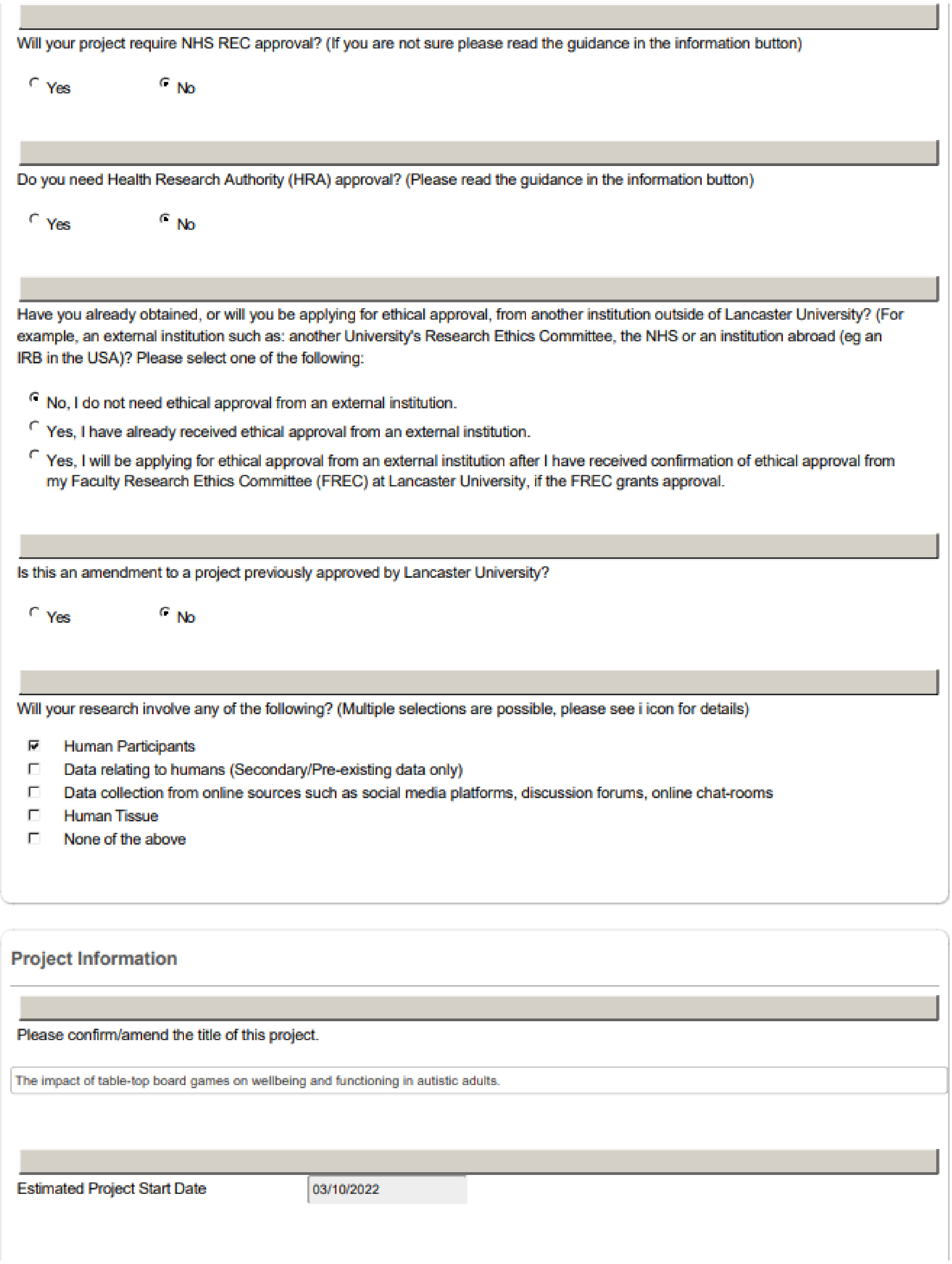
- ○ Academic/Research Staff
- ○ Non Academic Staff
- ○ Staff Undertaking a Programme of Study
- ● PhD or DClinPsy student
- ○ Undergraduate, Masters, Master by Research, MPhil or other taught postgraduate programme

Which Faculty are you in?

Faculty of Health and Medicine

Which department are you in?

Health Research



Will your project require NHS REC approval? (If you are not sure please read the guidance in the information button)

○ Yes ● No

Do you need Health Research Authority (HRA) approval? (Please read the guidance in the information button)

○ Yes ● No

Have you already obtained, or will you be applying for ethical approval, from another institution outside of Lancaster University? (For example, an external institution such as: another University's Research Ethics Committee, the NHS or an institution abroad (eg an IRB in the USA)? Please select one of the following:

● No, I do not need ethical approval from an external institution.
○ Yes, I have already received ethical approval from an external institution.
○ Yes, I will be applying for ethical approval from an external institution after I have received confirmation of ethical approval from my Faculty Research Ethics Committee (FREC) at Lancaster University, if the FREC grants approval.

Is this an amendment to a project previously approved by Lancaster University?

○ Yes ● No

Will your research involve any of the following? (Multiple selections are possible, please see i icon for details)

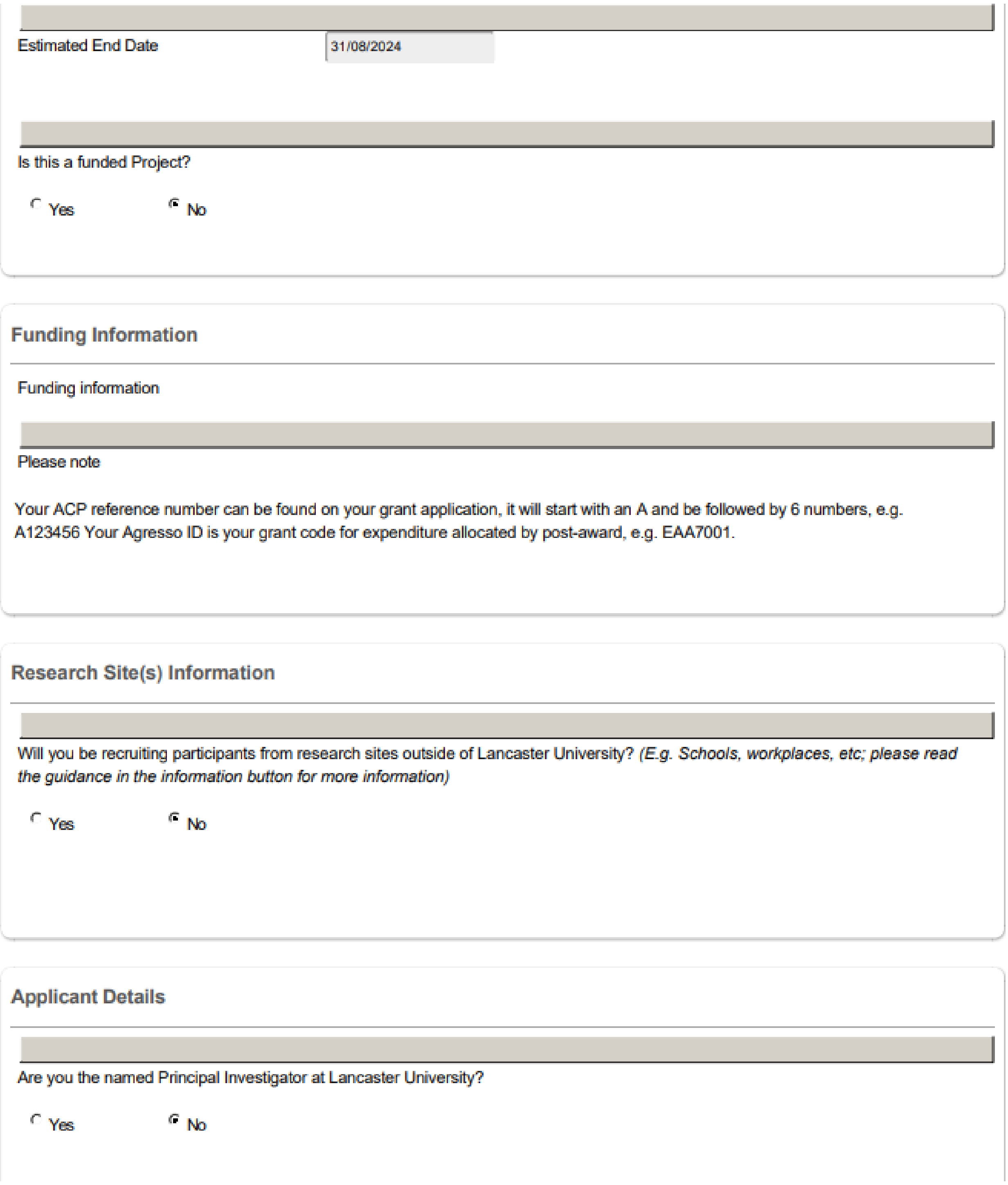
☑ Human Participants
☐ Data relating to humans (Secondary/Pre-existing data only)
☐ Data collection from online sources such as social media platforms, discussion forums, online chat-rooms
☐ Human Tissue
☐ None of the above

Project Information

Please confirm/amend the title of this project.

The impact of table-top board games on wellbeing and functioning in autistic adults.

Estimated Project Start Date 03/10/2022



Estimated End Date 31/08/2024

Is this a funded Project?

○ Yes ● No

Funding Information

Funding information

Please note

Your ACP reference number can be found on your grant application, it will start with an A and be followed by 6 numbers, e.g. A123456 Your Agresso ID is your grant code for expenditure allocated by post-award, e.g. EAA7001.

Research Site(s) Information

Will you be recruiting participants from research sites outside of Lancaster University? *(E.g. Schools, workplaces, etc; please read the guidance in the information button for more information)*

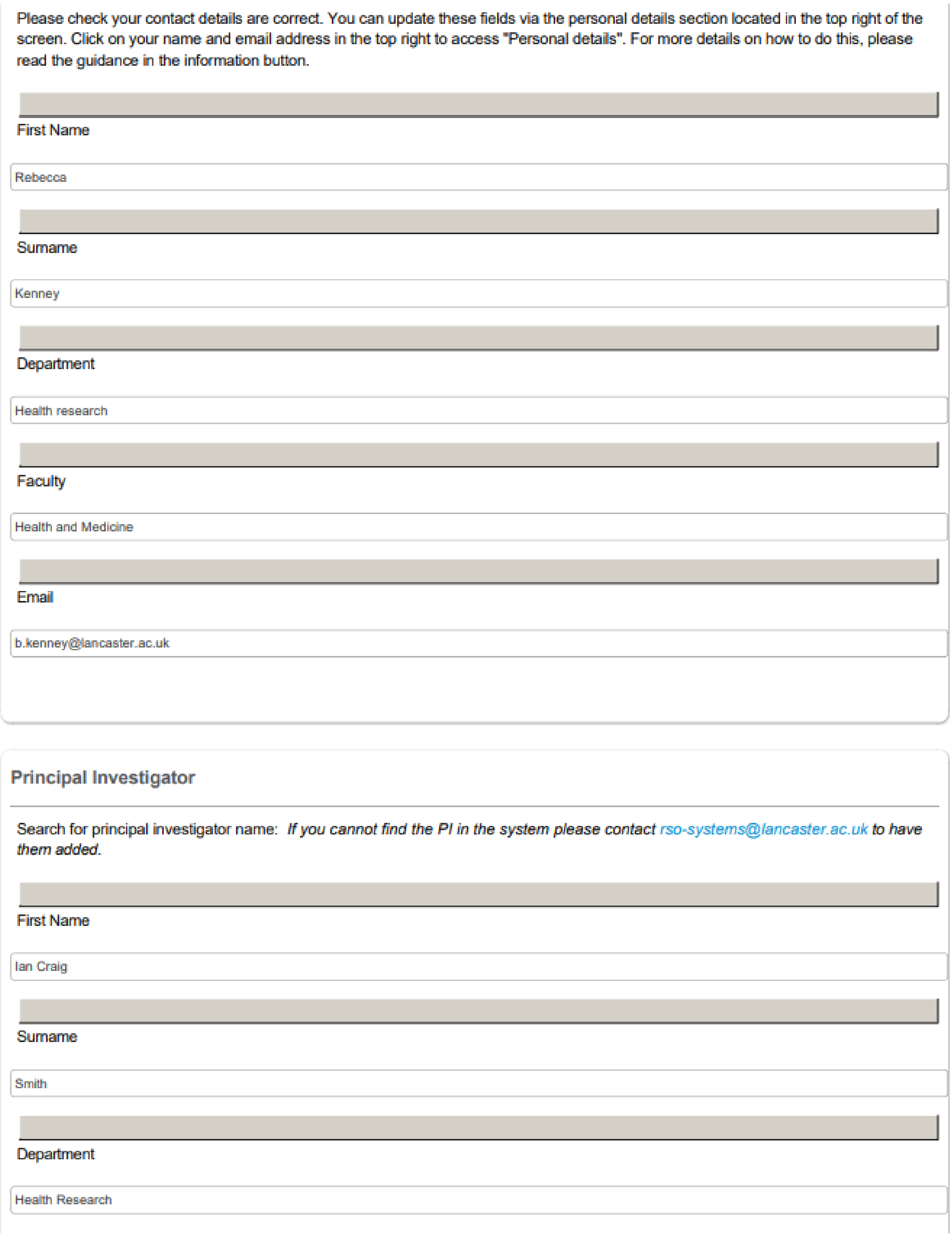
○ Yes ● No

Applicant Details

Are you the named Principal Investigator at Lancaster University?

○ Yes ● No

ETHICS SECTION



Please check your contact details are correct. You can update these fields via the personal details section located in the top right of the screen. Click on your name and email address in the top right to access "Personal details". For more details on how to do this, please read the guidance in the information button.

First Name

Rebecca

Surname

Kenney

Department

Health research

Faculty

Health and Medicine

Email

b.kenney@lancaster.ac.uk

Principal Investigator

Search for principal investigator name: *If you cannot find the PI in the system please contact rso-systems@lancaster.ac.uk to have them added.*

First Name

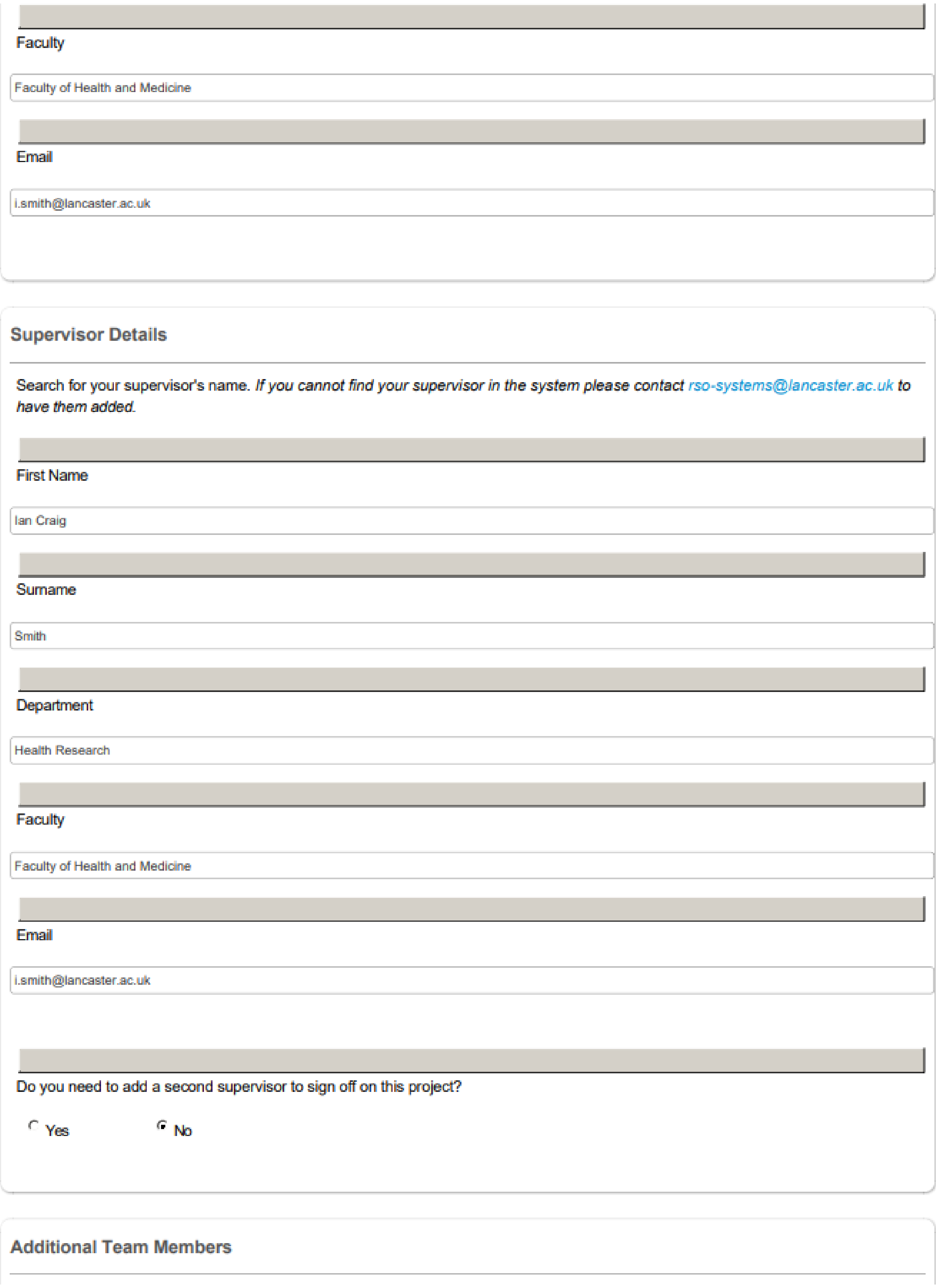
Ian Craig

Surname

Smith

Department

Health Research



Faculty

Faculty of Health and Medicine

Email

i.smith@lancaster.ac.uk

Supervisor Details

Search for your supervisor's name. *If you cannot find your supervisor in the system please contact rso-systems@lancaster.ac.uk to have them added.*

First Name

Ian Craig

Surname

Smith

Department

Health Research

Faculty

Faculty of Health and Medicine

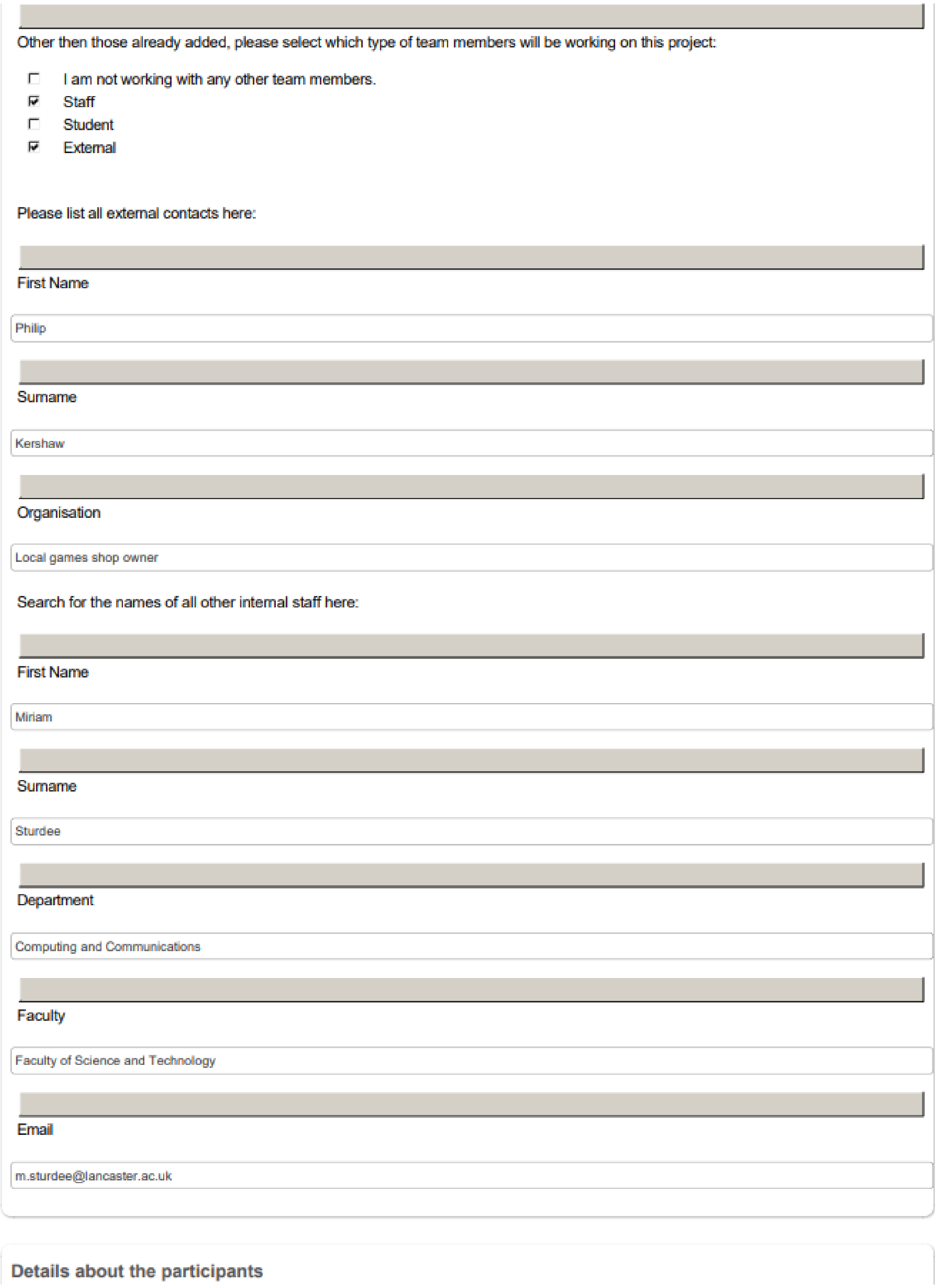
Email

i.smith@lancaster.ac.uk

Do you need to add a second supervisor to sign off on this project?

○ Yes ● No

Additional Team Members



Other then those already added, please select which type of team members will be working on this project:

- ☐ I am not working with any other team members.
- ☑ Staff
- ☐ Student
- ☑ External

Please list all external contacts here:

First Name

Philip

Surname

Kershaw

Organisation

Local games shop owner

Search for the names of all other internal staff here:

First Name

Miriam

Surname

Sturdee

Department

Computing and Communications

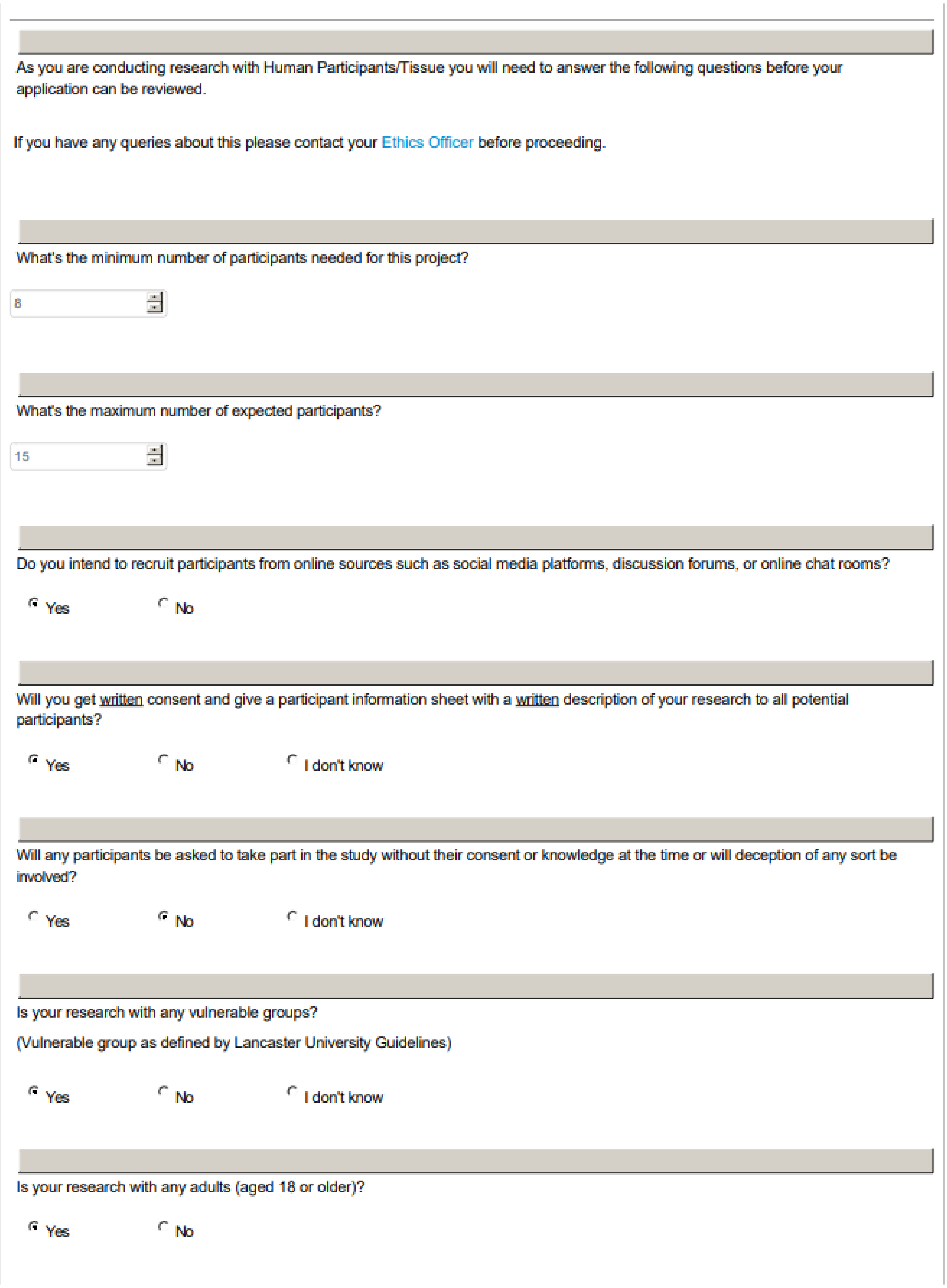
Faculty

Faculty of Science and Technology

Email

m.sturdee@lancaster.ac.uk

Details about the participants



As you are conducting research with Human Participants/Tissue you will need to answer the following questions before your application can be reviewed.

If you have any queries about this please contact your Ethics Officer before proceeding.

What's the minimum number of participants needed for this project?

8

What's the maximum number of expected participants?

15

Do you intend to recruit participants from online sources such as social media platforms, discussion forums, or online chat rooms?

● Yes ○ No

Will you get written consent and give a participant information sheet with a written description of your research to all potential participants?

● Yes ○ No ○ I don't know

Will any participants be asked to take part in the study without their consent or knowledge at the time or will deception of any sort be involved?

○ Yes ● No ○ I don't know

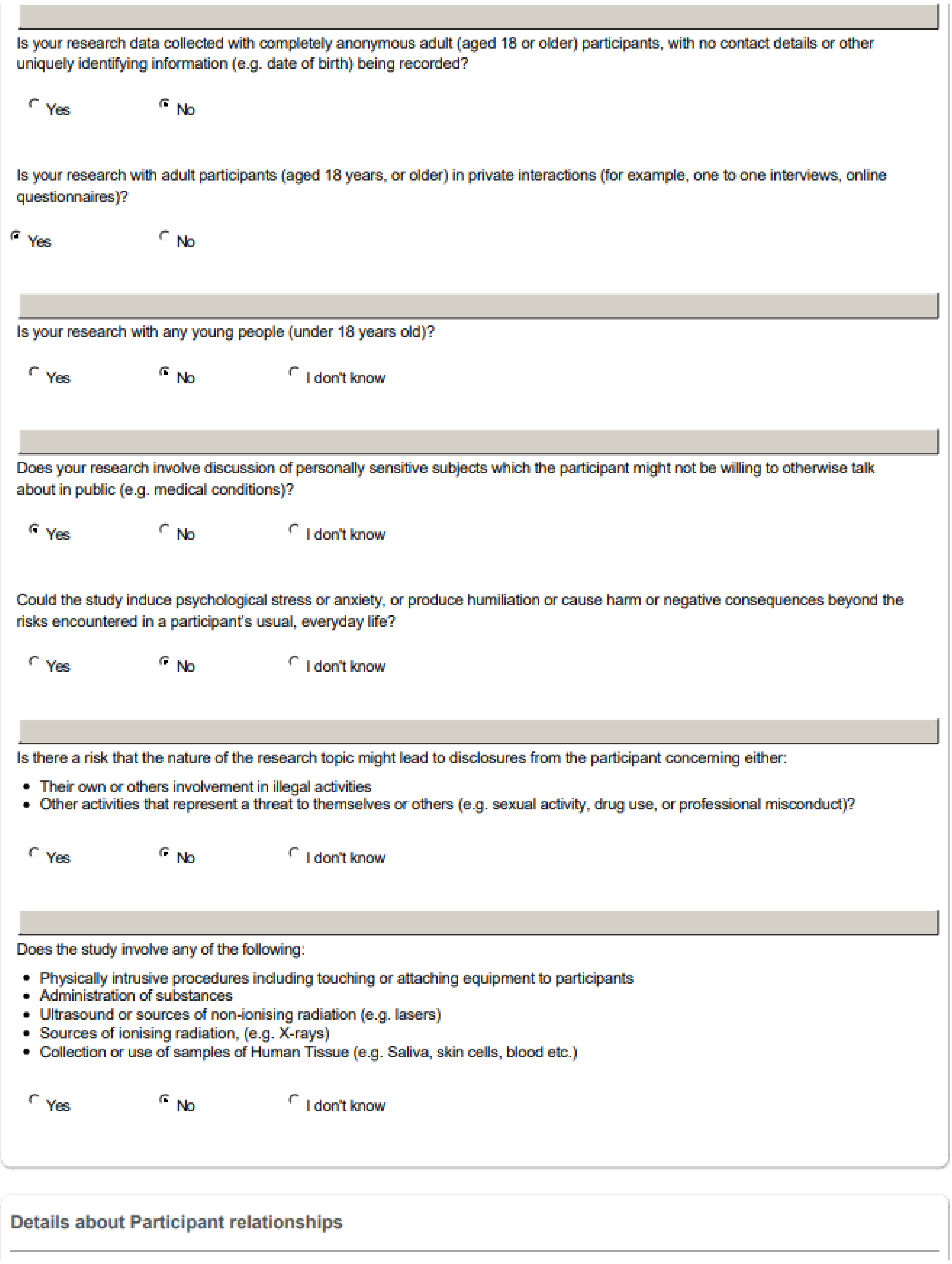
Is your research with any vulnerable groups?

(Vulnerable group as defined by Lancaster University Guidelines)

● Yes ○ No ○ I don't know

Is your research with any adults (aged 18 or older)?

● Yes ○ No



Is your research data collected with completely anonymous adult (aged 18 or older) participants, with no contact details or other uniquely identifying information (e.g. date of birth) being recorded?

○ Yes ● No

Is your research with adult participants (aged 18 years, or older) in private interactions (for example, one to one interviews, online questionnaires)?

● Yes ○ No

Is your research with any young people (under 18 years old)?

○ Yes ● No ○ I don't know

Does your research involve discussion of personally sensitive subjects which the participant might not be willing to otherwise talk about in public (e.g. medical conditions)?

● Yes ○ No ○ I don't know

Could the study induce psychological stress or anxiety, or produce humiliation or cause harm or negative consequences beyond the risks encountered in a participant's usual, everyday life?

○ Yes ● No ○ I don't know

Is there a risk that the nature of the research topic might lead to disclosures from the participant concerning either:

- Their own or others involvement in illegal activities
- Other activities that represent a threat to themselves or others (e.g. sexual activity, drug use, or professional misconduct)?

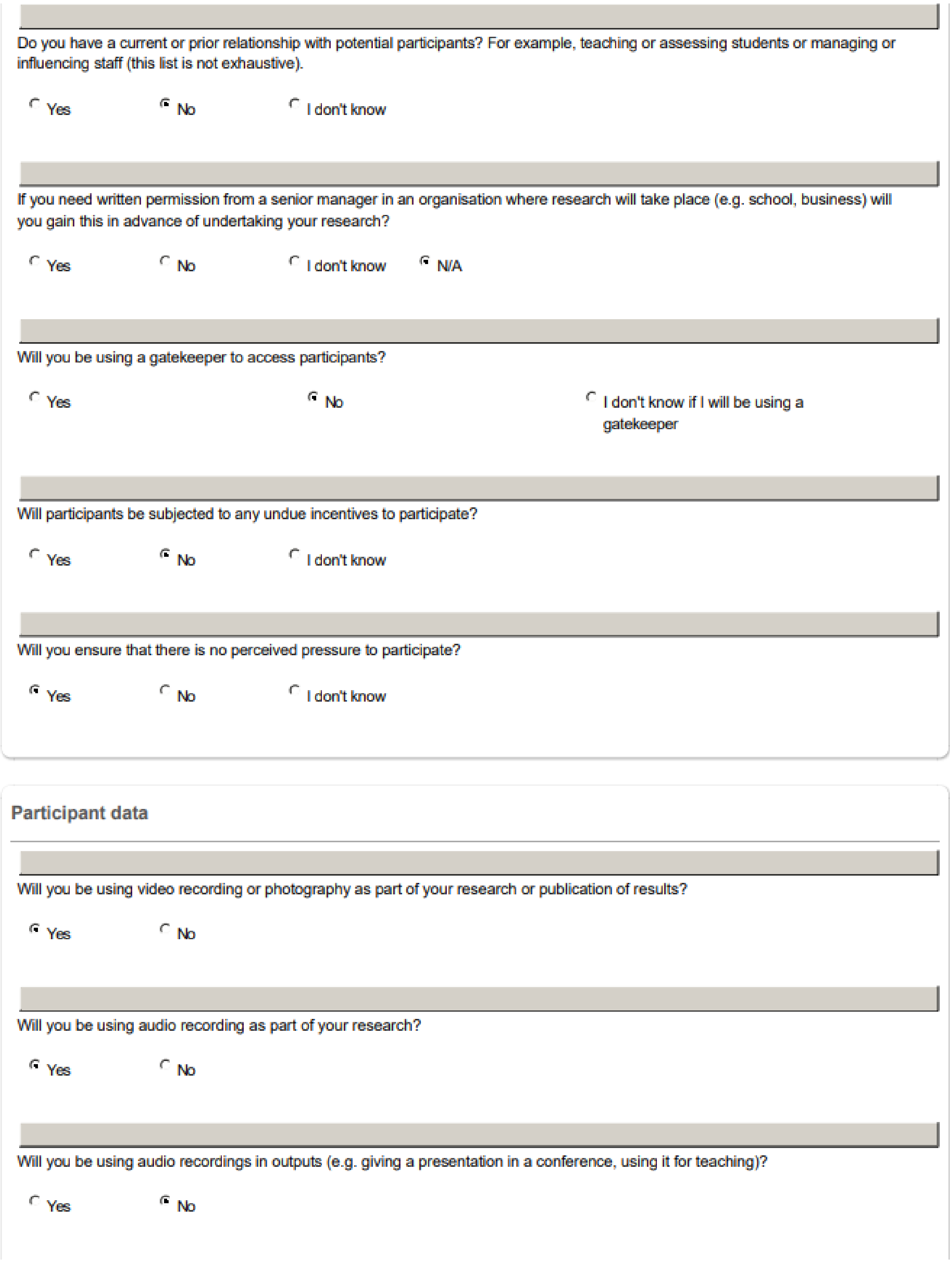
○ Yes ● No ○ I don't know

Does the study involve any of the following:

- Physically intrusive procedures including touching or attaching equipment to participants
- Administration of substances
- Ultrasound or sources of non-ionising radiation (e.g. lasers)
- Sources of ionising radiation, (e.g. X-rays)
- Collection or use of samples of Human Tissue (e.g. Saliva, skin cells, blood etc.)

○ Yes ● No ○ I don't know

Details about Participant relationships



Do you have a current or prior relationship with potential participants? For example, teaching or assessing students or managing or influencing staff (this list is not exhaustive).

○ Yes ● No ○ I don't know

If you need written permission from a senior manager in an organisation where research will take place (e.g. school, business) will you gain this in advance of undertaking your research?

○ Yes ○ No ○ I don't know ● N/A

Will you be using a gatekeeper to access participants?

○ Yes ● No ○ I don't know if I will be using a gatekeeper

Will participants be subjected to any undue incentives to participate?

○ Yes ● No ○ I don't know

Will you ensure that there is no perceived pressure to participate?

● Yes ○ No ○ I don't know

Participant data

Will you be using video recording or photography as part of your research or publication of results?

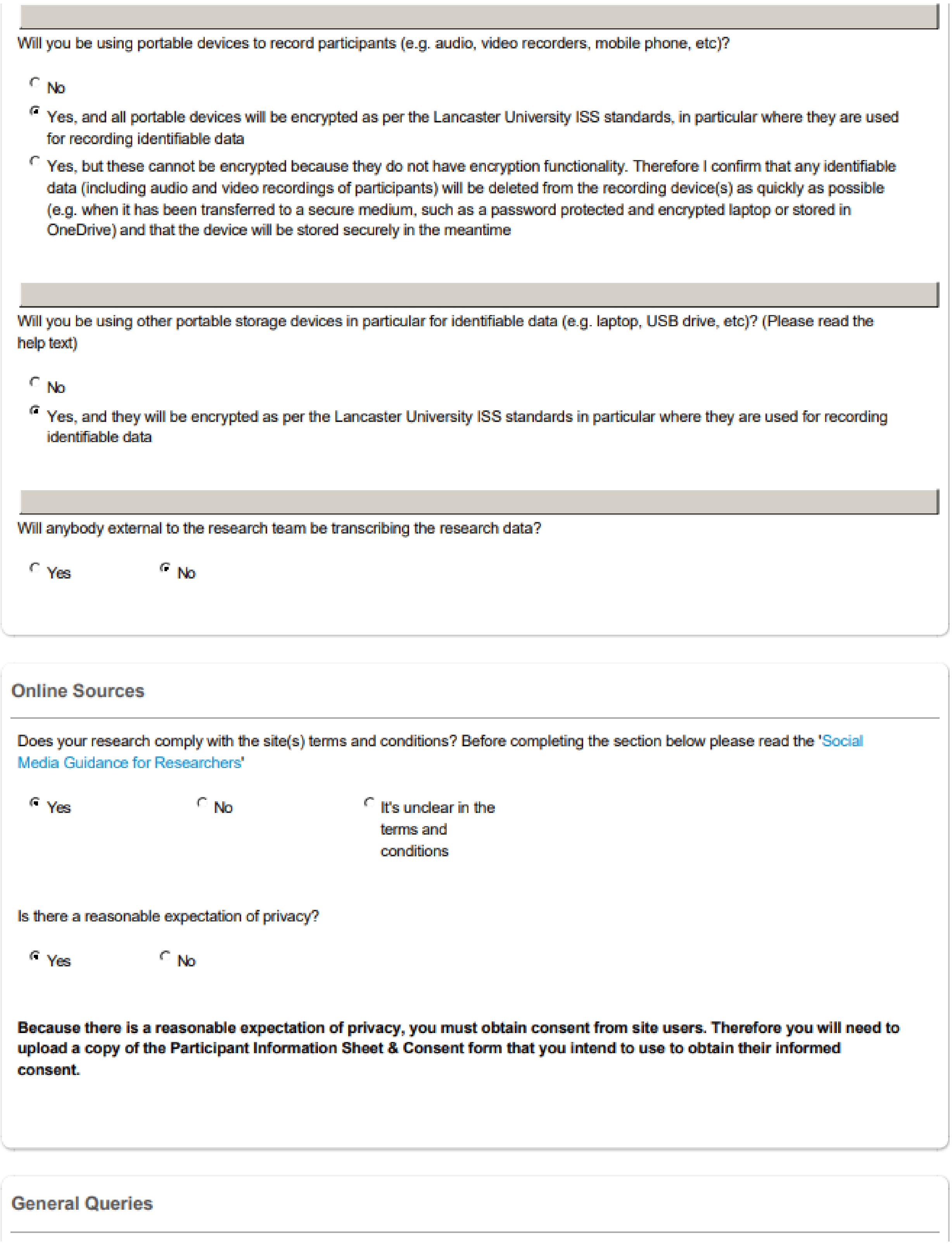
● Yes ○ No

Will you be using audio recording as part of your research?

● Yes ○ No

Will you be using audio recordings in outputs (e.g. giving a presentation in a conference, using it for teaching)?

○ Yes ● No



Will you be using portable devices to record participants (e.g. audio, video recorders, mobile phone, etc)?

○ No

● Yes, and all portable devices will be encrypted as per the Lancaster University ISS standards, in particular where they are used for recording identifiable data

○ Yes, but these cannot be encrypted because they do not have encryption functionality. Therefore I confirm that any identifiable data (including audio and video recordings of participants) will be deleted from the recording device(s) as quickly as possible (e.g. when it has been transferred to a secure medium, such as a password protected and encrypted laptop or stored in OneDrive) and that the device will be stored securely in the meantime

Will you be using other portable storage devices in particular for identifiable data (e.g. laptop, USB drive, etc)? (Please read the help text)

○ No

● Yes, and they will be encrypted as per the Lancaster University ISS standards in particular where they are used for recording identifiable data

Will anybody external to the research team be transcribing the research data?

○ Yes ● No

Online Sources

Does your research comply with the site(s) terms and conditions? Before completing the section below please read the 'Social Media Guidance for Researchers'

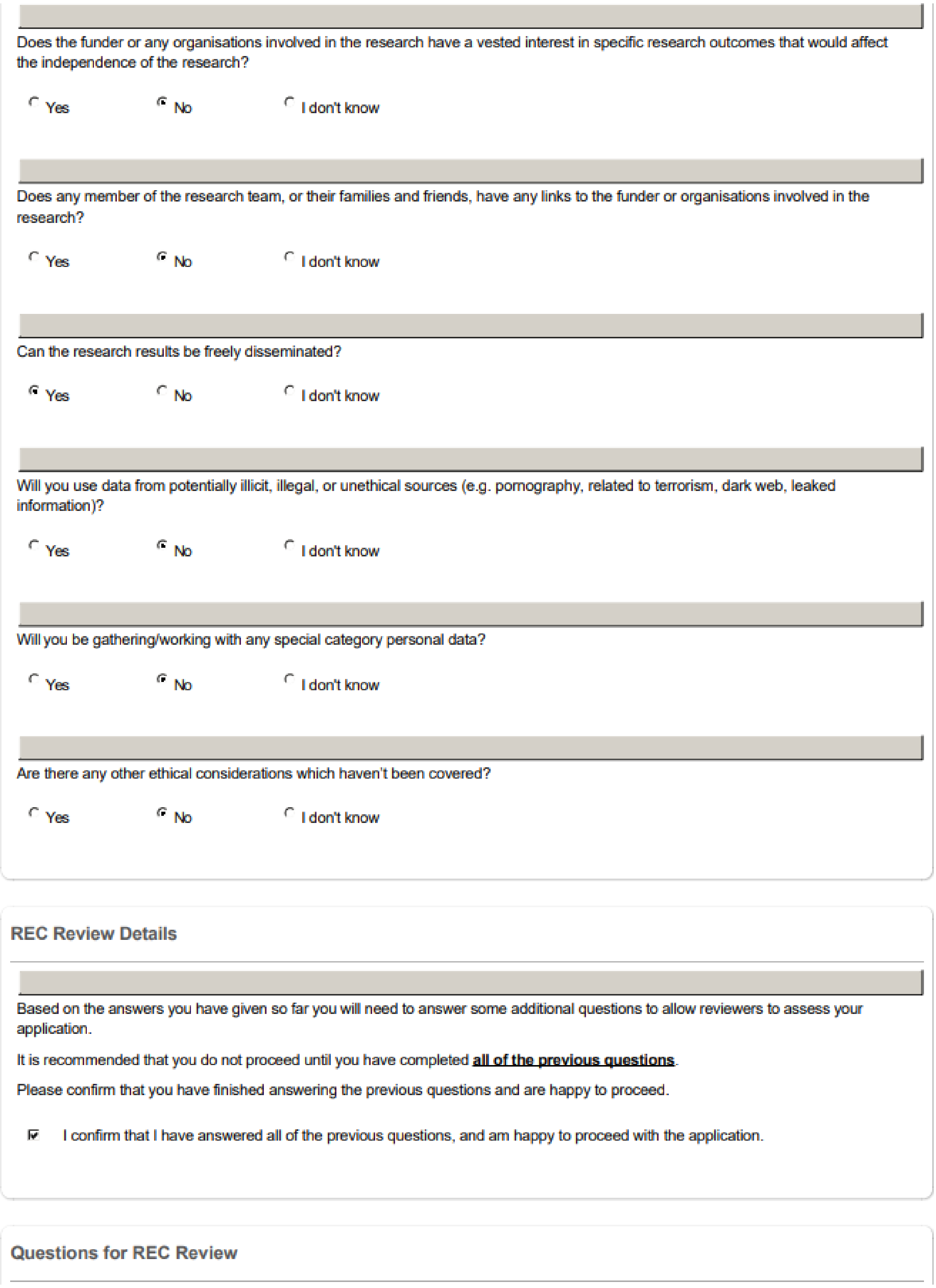
● Yes ○ No ○ It's unclear in the terms and conditions

Is there a reasonable expectation of privacy?

● Yes ○ No

Because there is a reasonable expectation of privacy, you must obtain consent from site users. Therefore you will need to upload a copy of the Participant Information Sheet & Consent form that you intend to use to obtain their informed consent.

General Queries



Does the funder or any organisations involved in the research have a vested interest in specific research outcomes that would affect the independence of the research?

○ Yes ● No ○ I don't know

Does any member of the research team, or their families and friends, have any links to the funder or organisations involved in the research?

○ Yes ● No ○ I don't know

Can the research results be freely disseminated?

● Yes ○ No ○ I don't know

Will you use data from potentially illicit, illegal, or unethical sources (e.g. pornography, related to terrorism, dark web, leaked information)?

○ Yes ● No ○ I don't know

Will you be gathering/working with any special category personal data?

○ Yes ● No ○ I don't know

Are there any other ethical considerations which haven't been covered?

○ Yes ● No ○ I don't know

REC Review Details

Based on the answers you have given so far you will need to answer some additional questions to allow reviewers to assess your application.

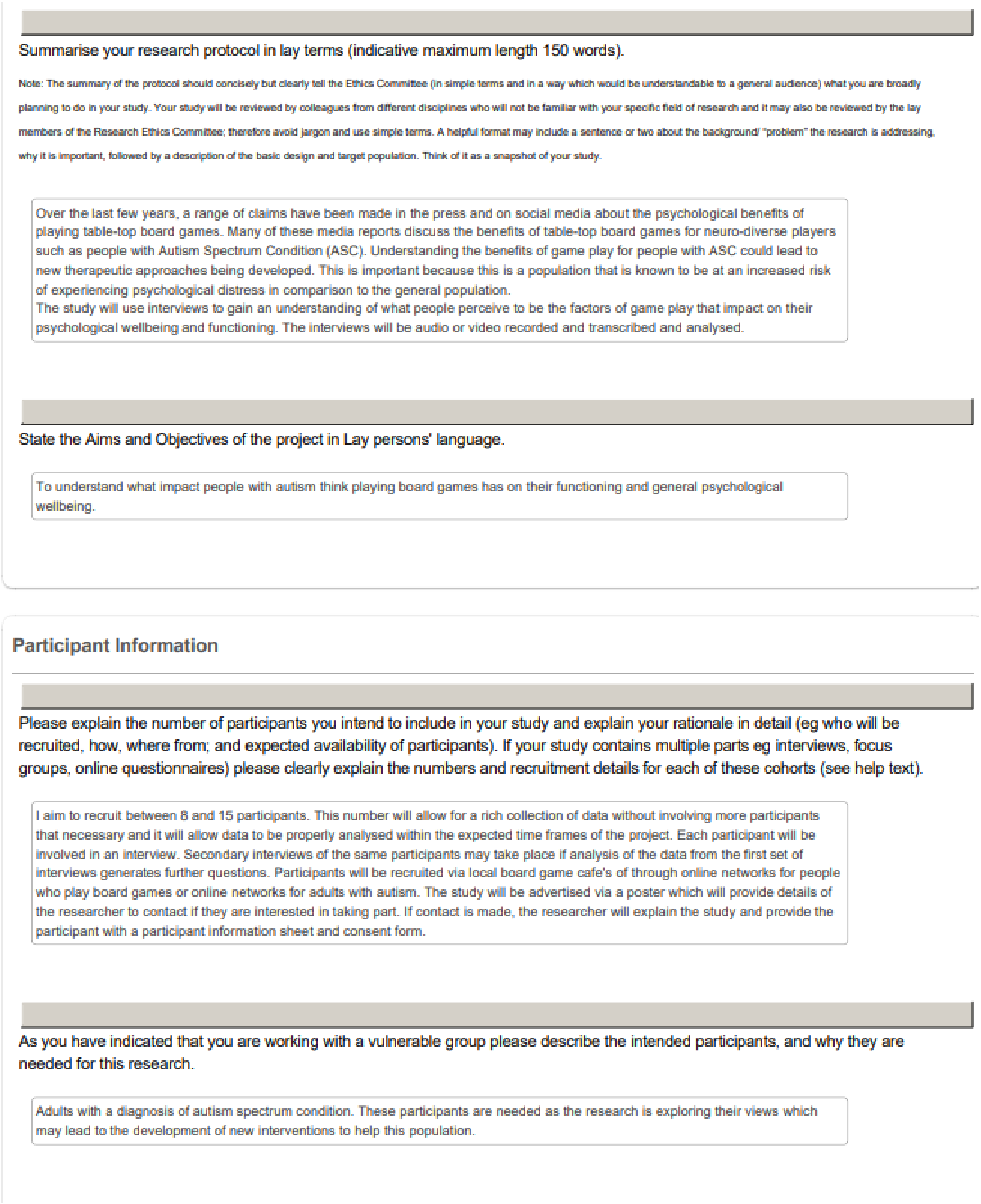
It is recommended that you do not proceed until you have completed **all of the previous questions**.

Please confirm that you have finished answering the previous questions and are happy to proceed.

☑ I confirm that I have answered all of the previous questions, and am happy to proceed with the application.

Questions for REC Review

ETHICS SECTION



Summarise your research protocol in lay terms (indicative maximum length 150 words).

Note: The summary of the protocol should concisely but clearly tell the Ethics Committee (in simple terms and in a way which would be understandable to a general audience) what you are broadly planning to do in your study. Your study will be reviewed by colleagues from different disciplines who will not be familiar with your specific field of research and it may also be reviewed by the lay members of the Research Ethics Committee; therefore avoid jargon and use simple terms. A helpful format may include a sentence or two about the background/ "problem" the research is addressing, why it is important, followed by a description of the basic design and target population. Think of it as a snapshot of your study.

Over the last few years, a range of claims have been made in the press and on social media about the psychological benefits of playing table-top board games. Many of these media reports discuss the benefits of table-top board games for neuro-diverse players such as people with Autism Spectrum Condition (ASC). Understanding the benefits of game play for people with ASC could lead to new therapeutic approaches being developed. This is important because this is a population that is known to be at an increased risk of experiencing psychological distress in comparison to the general population.

The study will use interviews to gain an understanding of what people perceive to be the factors of game play that impact on their psychological wellbeing and functioning. The interviews will be audio or video recorded and transcribed and analysed.

State the Aims and Objectives of the project in Lay persons' language.

To understand what impact people with autism think playing board games has on their functioning and general psychological wellbeing.

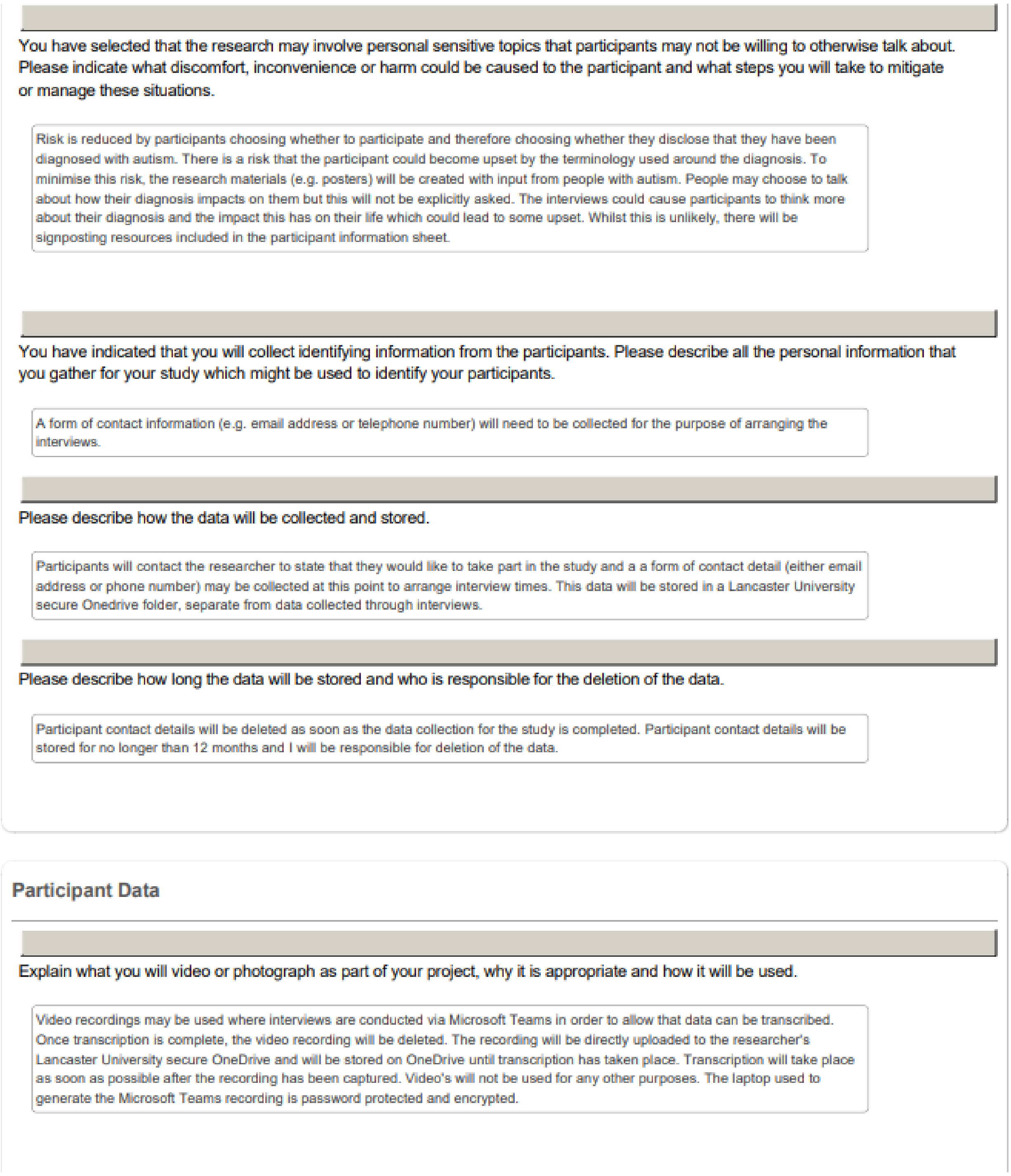
Participant Information

Please explain the number of participants you intend to include in your study and explain your rationale in detail (eg who will be recruited, how, where from; and expected availability of participants). If your study contains multiple parts eg interviews, focus groups, online questionnaires) please clearly explain the numbers and recruitment details for each of these cohorts (see help text).

I aim to recruit between 8 and 15 participants. This number will allow for a rich collection of data without involving more participants that necessary and it will allow data to be properly analysed within the expected time frames of the project. Each participant will be involved in an interview. Secondary interviews of the same participants may take place if analysis of the data from the first set of interviews generates further questions. Participants will be recruited via local board game cafe's of through online networks for people who play board games or online networks for adults with autism. The study will be advertised via a poster which will provide details of the researcher to contact if they are interested in taking part. If contact is made, the researcher will explain the study and provide the participant with a participant information sheet and consent form.

As you have indicated that you are working with a vulnerable group please describe the intended participants, and why they are needed for this research.

Adults with a diagnosis of autism spectrum condition. These participants are needed as the research is exploring their views which may lead to the development of new interventions to help this population.



You have selected that the research may involve personal sensitive topics that participants may not be willing to otherwise talk about. Please indicate what discomfort, inconvenience or harm could be caused to the participant and what steps you will take to mitigate or manage these situations.

Risk is reduced by participants choosing whether to participate and therefore choosing whether they disclose that they have been diagnosed with autism. There is a risk that the participant could become upset by the terminology used around the diagnosis. To minimise this risk, the research materials (e.g. posters) will be created with input from people with autism. People may choose to talk about how their diagnosis impacts on them but this will not be explicitly asked. The interviews could cause participants to think more about their diagnosis and the impact this has on their life which could lead to some upset. Whilst this is unlikely, there will be signposting resources included in the participant information sheet.

You have indicated that you will collect identifying information from the participants. Please describe all the personal information that you gather for your study which might be used to identify your participants.

A form of contact information (e.g. email address or telephone number) will need to be collected for the purpose of arranging the interviews.

Please describe how the data will be collected and stored.

Participants will contact the researcher to state that they would like to take part in the study and a a form of contact detail (either email address or phone number) may be collected at this point to arrange interview times. This data will be stored in a Lancaster University secure Onedrive folder, separate from data collected through interviews.

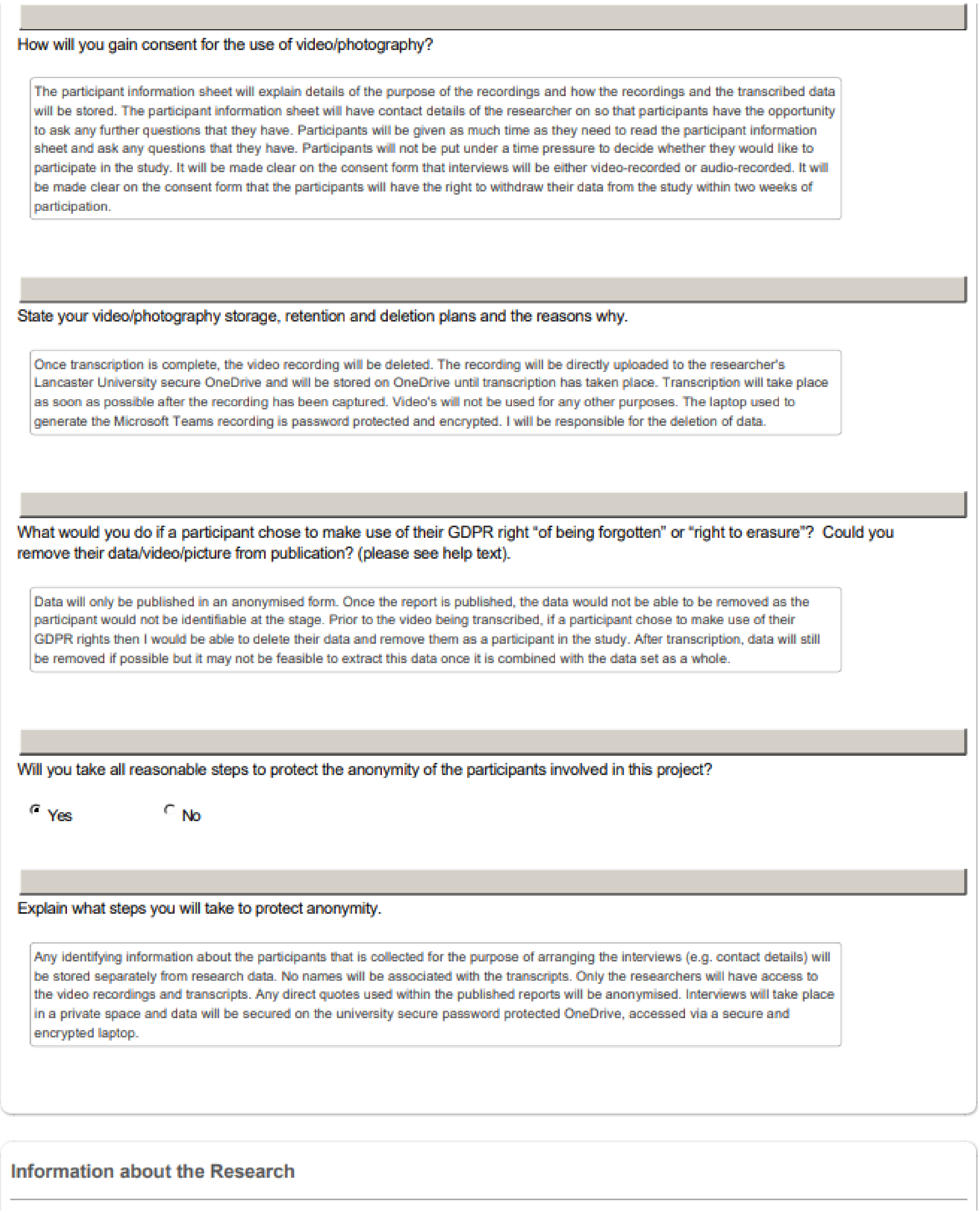
Please describe how long the data will be stored and who is responsible for the deletion of the data.

Participant contact details will be deleted as soon as the data collection for the study is completed. Participant contact details will be stored for no longer than 12 months and I will be responsible for deletion of the data.

Participant Data

Explain what you will video or photograph as part of your project, why it is appropriate and how it will be used.

Video recordings may be used where interviews are conducted via Microsoft Teams in order to allow that data can be transcribed. Once transcription is complete, the video recording will be deleted. The recording will be directly uploaded to the researcher's Lancaster University secure OneDrive and will be stored on OneDrive until transcription has taken place. Transcription will take place as soon as possible after the recording has been captured. Video's will not be used for any other purposes. The laptop used to generate the Microsoft Teams recording is password protected and encrypted.



How will you gain consent for the use of video/photography?

The participant information sheet will explain details of the purpose of the recordings and how the recordings and the transcribed data will be stored. The participant information sheet will have contact details of the researcher on so that participants have the opportunity to ask any further questions that they have. Participants will be given as much time as they need to read the participant information sheet and ask any questions that they have. Participants will not be put under a time pressure to decide whether they would like to participate in the study. It will be made clear on the consent form that interviews will be either video-recorded or audio-recorded. It will be made clear on the consent form that the participants will have the right to withdraw their data from the study within two weeks of participation.

State your video/photography storage, retention and deletion plans and the reasons why.

Once transcription is complete, the video recording will be deleted. The recording will be directly uploaded to the researcher's Lancaster University secure OneDrive and will be stored on OneDrive until transcription has taken place. Transcription will take place as soon as possible after the recording has been captured. Video's will not be used for any other purposes. The laptop used to generate the Microsoft Teams recording is password protected and encrypted. I will be responsible for the deletion of data.

What would you do if a participant chose to make use of their GDPR right "of being forgotten" or "right to erasure"? Could you remove their data/video/picture from publication? (please see help text).

Data will only be published in an anonymised form. Once the report is published, the data would not be able to be removed as the participant would not be identifiable at the stage. Prior to the video being transcribed, if a participant chose to make use of their GDPR rights then I would be able to delete their data and remove them as a participant in the study. After transcription, data will still be removed if possible but it may not be feasible to extract this data once it is combined with the data set as a whole.

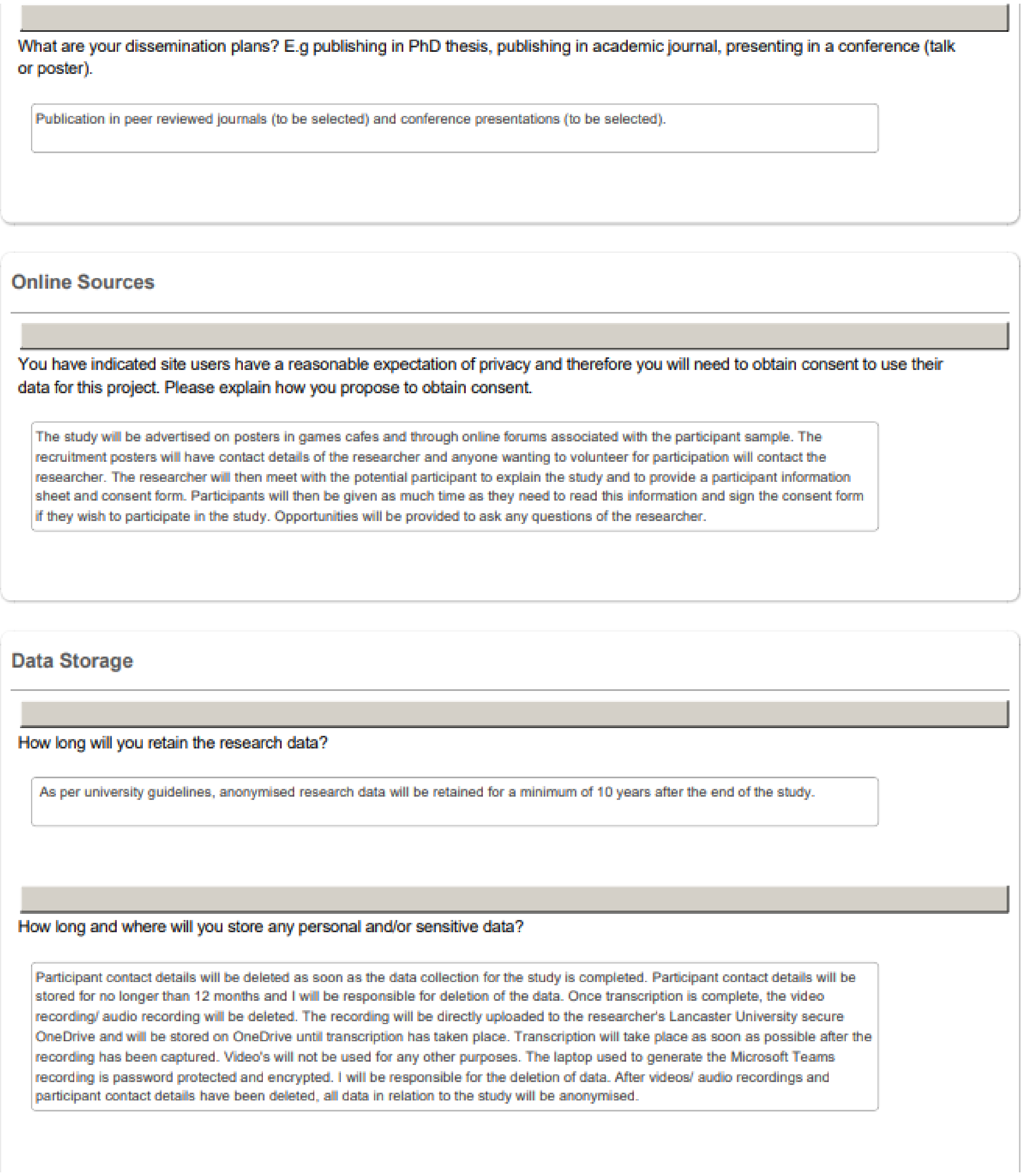
Will you take all reasonable steps to protect the anonymity of the participants involved in this project?

● Yes ○ No

Explain what steps you will take to protect anonymity.

Any identifying information about the participants that is collected for the purpose of arranging the interviews (e.g. contact details) will be stored separately from research data. No names will be associated with the transcripts. Only the researchers will have access to the video recordings and transcripts. Any direct quotes used within the published reports will be anonymised. Interviews will take place in a private space and data will be secured on the university secure password protected OneDrive, accessed via a secure and encrypted laptop.

Information about the Research



What are your dissemination plans? E.g publishing in PhD thesis, publishing in academic journal, presenting in a conference (talk or poster).

Publication in peer reviewed journals (to be selected) and conference presentations (to be selected).

Online Sources

You have indicated site users have a reasonable expectation of privacy and therefore you will need to obtain consent to use their data for this project. Please explain how you propose to obtain consent.

The study will be advertised on posters in games cafes and through online forums associated with the participant sample. The recruitment posters will have contact details of the researcher and anyone wanting to volunteer for participation will contact the researcher. The researcher will then meet with the potential participant to explain the study and to provide a participant information sheet and consent form. Participants will then be given as much time as they need to read this information and sign the consent form if they wish to participate in the study. Opportunities will be provided to ask any questions of the researcher.

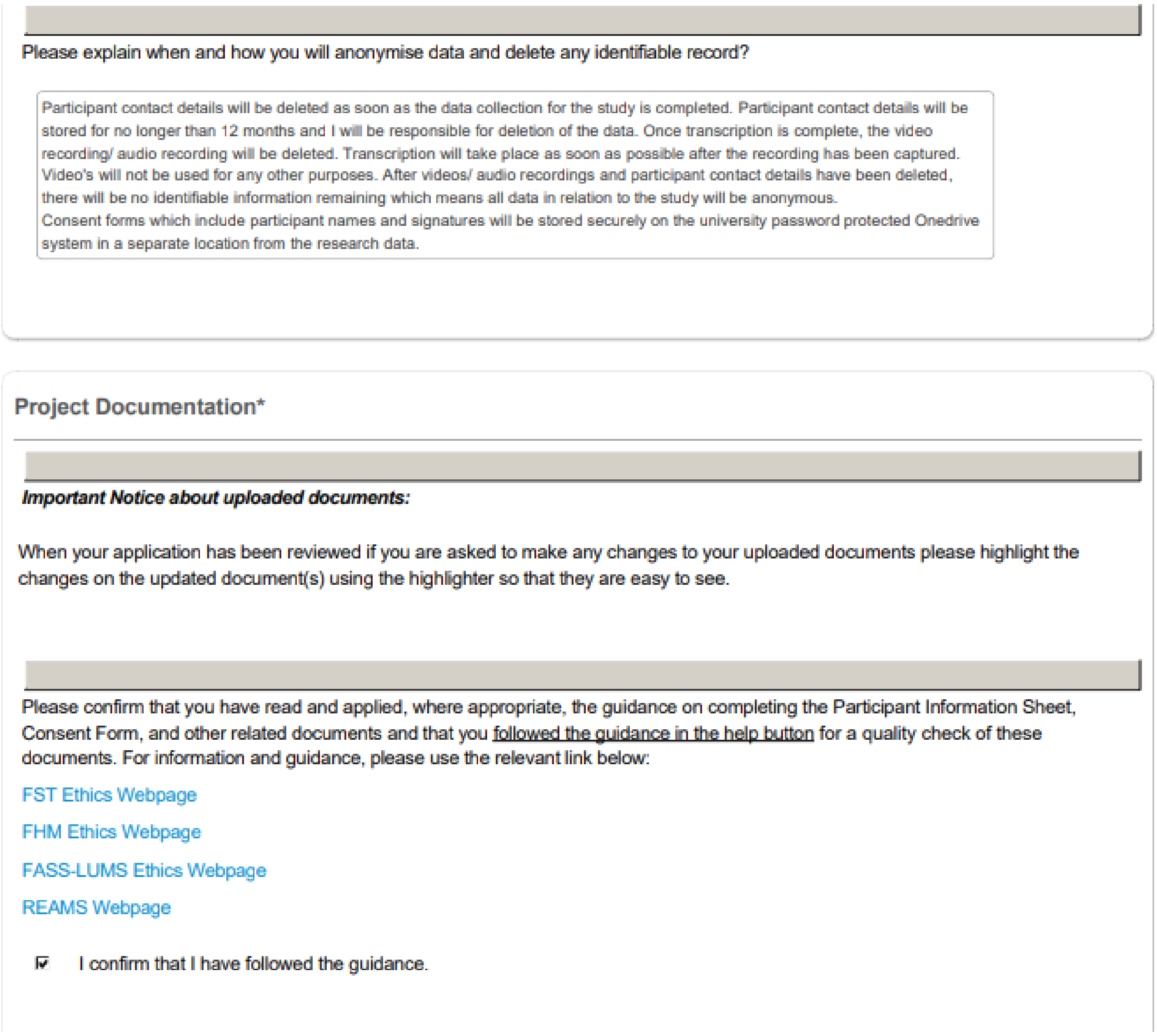
Data Storage

How long will you retain the research data?

As per university guidelines, anonymised research data will be retained for a minimum of 10 years after the end of the study.

How long and where will you store any personal and/or sensitive data?

Participant contact details will be deleted as soon as the data collection for the study is completed. Participant contact details will be stored for no longer than 12 months and I will be responsible for deletion of the data. Once transcription is complete, the video recording/ audio recording will be deleted. The recording will be directly uploaded to the researcher's Lancaster University secure OneDrive and will be stored on OneDrive until transcription has taken place. Transcription will take place as soon as possible after the recording has been captured. Video's will not be used for any other purposes. The laptop used to generate the Microsoft Teams recording is password protected and encrypted. I will be responsible for the deletion of data. After videos/ audio recordings and participant contact details have been deleted, all data in relation to the study will be anonymised.



Please explain when and how you will anonymise data and delete any identifiable record?

Participant contact details will be deleted as soon as the data collection for the study is completed. Participant contact details will be stored for no longer than 12 months and I will be responsible for deletion of the data. Once transcription is complete, the video recording/ audio recording will be deleted. Transcription will take place as soon as possible after the recording has been captured. Video's will not be used for any other purposes. After videos/ audio recordings and participant contact details have been deleted, there will be no identifiable information remaining which means all data in relation to the study will be anonymous.
Consent forms which include participant names and signatures will be stored securely on the university password protected Onedrive system in a separate location from the research data.

Project Documentation*

Important Notice about uploaded documents:

When your application has been reviewed if you are asked to make any changes to your uploaded documents please highlight the changes on the updated document(s) using the highlighter so that they are easy to see.

Please confirm that you have read and applied, where appropriate, the guidance on completing the Participant Information Sheet, Consent Form, and other related documents and that you followed the guidance in the help button for a quality check of these documents. For information and guidance, please use the relevant link below:

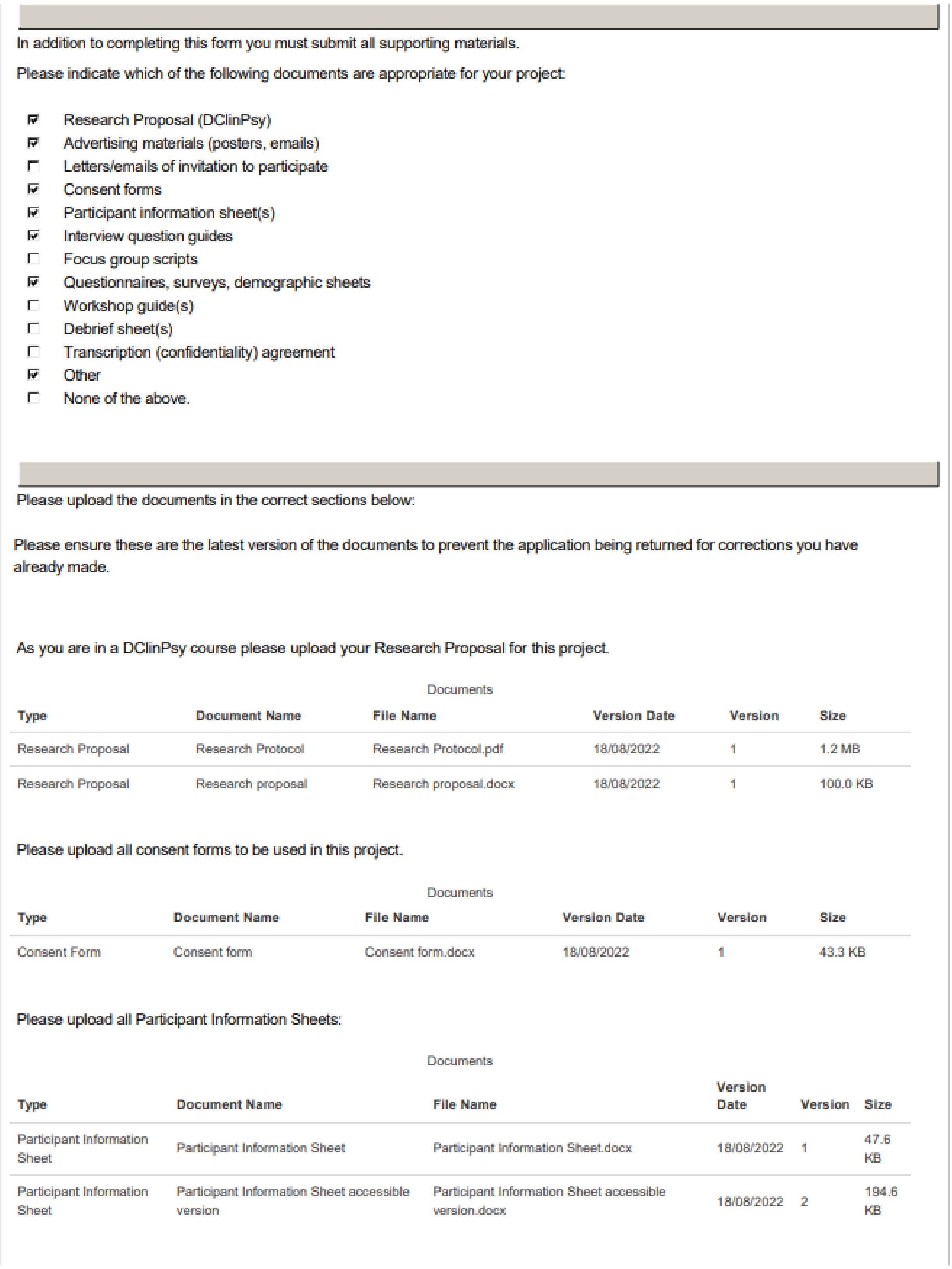
FST Ethics Webpage

FHM Ethics Webpage

FASS-LUMS Ethics Webpage

REAMS Webpage

☑ I confirm that I have followed the guidance.



In addition to completing this form you must submit all supporting materials.

Please indicate which of the following documents are appropriate for your project:

- ☑ Research Proposal (DClinPsy)
- ☑ Advertising materials (posters, emails)
- ☐ Letters/emails of invitation to participate
- ☑ Consent forms
- ☑ Participant information sheet(s)
- ☑ Interview question guides
- ☐ Focus group scripts
- ☑ Questionnaires, surveys, demographic sheets
- ☐ Workshop guide(s)
- ☐ Debrief sheet(s)
- ☐ Transcription (confidentiality) agreement
- ☑ Other
- ☐ None of the above.

Please upload the documents in the correct sections below:

Please ensure these are the latest version of the documents to prevent the application being returned for corrections you have already made.

As you are in a DClinPsy course please upload your Research Proposal for this project.

Documents

Type	Document Name	File Name	Version Date	Version	Size
Research Proposal	Research Protocol	Research Protocol.pdf	18/08/2022	1	1.2 MB
Research Proposal	Research proposal	Research proposal.docx	18/08/2022	1	100.0 KB

Please upload all consent forms to be used in this project.

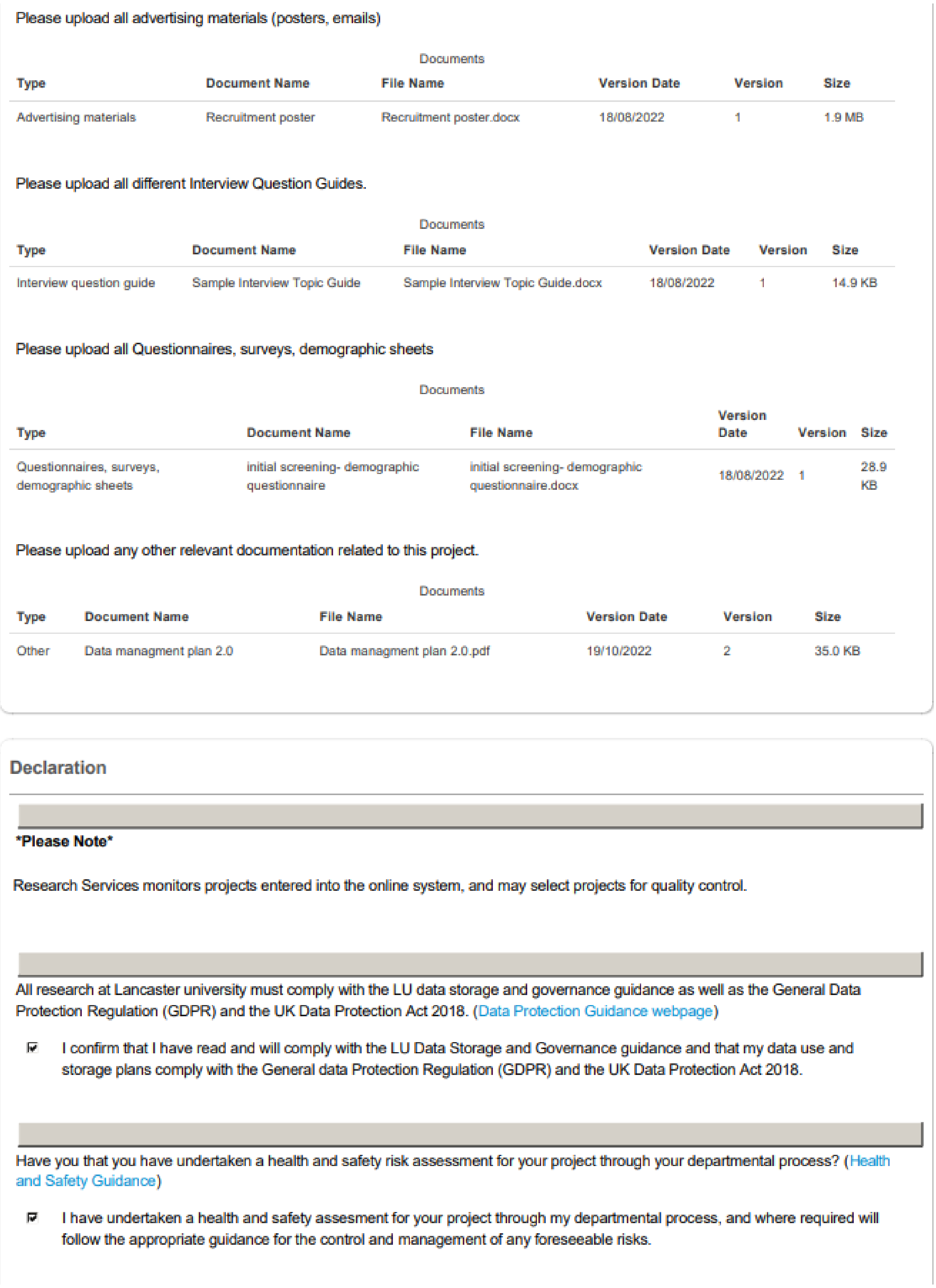
Documents

Type	Document Name	File Name	Version Date	Version	Size
Consent Form	Consent form	Consent form.docx	18/08/2022	1	43.3 KB

Please upload all Participant Information Sheets:

Documents

Type	Document Name	File Name	Version Date	Version	Size
Participant Information Sheet	Participant Information Sheet	Participant Information Sheet.docx	18/08/2022	1	47.6 KB
Participant Information Sheet	Participant Information Sheet accessible version	Participant Information Sheet accessible version.docx	18/08/2022	2	194.6 KB



Please upload all advertising materials (posters, emails)

Documents

Type	Document Name	File Name	Version Date	Version	Size
Advertising materials	Recruitment poster	Recruitment poster.docx	18/08/2022	1	1.9 MB

Please upload all different Interview Question Guides.

Documents

Type	Document Name	File Name	Version Date	Version	Size
Interview question guide	Sample Interview Topic Guide	Sample Interview Topic Guide.docx	18/08/2022	1	14.9 KB

Please upload all Questionnaires, surveys, demographic sheets

Documents

Type	Document Name	File Name	Version Date	Version	Size
Questionnaires, surveys, demographic sheets	initial screening- demographic questionnaire	initial screening- demographic questionnaire.docx	18/08/2022	1	28.9 KB

Please upload any other relevant documentation related to this project.

Documents

Type	Document Name	File Name	Version Date	Version	Size
Other	Data managment plan 2.0	Data managment plan 2.0.pdf	19/10/2022	2	35.0 KB

Declaration

Please Note

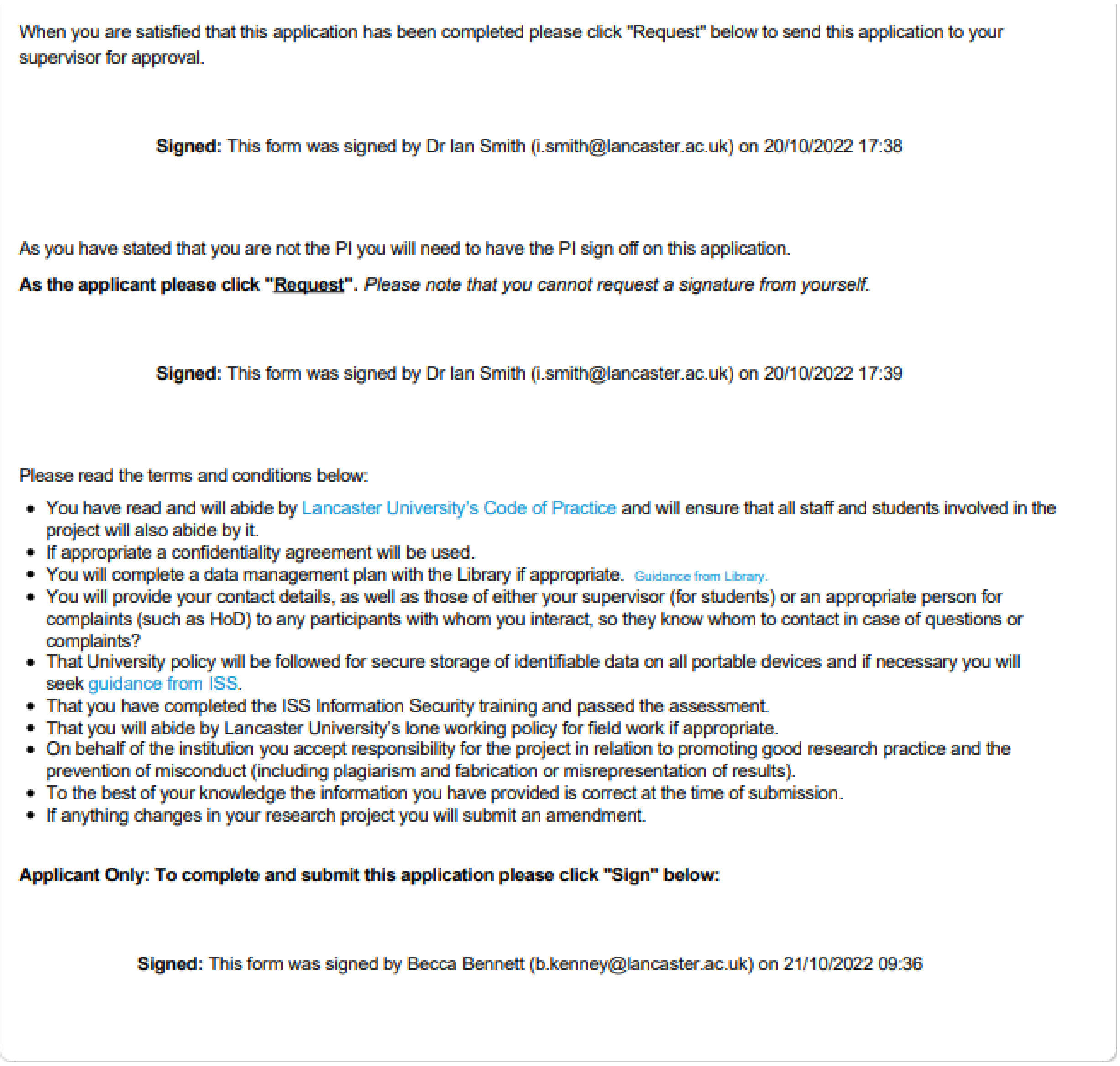
Research Services monitors projects entered into the online system, and may select projects for quality control.

All research at Lancaster university must comply with the LU data storage and governance guidance as well as the General Data Protection Regulation (GDPR) and the UK Data Protection Act 2018. (Data Protection Guidance webpage)

☑ I confirm that I have read and will comply with the LU Data Storage and Governance guidance and that my data use and storage plans comply with the General data Protection Regulation (GDPR) and the UK Data Protection Act 2018.

Have you that you have undertaken a health and safety risk assessment for your project through your departmental process? (Health and Safety Guidance)

☑ I have undertaken a health and safety assesment for your project through my departmental process, and where required will follow the appropriate guidance for the control and management of any foreseeable risks.



When you are satisfied that this application has been completed please click "Request" below to send this application to your supervisor for approval.

Signed: This form was signed by Dr Ian Smith (i.smith@lancaster.ac.uk) on 20/10/2022 17:38

As you have stated that you are not the PI you will need to have the PI sign off on this application.

As the applicant please click "Request". *Please note that you cannot request a signature from yourself.*

Signed: This form was signed by Dr Ian Smith (i.smith@lancaster.ac.uk) on 20/10/2022 17:39

Please read the terms and conditions below:

- You have read and will abide by Lancaster University's Code of Practice and will ensure that all staff and students involved in the project will also abide by it.
- If appropriate a confidentiality agreement will be used.
- You will complete a data management plan with the Library if appropriate. Guidance from Library.
- You will provide your contact details, as well as those of either your supervisor (for students) or an appropriate person for complaints (such as HoD) to any participants with whom you interact, so they know whom to contact in case of questions or complaints?
- That University policy will be followed for secure storage of identifiable data on all portable devices and if necessary you will seek guidance from ISS.
- That you have completed the ISS Information Security training and passed the assessment.
- That you will abide by Lancaster University's lone working policy for field work if appropriate.
- On behalf of the institution you accept responsibility for the project in relation to promoting good research practice and the prevention of misconduct (including plagiarism and fabrication or misrepresentation of results).
- To the best of your knowledge the information you have provided is correct at the time of submission.
- If anything changes in your research project you will submit an amendment.

Applicant Only: To complete and submit this application please click "Sign" below:

Signed: This form was signed by Becca Bennett (b.kenney@lancaster.ac.uk) on 21/10/2022 09:36

Research Protocol

Title: The Impact of Table-top Board Games on Wellbeing and Functioning in Autistic Adults.

Researcher: Rebecca Bennett
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Principal Investigator/ academic supervisor: Dr Ian Smith

Co-supervisor: Dr Miriam Sturdee

Field Supervisor: Philip Kershaw

Introduction

Table-top board games have been played throughout human history and they are still a popular form of entertainment today. It is estimated that the global board game market will be worth more than £9bn by 2023 and that it will continue to grow (BBC NEWS, 2019), evidencing the continual growth in popularity of board games. Amongst the reasons that board games are thought to be so popular, despite a technology-dominated culture, is the socio-economic inclusivity of board games, and the advantages of having quality face-to-face social interactions and human connection (Sargeantson, n.d). Additionally, within the media there are frequent reports of the anecdotal benefits of board games on mental health and wellbeing including reduced social isolation, increased social skills, stress relief and increased emotion regulation (Booth, 2020; Burman, 2021; Papworth, 2018). It has also been suggested in the media that these benefits are not exclusive to neurotypical populations and could be applicable to autistic individuals (Gelder, 2017).

What is Autism?

Autism, often referred to as Autism Spectrum Condition (ASC) or Asperger's syndrome, is a neurodevelopmental condition characterised as persistent social and communication difficulties, restricted and repetitive patterns of behaviour, and sensory sensitivities (American Psychiatric Association, 2013). ASC is a lifelong condition that affects people worldwide (Autism Around The Globe, 2011).The prevalence of ASC in adults in the United Kingdom (UK) is around 1.1% (National Institute for Health and Care Excellence, 2020), with research suggesting the growth in ASC diagnosis was exponential between 1998 and 2018 (Russell et al., 2022).

Functioning and Autism

There are many different interpretations of functioning, but one definition that has been long-standing is the ability to continually work towards your full potential (Rogers, 1965). Whilst ASC has been given diagnostic criteria, the population of autistic adults encompasses varying strengths, difficulties and needs that impact on functioning. The key areas of difficulty that are considered within the research to impact on functioning are communication difficulties such as initiating conversation, understanding abstract language, reading body language, and difficulties processing information (Cummins et al., 2020). When we live in a society that thrives off communication (Moffett, 2019), it is no surprise that autistic adults face barriers when it comes to functioning (Cummins et al., 2020) and that autistic people report a lower quality of life when compared to the general population (Ayres et al., 2018). In addition, barriers in communication are likely to impact on autistic people accessing physical and mental health services (Cummins et al., 2020), which is problematic given that this is a population who are known to be at increased risk of experiencing difficulties with their mental health (Colvert et al., 2021; Kannabiran & McCarthy, 2009).

Wellbeing and Autism

Autistic people are known to be at an increased risk of experiencing psychological distress in comparison to the general population (Colvert et al., 2021; Kannabiran & McCarthy, 2009). Despite this increased risk for experiencing psychological distress, research suggests that there are many gaps in mental health support for autistic individuals (Maddox et al., 2021). Benevides et al. (2020) carried out a large-scale study to identify what autistic adults feel is needed to address mental health in the autistic population. Amongst the findings of the research was the need for community-available approaches for self-management of mental health and strategies that focus on social well-being.

Table-top Board Games and Autism

When considering community-available approaches for self-management of mental health and strategies that focus on social well-being, anecdotal evidence within the media suggests that board games could be helpful for autistic individuals (Gelder, 2017). Despite this, the research in this field is extremely limited in quantity. There is some research to suggest that board games could be helpful for developing social and communication skills in children (Deming, 2000; Klopotova & Krupnova, 2020). However, no research to date has explored what the perceived impact of board games is for autistic adults. This suggests that there is a gap within the literature that could facilitate the understanding of the impact of board game play for autistic adults.

Relevance to Clinical Psychology

Mental health services are facing increased pressures, leading to long waiting times for support and often increased severity of mental health difficulties by the time the client is seen for treatment (Sizmur & Raleigh, 2018). This is understandably putting increased pressure on staff, resulting in a reduction in staff wellbeing (Sizmur & Raleigh, 2018). One way to reduce the pressures on these services is to decrease the number of people requiring a referral. This could be done through the use of proactive strategies in communities that promote general wellbeing. Strategies that work for autistic people are of particular value given that this is a population which is at increased risk of experiencing psychological distress (Colvert et al., 2021; Kannabiran & McCarthy, 2009). If games are considered to be beneficial for psychological wellbeing and functioning in this population, they could be utilised within the community as a protective factor which could reduce the number of autistic adults requiring a referral to mental health services. Learning about the role of board games could also lead to the development of innovative therapeutic approaches.

Research Aims

The aim of the project will be to examine qualitatively what impact autistic adults perceive engaging in board game play to have on their functioning and general psychological wellbeing.

Rationale

Within the media, there are frequent reports about the benefits of board game play for improving mental health and wellbeing (Booth, 2020; Burman, 2021; Papworth, 2018). Further, there are similar reports which suggests there are potential benefits of game play for psychological wellbeing and functioning in adults with autism (Gelder, 2017). However, there is limited research in this field. This is important because autistic adults are known to be at an increased risk of experiencing psychological distress in comparison to the general population (Colvert et al., 2021; Kannabiran & McCarthy, 2009), indicating a need for research to identify strategies that promote wellbeing.

Whilst advances in technology are creating opportunities for individuals to engage with gaming using computers and virtual reality platforms, board games are of a particular interest because of the known benefits of face-to-face interactions for social connection and preventing psychological distress (Umberson & Karas Montez, 2010). It is unclear at this point whether these benefits are the same when interacting in a virtual space. It may be that in the future, research can aid the understanding of the role of virtual interaction and as virtual platforms progress in their development, the impact of using board games in a virtual environment could be explored.

Methods

Research Design

A qualitative methodology will be utilised for this study to allow the researcher to gain a rich understanding of the participant's views. Semi-structured interviews will be used to explore the impact of board games on wellbeing and functioning in autistic adults. The interview schedule will be amended throughout the data collection process (e.g. before each interview), in line with grounded theory principles (Charmaz, 2006).

Participants (including inclusion/exclusion criteria)

Between eight and 15 participants will be recruited to allow for theoretical sufficiency for use of grounded theory approaches, whilst remaining within the scope of the project.
The inclusion criteria for participation is:

- Participants self-report that they have previously been diagnosed with ASC or Asperger's syndrome.
- Participants are aged 18 or over.
- Participants report that they engage in board game play at least once a month.

Applicants will be excluded from the study if they do not meet the above inclusion criteria, or if they are unable to engage in in a semi-structured interview using English language.

When applicants have contacted the researcher to enquire about taking part in the study and they have consented to being involved in the study, some questions will be asked prior to participation to collect demographic data and to ensure that participants are eligible to take part in the study.

Procedure

Participants will be recruited via purposive sampling methods. The researcher will advertise the study using posters in local games cafés and via online forums for autistic people (e.g. social media autism support groups, National Autistic Society, Asperger and ASD UK Online Forum). The advertisement poster will contain details of the research and anyone interested in participating will contact the researcher to express their interest.

Anyone who is interested in taking part in the study will be asked to provide their phone number and email address for the purpose of sending information about the study and for arranging participation. The researcher will provide a participant information sheet and consent form via email to the participant and the initial screening questionnaire will be completed to check the participant's eligibility for the study and to gather some demographic information. The researcher will contact the potential participant no sooner than 48 hours after they have received the participant information sheet. The 48-hour minimum time period is given to ensure that the interested person has time to read and consider the information in the participant information sheet and decide whether they would like to take part in the study. When the researcher contacts the potential participant following this period, opportunity will be given for the potential participant to ask any questions that they may have about the research. Participants have the right to withdraw from this study at any time and may withdraw their data from the study within two weeks of participation. Following this period, the researcher will make any attempts possible to remove any data requested but it may not be feasible to extract data once it is combined with the data set as a whole.

Following recruitment and consent to the study, a time and date will be agreed with the participant to conduct an interview. Interviews will either be held at Lancaster University or via Microsoft Teams or over the phone, depending on the preference of the participant. At the time of the interview, the researcher will confirm that the participant has understood the information provided within the consent form and they will be asked to provide their written consent to participate in the study. If the interview is being conducted via Microsoft Teams or over the phone, the participant will be asked to return the consent form via email prior to participation. It will be assumed that all participants have the capacity to consent unless the researcher has evidence that the participant may lack capacity to consent to participation.

Data Collection and Transcription

The video or audio recording will be started using a secure password-protected laptop. Interviews will be a minimum of one hour in duration to allow for sufficient data to be collected. The interview schedule will be used to conduct the semi-structured interview. At the end of the interview, the recording will be stopped and the participant will be thanked for their participation and reminded that they may be asked to attend a follow-up interview to answer more questions, in line with a grounded theory approach (Charmaz, 2006), as per the information provided in the participant information sheet. The recording will be immediately transferred to the secure university OneDrive storage. Verbatim transcripts of the recording will be completed as soon as possible by the researcher and the recording will be deleted once the transcript is completed. Transcripts will be stored on the secure university OneDrive storage in a separate location to any identifying information about the participant.

Data Analysis

The principles used to analyse the interviews will draw on constructivist grounded theory techniques, based on the process outlined by Charmaz (2006). Grounded theory has been chosen because it allows the participants to freely reflect on and share their experiences which aims to improve the understanding of the participant's perceptions. Additionally, the principles of grounded theory will be adopted as grounded theory was developed with the aim of using qualitative data whilst maintaining the rigor of a quantitative approach (Glaser & Strauss, 2017). Using a grounded theory approach will enable the researchers to gain an appreciation of how autistic adults perceive and understand games to impact on their wellbeing and functioning.

Firstly, the researcher will listen to the recordings and read the transcripts to immerse themselves in the data. Once the researcher is familiar with the data, initial stages of coding can begin. In the initial stages of coding, the researcher will complete sentence-by-sentence coding in order to code as much of the text as possible. Memos will be created during this process to allow for constant comparison which will aid in the process of conceptual categorisation. The next stage will be focused coding. In this stage the researcher will consider which codes have come up most frequently and appear to be the most significant.

This process will allow for the emergence of categories if common themes emerge within several codes. The researcher may conduct follow-up interviews at this stage focused specifically on the categories that have been established. Typically, this process would be carried out until a point of data saturation is achieved. However, due to the scope of the project in the context of a doctoral programme, it is unlikely to be possible to achieve data saturation. Once categories have been created, theoretical sorting will begin to refine the links between categories. Diagrammatic representations will be used to facilitate this process.

Practical Issues

Audio and video recording equipment will be provided by Lancaster University. There are no practical issues anticipated with this project. Interviews will be conducted face-to-face at Lancaster University or via video or telephone call, depending on the preference of the participant.

Potential Ethical Issues

It is unlikely that psychological distress will be experienced as a result of taking part in this study. All participants will be provided with a participant information sheet prior to consenting to take part in the study. Details of resources or support services that they can access if they become distressed are contained within the participant information sheet. In the unlikely event that a participant becomes distressed, the researcher will make all attempts to minimise distress and to encourage the participant to access the resources provided on the participant information sheet. Additionally, all participants will be offered breaks during interviewing and they will be made aware that they can terminate the interview at any point.

Payments

No payments will be made during this project. Participants will participate in the study on a voluntary basis.

Conflict of Interest

No conflicts of interest have been identified and the approved ethics protocol will be followed throughout the duration of this research.

Timescale

The project is anticipated to start once ethical approval has been obtained. It is predicted that participants will be recruited and data will be collected between January and June 2023. The projected completion date for this project is March 2024. Participants will be able to request feedback on the results of the study from March 2024.

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Appendices

Appendix A

Recruitment Poster

Doctorate in Clinical Psychology | Lancaster University

My name is Becca and I am a trainee clinical psychologist at Lancaster university.

For my thesis I would like to understand what impact you think board games have on your wellbeing and functioning.

Do you play board games at least once a month?

Have you been diagnosed with Autism or Asperger's Syndrome?

Are you aged 18 or over?

Why am I doing this study?

I want to understand what helps to improve wellbeing for autistic adults.

What will you be asked to do?

I will meet you and ask you about your experiences of playing games and how this either helps you or makes things harder for you.

If you are interested in being involved,
please contact me:
Email: b.kenney@lancaster.ac.uk

Phone: 07508 375 658

Appendix B

Participant Information Sheet

The impact of table-top board games on wellbeing and functioning in autistic adults.

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

My name is Becca and I am conducting this research as a student on the doctoral programme in Clinical Psychology at Lancaster University, United Kingdom.

You have contacted me after seeing the poster advertising my research. I want to hear about the experiences of autistic adults who regularly play board games.

What is the study about?

The purpose of this study is to understand what you think the benefits of playing board games is on your wellbeing and functioning.

Do I have to take part?

No. It's completely up to you to decide whether or not you take part.

What will I be asked to do if I take part?

If you decide you would like to take part, I will meet you and ask you to talk about your experiences of playing games. Our conversations would be either audio-recorded or video-recorded.

This could be held online using Microsoft Teams, via telephone, or face-to-face at Lancaster University. Our conversations will last at least one hour. I may ask some people to meet me again later for a second interview.

Will my data be Identifiable?

The data collected for this study will be stored securely and only the researchers conducting this study will have access to this data.

- Audio and video recordings will be stored on secure university cloud storage and will destroyed once the data has been transcribed.
- Any files containing written data in relation to the study will be password protected (so no-one apart from me will be able to access them) and the computer itself will also be password protected.
- The typed version of your interview will be made anonymous by removing any identifying information including your name. Anonymised direct quotations from your interview may be used in the reports or publications from the study, so your name will not be attached to them. All reasonable steps will be taken to protect the anonymity of the participants involved in this project.
- All your personal data will be confidential and will be kept separately from your interview responses.
- There are some limits to confidentiality: if what is said in the interview makes me think that you, or someone else, is at significant risk of harm, I may have to break confidentiality and speak to my supervisor or someone else about this. If possible, I will tell you if I have to do this.

What will happen to the results?
The results will be summarised and reported in a thesis and will also be submitted for publication in an academic or professional journal in the future. Results may also be presented at conferences in the future.

Are there any risks?
There are no risks anticipated with taking part in this study. However, if you experience any distress after you take part then please make use of the resources provided at the end of this sheet.

Are there any benefits to taking part?
Although you may find participating interesting, there are no direct benefits in taking part. However, you might enjoy sharing your experiences and talking about your hobby. We hope to provide you an opportunity for your voice to be heard.

Who has reviewed the project?
This study has been reviewed and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University and by the research team on the Lancaster University doctorate in clinical psychology programme.

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact the main researcher:

Email: b.kenney@lancaster.ac.uk
Project title: The impact of table-top board games on wellbeing and functioning in autistic adults.
Supervisor: Ian Smith
Supervisor email: i.smith@lancaster.ac.uk
Supervisor phone number: 01524592282

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email: l.machin@lancaster.ac.uk
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

Thank you for taking the time to read this information sheet.

Resources in the event of distress

Should you feel distressed either as a result of taking part, or in the future, the following resources may be of assistance:

- The National Autistic Society https://www.autism.org.uk/
- Qwell provides free, safe and anonymous mental wellbeing support for adults across the UK with qualified practitioners https://www.qwell.io/
- The Autism Alliance is a network of charities which support adults with autism across the UK https://www.autism-alliance.org.uk/
- Samaritans is a 24-hour service which you can contact for support on 116 123.

Appendix C

Accessible Version of Participant Information Sheet

The Impact of Table-top Board Games on Wellbeing and Functioning in Autistic Adults.

For further information about data processing and your data rights visit: www.lancaster.ac.uk/research/data-protection

My name is Becca.

I am studying at Lancaster University, United Kingdom.

You have contacted me after seeing the poster advertising my research.

What is the study about?

I want to understand what you think the benefits of playing board games is on your wellbeing and functioning.

Do I have to take part?

No, it is your choice.

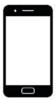
What will I be asked to do if I take part?

I will meet you and ask you about your experiences of playing board games.

I will record us talking so that I can type it up on a computer.

We could talk on Microsoft Teams,

or we could talk on the phone



or we could meet at Lancaster University.

Our conversations will last at least one hour.

I may ask to talk to you again another time.

What happens to my data?

Lancaster University will look after your data from this study.

Recordings will be stored securely.

I will safely get rid of the recording once I have typed up our conversation.

All information will be password protected.

I might use things that you have said in my report, but nobody will know it was you who said it.

Our conversations are private unless I am worried that you or someone else is at risk of harm. If this happens, I will talk to my supervisor about our conversations.

What will happen to the findings from the study?

If you would like a summary of my findings, please let me know.

Who has checked the project?

This study has been checked and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University and by the research team on the Lancaster University doctorate in clinical psychology programme.

What if I have a question?

If you have any questions about the study, please contact me:

Email: b.kenney@lancaster.ac.uk
Project title: The impact of table-top board games on wellbeing and functioning in autistic adults.
Supervisor: Ian Smith
Supervisor email: i.smith@lancaster.ac.uk
Supervisor phone number: 01524592282

What if I’m unhappy with the study?

If you do not want to speak to me, you can contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email: l.machin@lancaster.ac.uk
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

What if I feel upset?

Should you feel upset either as a result of taking part, or in the future, please get support from:

- https://www.autism.org.uk/
- https://www.autism-alliance.org.uk/
- Talk to someone at Qwell: https://www.qwell.io/
- Samaritans (Call free on 116 123).

Appendix D

Blank Consent Form

Project title: The impact of table-top board games on wellbeing and functioning in autistic adults.

Name of Researchers: Rebecca Kenney, Dr Ian Smith, Dr Miriam Sturdee
Email: b.kenney@lancaster.ac.uk

Please tick each box

8. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
9. I understand that my participation is voluntary and that I am free to withdraw at any time during my participation in this study and within two weeks after I took part in the study, without giving any reason. If I withdraw within two weeks of taking part in the study my data will be removed.	☐
10. I understand that any information given by me may be used in future reports, academic articles, publications or presentations by the researcher/s, but my personal information will not be included and all reasonable steps will be taken to protect the anonymity of the participants involved in this project.	☐
11. I understand that my name/my organisation’s name will not appear in any reports, articles or presentation without my consent.	☐
12. I understand that any interviews will be either audio-recorded or video-recorded and transcribed and that data will be protected on encrypted devices and kept secure.	☐
13. I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.	☐
14. I agree to take part in the above study.	☐

_______________________________ _____________________ ________

Name of Participant Date Signature

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher _______________________________________ Date _________________

One copy of this form will be given to the participant and the original kept in the files of the researcher at Lancaster University

Appendix E

Initial Screening Demographic Questionnaire

Please tick the category that represents your age group:

☐ Below 18 years

☐ 18-25

☐ 26-35

☐ 36- 45

☐ 46-55

☐ 55+

Please write the gender that you identify as below:

Do you have a diagnosis of either Asperger’s Syndrome or Autism Spectrum Condition?

☐ Yes

☐ No

How long ago did you receive your diagnosis?

Which country do you live in?

How often do you play board games?

How long ago did you begin to regularly play board games?

Do you play board games with the same group each time you play, or a different group?

Do you have a game that you play most often? If so, please write the name of it below:

Where do you tend to play board games? (E.g. at a gaming café, at home)

Appendix F

Sample Interview Topic Guide

At the start of the interview:

Thank you for meeting with me today to take part in my study about the impact of board games on your wellbeing and functioning.
-Check participant still consents
As you are aware, our conversation will be audio/video recorded today.
Please only share what you feel safe and comfortable to share. If at any point you need to take a break or you would like to stop our conversation, please let me know. Our conversation will last around one hour.

1. Can you please talk about the main difficulties or challenges that you think you experience as a result of ASC?

2. Is there anything about ASC that makes you unhappy?

   Prompts: Please can you give examples?
3. When did you start playing board games?

   Prompt: Did you notice any changes in your ASC around this time?
4. Are there any aspects of playing board games that you think you find difficult as a result of your ASC?

   Prompt: How does this impact on your game play? Is there anything you do to adapt game play due to this?
5. Do you think there are any benefits of playing board games on your ASC?

   Prompt: How have these benefits/skills been transferable/ impacted on your day-to-day life? Have these benefits impacted on your general wellbeing? Have these benefits impacted on your general functioning? Please can you provide examples.
6. Are there any negative impacts of playing board games on ASC?

   Prompt: Have these negative impacts had an impact on your day-to-day life as an adult? Have these negative impacts had an effect on your general wellbeing? How have these impacts effected your general functioning? Please can you provide examples.
7. What do board games mean to you and your wellbeing and functioning overall?

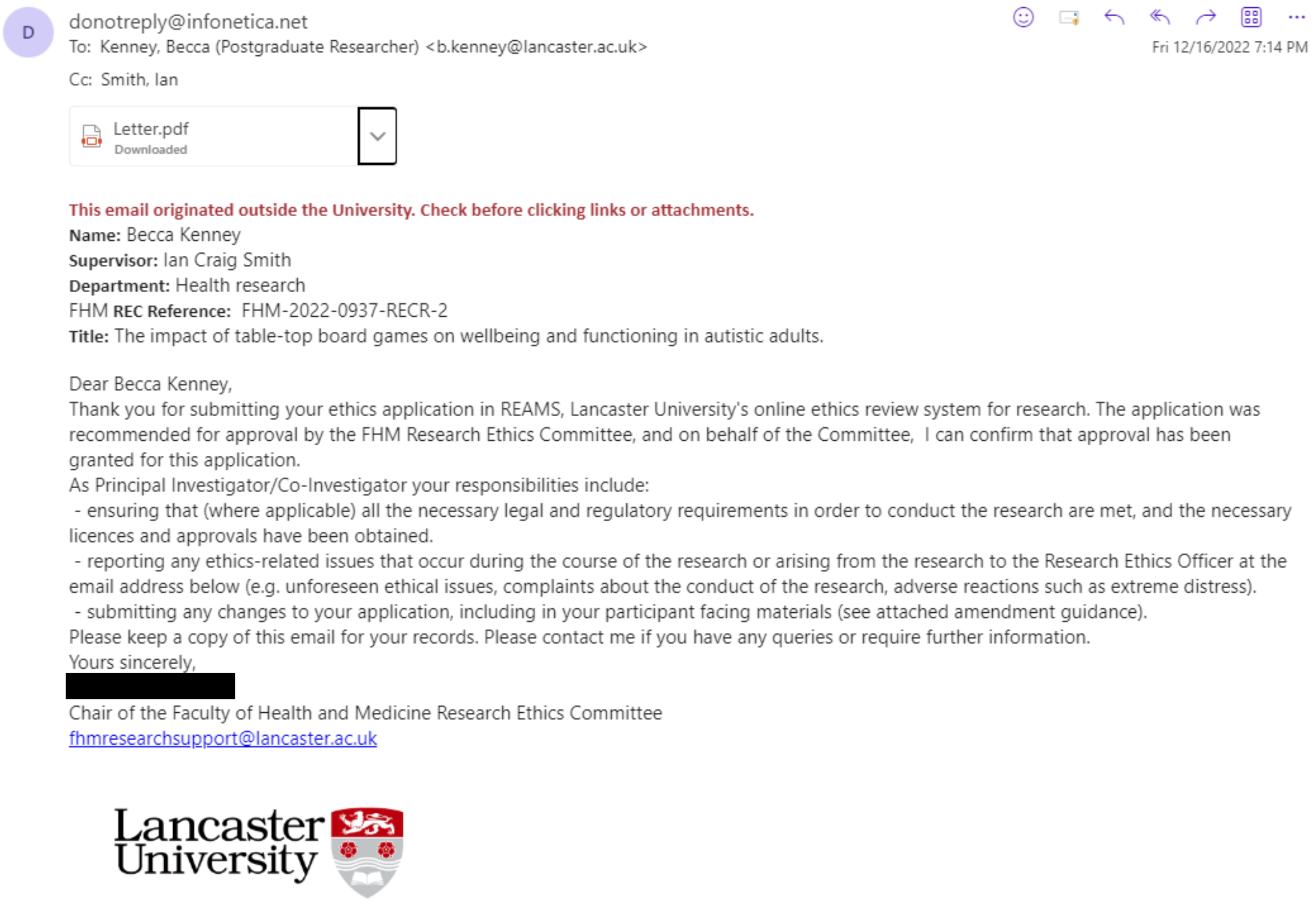
   Prompt: Are there more positive impacts or negative impacts of board games on your wellbeing and functioning?

At the end of the interview:

We have now completed the interview. Thank you for taking part in the interview. As advised *on the participant information sheet, I may contact you for a follow-up meeting to ask some more questions. Is this okay?*

Appendix G

Ethical Approval Letter



donotreply@infonetica.net
To: Kenney, Becca (Postgraduate Researcher) <b.kenney@lancaster.ac.uk>
Cc: Smith, Ian
Fri 12/16/2022 7:14 PM

This email originated outside the University. Check before clicking links or attachments.
Name: Becca Kenney
Supervisor: Ian Craig Smith
Department: Health research
FHM **REC Reference:** FHM-2022-0937-RECR-2
Title: The impact of table-top board games on wellbeing and functioning in autistic adults.

Dear Becca Kenney,
Thank you for submitting your ethics application in REAMS, Lancaster University's online ethics review system for research. The application was recommended for approval by the FHM Research Ethics Committee, and on behalf of the Committee, I can confirm that approval has been granted for this application.
As Principal Investigator/Co-Investigator your responsibilities include:
- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licences and approvals have been obtained.
- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress).
- submitting any changes to your application, including in your participant facing materials (see attached amendment guidance).

Please keep a copy of this email for your records. Please contact me if you have any queries or require further information.
Yours sincerely,
[redacted]
Chair of the Faculty of Health and Medicine Research Ethics Committee
fhmresearchsupport@lancaster.ac.uk

Lancaster University