126 (2025) 202644

Contents lists available at ScienceDirect

Research in Autism

journal homepage: www.elsevier.com/locate/rasd

"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 [a], Miriam Sturdee [a,1], Philip Kershaw [b], Ian C. Smith [a,*,2]

[a] Division of Health Research, Lancaster University, Bailrigg, Lancaster LA1 4YW, UK
[b] Lancaster Board and Sword, Sun Street, Lancaster LA1 1EW, UK

ARTICLE INFO

Keywords:
Autism
ASD
Wellbeing
Functioning
Table-top board games

ABSTRACT

Background: Despite anecdotal evidence of the benefits of table-top board game engagement for the wellbeing and functioning of autistic adults, limited 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 in 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 was 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 games more. These factors contributed to them playing more games, creating a virtuous cycle. In turn, the concepts all lead back to a general sense of improved wellbeing and functioning.

Introduction

Table-top board gaming is an extremely popular leisure activity (Donovan, 2018), with the global board game market being worth more than £ 9bn in 2023, and being predicted to continue to grow for many years to come (BBC NEWS, 2019). In a western world becoming more dominated by technology, board games are thought to be popular, because of their socio-economic inclusivity, and the

* Corresponding author.
E-mail address: i.smith@lancaster.ac.uk (I.C. Smith).
[1] School of Computer Science, University of St Andrews, UK KY16 9SX
[2] Department of Primary Care & Mental Health, University of Liverpool, L69 7ZA

https://doi.org/10.1016/j.reia.2025.202644
Received 2 August 2024; Received in revised form 21 May 2025; Accepted 6 June 2025
Available online 13 June 2025

advantages of involving quality face-to-face social interactions and human connection (Sargeantson, 2023).

It is estimated that around four-to-five percent of the board gaming community are autistic (Cross et al., 2023). This estimate is likely to be an under-representation as autistic traits are known to be significantly elevated amongst board gamers (Cross et al., 2024), and barriers to accessing diagnosis can mean that many people with these traits remain undiagnosed (Crane et al., 2018; Howes et al., 2021; Lewis, 2017).

In the last few years there has been a growth in the number of anecdotal reports claiming mental health benefits for table-top board gaming (Booth, 2020; Burman, 2021; Papworth, 2018). The benefits described in these media reports include a reduction in stress, reduced social isolation, an increase in social and emotional regulation skills, and general improvements in mental health and well-being. There is emerging empirical research to support this anecdotal evidence, but to date this has focused specifically on board games that were designed as therapeutic interventions rather than on the benefits of gaming 'in the wild' (Streng, 2009).

Autistic people are more likely to experience mental health difficulties, psychological distress, and poorer wellbeing than neurotypical individuals (Atherton et al., 2022; Colvert et al., 2021; Kannabiran & McCarthy, 2009). Research suggests that approximately 70–80 % of autistic people experience difficulties with mental health at some point in their lives (Lever & Geurts, 2016; Simonoff et al., 2008), compared to around 25 % of the neurotypical population (McManus et al., 2016). This difference 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 contributing factor is likely to be that societies are not structured to adequately meet the needs of autistic people, resulting in restrictions in functioning (Cummins et al., 2020).

'Functioning' is the interaction between autism and a person's environment, which often results in difficulties with social communication and interaction, restricted and repetitive patterns of behaviour or interest and sensory sensitivities (World Health Organisation, 2001), all of which may not be understood by others (e.g. Raymaker et al., 2020). The International Classification of Functioning, Disability and Health (ICF) suggests these difficulties may impact on the functioning of the body, activities that can be performed, and on an individual's participation in life situations (World Health Organisation, 2001).

Whilst there is limited research into board gaming that specifically focuses on the experiences of autistic people, some literature does suggest possible benefits in terms of improved functioning and mental health. For example, Gelder (2017) reports on an autistic man expressing the value of table-top board game engagement for his mental health during a hospital admission. He describes board gaming reduced his social isolation through opportunities to interact with other people, which improved his wellbeing. This is further supported by research from Cross et al. (2024) which suggests that board games may be beneficial for autistic adult's social and cognitive skills. This suggests that table-top board gaming may help improve functioning and mental health for autistic people.

Exploring how community-based activities such as board gaming might provide mental health support for autistic people is particularly important. This is because large-scale research (Benevides et al., 2020) has found that autistic adults consider community-based approaches (without the need for a mental health professional) are the best way to address their mental health needs. This may be because there is often a failure to tailor traditional mental health services to the needs of autistic people, which can result in them not being a good 'fit' (e.g. Maddox et al., 2021).

If identified as helpful, tabletop board gaming participation could be encouraged

through a social prescribing approach. This is a healthcare initiative aimed at connecting people to activities and services in their communities (NHS England, 2019). Social prescribing is a way to improve health outcomes through addressing the social determinants of health and wellbeing. It is a health priority in the UK National Health Service (NHS) Long Term Plan (NHS England, 2019), and is receiving increasing attention as an alternative to therapeutic support (Charlton et al., 2021; Featherstone, 2024).

Given the above, the aim of our study was to examine in depth for the first time autistic adults' perceptions of the impact of playing table-top board games on their wellbeing and functioning. In addition to identifying whether and how such activities might benefit autistic people who engage with them in 'the wild', learning more about the role of board games in wellbeing for this population could also lead to the development of innovative therapeutic approaches.

Method

Design

This study utilised a qualitative design. This approach was chosen so we could understand the experiences and perspectives of autistic individuals. Ten participants took part in semi-structured interviews and verbatim transcripts were analysed using Grounded Theory principles. Grounded Theory was chosen as it allows participants to reflect on and share their experiences, to improve the understanding of their perceptions in a newly developing area of research. Grounded Theory was developed with the aim of using qualitative data whilst maintaining the rigor of a quantitative approach (Glaser & Strauss, 2017).

Participants

Ten participants were recruited via volunteer sampling. Typically in Grounded Theory, participants would continue to be recruited and interviewed until data saturation is achieved. However, due to the scope of the project in the context of a doctoral programme, we aimed for 'theoretical sufficiency' (Dey, 1999). Therefore, it is acknowledged that it is unlikely that true data saturation was achieved. Demographic details of participants can be found in table one. Participant pseudonyms are used to demonstrate the spread of participant quotes within the results section. 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 played at least once a month.
- Be able to engage in a semi-structured interview using English language.

Twenty-three people expressed an interest in participating in the study. Eight people did not return the consent form and five were not eligible to participate due to not having a formal diagnosis. The participants reported that they engaged in table-top board games across a variety of settings such as gaming cafes, friend's houses, at home and at community centres. Some reported that who they played with and where they played did not matter to them, whereas others found it important to play with friends and that the environment that they played in was also important Table 1.

Materials

Interviews were conducted online (using Microsoft Teams software) or face-to-face. In all cases the interviews were recorded using Microsoft Teams.

Procedure

Recruitment

The study was advertised using posters in 24 board game cafés within the UK and via online forums (i.e. board gaming community forums, autism community forums).

Consent and ethics

People who expressed an interest were provided with a participant information sheet, consent form and initial eligibility-screening questionnaire via email. Written informed consent was obtained before a date and time for interview was agreed. The research was approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University.

Data collection and transcription

We developed a semi-structured interview topic guide, informed by existing literature in the field (see supplementary materials). This began with open-ended questions that were designed to explore the general area of interest. Questions within the interview guide focused on participants' experiences with tabletop games and their perceived impact on their wellbeing and functioning. The guide was adapted following every interview, based on changes suggested by participants (e.g., wording questions differently to make them more accessible) and on the data analysis process, in line with the processes of Constructivist Grounded Theory (Charmaz, 2006). For example, it was adapted to delve deeper into emerging concepts or to clarify ambiguities in the data. An example topic guide is included in the supplementary materials. Semi-structured interviews lasted between one hour and one and a half hours. All interviews were recorded using Microsoft Teams software, for the purposes of transcription. The primary researcher generated verbatim

Table 1
Participant demographic information.

Pseudonym	Gender Identity	Age Category	Country of Residence	Frequency of Board Game Play	Years Since Diagnosis
Frank	Male	26 –35	UK	Weekly	25
Jesse	Non-binary trans masculine	26 –35	UK	Monthly	8
Elliot	Male	36 –45	UK	Monthly	11
Joshua	Male	36 –45	UK	Weekly	15
Elise	Female	26 –35	UK	Twice weekly	< 1
Elizabeth	Female	26 –35	UK	Four times a week	7
Arthur	Male	56 +	UK	Twice weekly	< 1
Jordan	Non-binary	46 –55	UK	Twice weekly	10
Noah	Male	36 –45	UK	Weekly	34
Addison	Non-binary	26 –35	UK	Fortnightly	2

transcripts from the recordings following the interviews.

Data analysis

Constructivist Grounded Theory techniques were adopted, (Charmaz, 2006). This allowed an understanding of the perceived benefits of board games for autistic adults to be developed through hearing their perspectives, whilst still being able to analyse data rigorously. After each interview, the first author listened to the recording, transcribed the data and read the transcript to immerse herself in the data. Once familiar with the data, initial stages of coding began. In the initial stages of coding, sentence-by-sentence coding was undertaken to capture as much of the content as possible. A second member of the research team read and coded an anonymised transcript to check for reliability of coding. Memos created during the coding process allowed for constant comparison to aid the process of conceptual categorisation. In the focused coding stage, the codes that occurred most frequently and appeared to be the most significant were identified and developed. 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. Diagrammatic representations were used to facilitate the process of data analysis, as shown in figure one.

Reflexivity statement

Throughout the research, the first author (who conducted the data collection and led the analysis process) reflected on her positionality and the influence this may have on the research. Whilst the aim was to create an inclusive study, her gender and age may have influenced communication style and impacted on the rapport built with participants, affecting how much information they gave. Actively reflecting on these characteristics helped her remain sensitive to potential biases. Additionally, being non-autistic researchers in the field of autism could have led to potential biases in interpreting behaviours and experiences through a neurotypical lens. To minimise this bias, we involved a member of the autistic community when creating the participant-facing materials of the study.

Results

Introduction to the model

Analysis of the data using a constructivist 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 (Fig. 1). Each concept is represented by a 'branch' of the model. Each concept has multiple parts that contribute to the branch in the model. The arrows in the model show where interactions take place, with some being between concepts, and some being between the different parts within a concept.

The way that the concepts interact creates a feedback loop that resulted in participants spending more time playing board games. When they spent more time playing board games participants tended to see themselves as communicating better, forming better relationships, feeling more included and enjoying the games more. This contributed to them playing more games, creating a virtuous cycle. In turn, the concepts all lead back to a general sense of improved wellbeing and functioning. Noah 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***". Jesse 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. The concepts represented in the model by branch A: 'the cycle of board game engagement', and branch B: 'impact on aspects of autism' are explained together rather than independently of each other. The concept represented by branch C: 'impact on wellbeing and functioning' will then be explained in the final section of the results.

Rules, routines and structure

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 their *coping* (Branch C). There were reported to be different levels in which rules and routines were important. Firstly, for example, Jesse described how having "***board game night scheduled in"*** gave them ***"something to look forward to***" in their week as a coping mechanism for stress. Frank 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, Frank 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. Addison 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

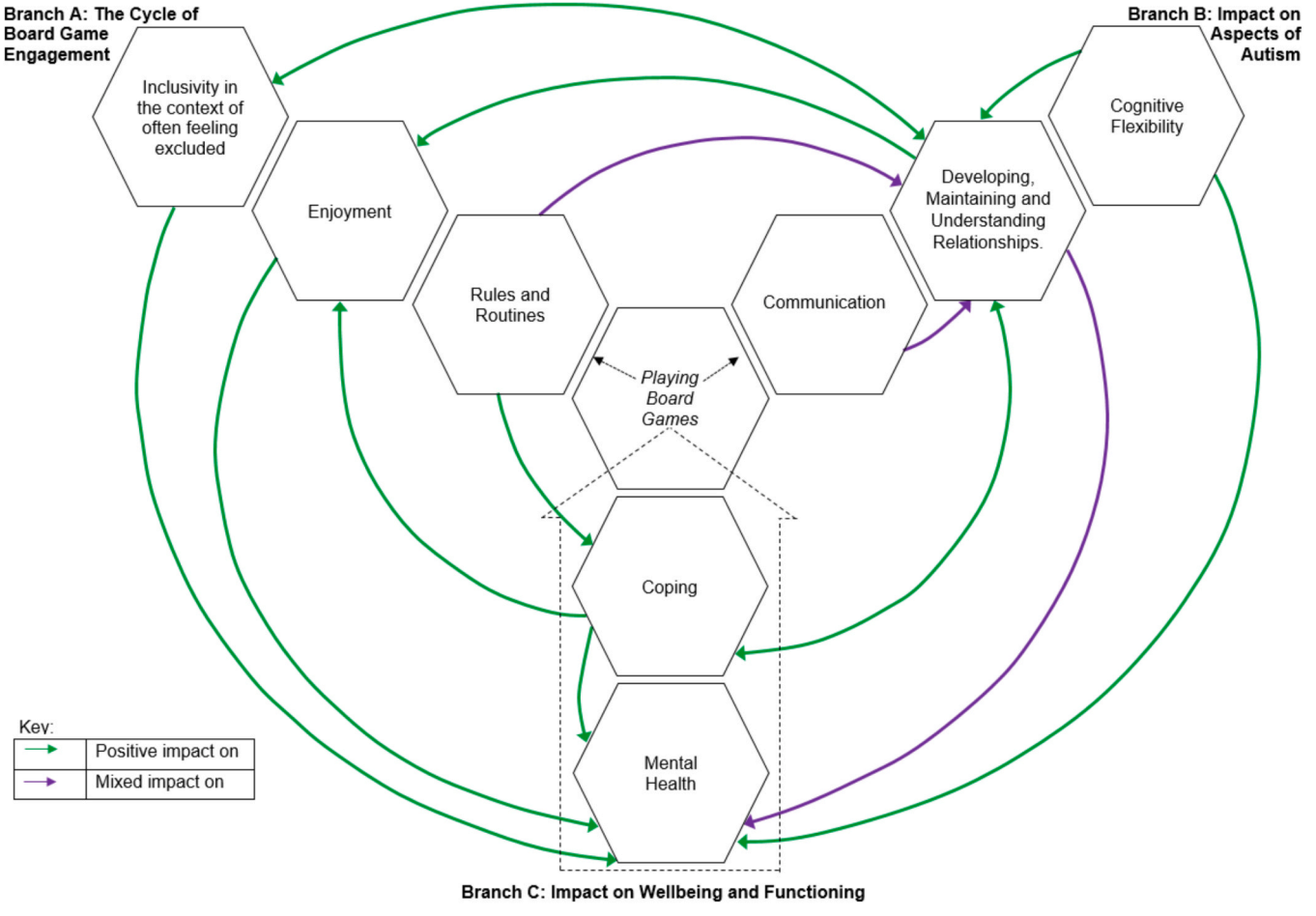

Fig. 1. Model representing autistic participant's perceptions of how table-top board game engagement impacts on their wellbeing and functioning.

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 they were introduced to having to tolerate a degree of uncertainty. 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. Elliot illustrated this by saying that learning new board games has become one of their ***"coping mechanisms around change***".

Social and communication

Another mechanism of board games found to be helpful was the turn-taking aspect, which appeared to have an impact on *communication* (Branch B). Elise 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***" [Elliot] because they could "***talk about something that we're all interested in***" [Arthur]. Noah 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, Joshua 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, Elliot 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.

Motivations for board game engagement

Enjoyment (Branch A) was viewed as a key motivator for engaging in table-top board game play. Elizabeth, Jordan and Addison 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, Jordan described how board game engagement "***has a good effect on my mental health***", and Joshua 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***" [Frank], and the outcome of the game (e.g., whether they won or lost). 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***" [Elise]. 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**"* [Joshua]) 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***" [Elizabeth, Arthur] and "***very open minde***d" [Elizabeth] 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. Elise 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***" [Joshua]. 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 their table-top board gaming communities 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, Elise 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

Participants described a direct link between table-top board gaming and wellbeing and functioning, forming the third concept. The two parts that make up this concept 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. Jordan 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, Elliot 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***" [Arthur]. Additionally, participants reported that board game play helped them to feel a sense of mastery, increasing their self-esteem. For example, Addison said after playing board games **"I feel a lot better about myself".** Noah 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, participants' 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.

In addition, participants were able to use how much they were playing board games, and enjoying playing, as an indication of their mental health status. Jordan 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

Participants discussed their reasons for playing board games and the impact that table-top board game engagement had on them. 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 model created in the study aims to provide a deeper understanding of how table-top board games might impact on wellbeing and functioning for autistic adults. Participants expressed that having rules and objectives within the game provided a structure for relationships, helping them to develop and maintain relationships. Further, participants reported that the turn-taking mechanism in many board games promoted turn-taking in communication, something which they reported they often struggled with in interactions outside of table-top board gaming. They felt that this helped them to develop key communication skills, which helped them to maintain relationships. This in turn, reduced feelings of social isolation. Participants went on to explain that reduced social isolation was further helped by the inclusive nature of board games (e.g., having no predetermined skill level, accessibility of the hobby). Participants reported that feeling part of a community and experiencing reduced social isolation has a positive impact on mental wellbeing.

Participants reported that the strategy element of table-top board games helped them to develop skills in problem solving and planning and organisation. Additionally, participants reported that because their strategy would sometimes be interrupted by another player's participation in the game, they would need to develop skills in tolerating uncertainty (i.e. uncertainty of whether they would be able to fully follow through with their strategy) and adapting to change (i.e. the changing nature of the game based on different player's actions during their turn). The skills in tolerating uncertainty were reported to sometimes also be supported through the uncertainty of who might turn up to board gaming nights and what games might be chosen to play during board gaming nights. Participants reported that they felt able to apply skills learnt in problem-solving, planning and organisation, tolerating uncertainty and adapting to change to their wider life. In the model, these skills have generally been grouped together as 'cognitive flexibility'. Participants reported that they felt that these skills helped to reduce their levels of anxiety, in turn impacting on their mental wellbeing.

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 suggests 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, our participants found that understanding and acceptance were already present in their board gaming communities, so it may be that the characteristics of such board gaming communities 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.

Participants talked about similarity of 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.

Additionally, it might be that table-top board games provide similar benefits to those which can be gained from other types of gaming. For example, an important factor reported by participants as important in table-top board gaming is rules and objectives. Other games, such as table-top role-playing games, or even multiplayer online games, also follow rules and have objectives (Bergström, 2012; Wu et al., 2024). Therefore, the benefits may be transferable across the different gaming platforms. However, there are other mechanisms identified that may be unique to table-top board gaming. For example, turn-taking processes do not happen in multi-player online gaming platforms, which might prevent the benefits that turn-taking is perceived to have on communication. Further, it is unclear whether other gaming platforms are seen as being as 'inclusive' as table-top board gaming. One of the reasons they are thought to be so inclusive, is that there is no pre-determined skill level. This might not be viewed the same in multi-player online gaming communities, given that some games group players based on their skill level in the game (Wu et al., 2024). Further exploration in these areas could be helpful to understand the transferability of the benefits to other gaming platforms.

The questions asked did not directly prompt participants to talk about their difficulties in the language 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. Communication, relationships and cognitive flexibility are all recognised as things that might be difficult or different for autistic people in the DSM-5. Given that table–top board games are reported to largely have a positive impact on communication, relationships and cognitive flexibility, it might be that table-top board games can be helpful to the wider population of autistic people, in a similar way that they are reported to be impactful for participants in this study.

The present research supports similar literature in the field that evidences the benefits of table-top board game engagement for autistic people. For example, Cross et al. (2024) conducted a recent study with 13 autistic table-top board game players. Both their study, and the present study, highlight the importance of rules and structure provided by board games. Similar findings were also reported regarding the enjoyment participants shared of engaging in board game play as their special interest. Finally, Cross et al. described games as a 'social lubricant', meaning that the games were reported to provide comfort and structure which helped autistic people to talk to, and develop friendships with others. This is similar to the findings reported in branch B of the model presented in the current study. One key difference between the studies is that Cross et al. began to explore the function of different types of games. They found that social deception games were difficult but enjoyable. This has potential for strengthening our understanding of the impact of table-top board games on autistic players, and opens new questions about whether this is variable based on game type.

Clinical implications

Talking therapies are the current recommended approach in the UK and many other countries for the treatment of mental health difficulties for autistic individuals. (e.g. 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). Our research offers an interesting new avenue of exploration, as through establishing what autistic individuals find to be therapeutically beneficial from board games we are able to identify principles that may be usefully applied in developing more effective approaches to talking therapies for this population. 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 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 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.

Strengths and limitations of the research

A strength of this research is that it contributes to a newly developing field of research, providing avenues for multiple different research topics to be explored as discussed below. Specifically, this research supports recent research by Cross et al. (2024), aiding the understanding of the impact of table-top board games on autistic adults. To our knowledge, limited 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 us 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.

One specific limitation in terms of the sample was that by definition participants had some successful ongoing engagement with their local board gaming community. Whilst participants reported their experiences of board gaming being accepting and inclusive because of the open-mindedness of other players to difference and diversity compared to other hobby communities, the findings may reflect a selection bias toward people with positive experiences. We cannot therefore conclude that all gaming communities are as inclusive, or that our findings would be applicable to autistic people in other areas and those living in other countries, where the culture, and specifically the culture within the board gaming community, may be different.

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, ten 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 elements 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. The findings have implications both for the utility of such gaming activities in promoting wellbeing, and as an avenue for identifying efficacious components that can be used within psychological interventions tailored for this population.

CRediT authorship contribution statement

Smith Ian Craig: Writing – review & editing, Supervision, Formal analysis, Conceptualization. **Kershaw Philip:** Writing – review & editing, Supervision, Project administration. **Miriam Sturdee:** Writing – review & editing, Supervision, Formal analysis. **Rebecca Bennett:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Funding

No funding source was utilised during this piece of work.

Declaration of Competing Interest

None.

Acknowledgements

We would firstly like to thank the participants for volunteering their time to talk to us about their experiences. We would also like to thank Dr Marcia Smith for helping to generate layout ideas for the model.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.reia.2025.202644.

Data Availability

The data that has been used is confidential.

References

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders, DSM-5*.

Atherton, G., Edisbury, E., Piovesan, A., & Cross, L. (2022). Autism through the ages: A mixed methods approach to understanding how age and age of diagnosis affect quality of life. *Journal of Autism and Developmental Disorders*, 1–16. https://doi.org/10.1007/s10803-021-05235-x

BBC NEWS. (2019). *Board games: Why are they becoming so popular?* BBC News. ⟨https://www.bbc.co.uk/news/av/uk-wales-49859688⟩.

Benevides, T. W., Shore, S. M., Palmer, K., Duncan, P., Plank, A., Andresen, M.-L., Caplan, R., Cook, B., Gassner, D., & Hector, B. L. (2020). Listening to the autistic voice: Mental health priorities to guide research and practice in autism from a stakeholder-driven project. *Autism, 24*(4), 822–833. https://doi.org/10.1177/1362361320908410

Bergström, K. (2012). Creativity rules: How rules impact player creativity in three tabletop role-playing games. *International Journal of Role-Playing*, (3), 1–16. https://doi.org/10.33063/ijrp.vi3.221

Booth, P. (2020). What's old is new: Board games can be a lifeline in lockdown. *United States News*. ⟨https://www.usnews.com/news/health-news/articles/2020-12-24/board-games-can-be-a-lifeline-in-covid-lockdown⟩.

Burman, H. (2021). Tabletop gaming: The therapy of fighting with miniature dragons. *BBC News*. ⟨https://www.bbc.co.uk/news/uk-england-nottinghamshire-57996237⟩.

Catchpole, J. (2023). Navigating a system not built for us: autism and primary care talking therapies. *The Lancet Psychiatry, 10*(12), 913–914. https://doi.org/10.1016/S2215-0366(23)00335-8

Charlton, R. A., Crompton, C. J., Roestorf, A., Torry, C., & Autistica Physical Health and Ageing Study Group. (2021). Social prescribing for autistic people: A framework for service provision. *AMRC Open Research, 2*, 19. https://doi.org/10.12688/amrcopenres.12901.2

Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. SAGE Publications,.

Cohen, L. M., & Ambrose, D. (1999). Adaptation and creativity. *Encyclopedia of creativity, 1*(1), 9–22.

Colvert, E., Simonoff, E., Capp, S. J., Ronald, A., Bolton, P., & Happé, F. (2021). Autism spectrum disorder and mental health problems: patterns of difficulties and longitudinal trajectories in a population-based twin sample. *Journal of Autism and Developmental Disorders*, 1–15. https://doi.org/10.1007/s10803-021-05006-8

Crane, L., Batty, R., Adeyinka, H., Goddard, L., Henry, L. A., & Hill, E. L. (2018). Autism diagnosis in the United Kingdom: Perspectives of autistic adults, parents and professionals. *Journal of Autism and Developmental Disorders, 48*, 3761–3772. https://doi.org/10.1007/s10803-018-3639-1

Cross, L., Belshaw, F., Piovesan, A., & Atherton, G. (2024). Game changer: Exploring the role of board games in the lives of autistic people. *Journal of Autism and Developmental Disorders*, *1*–20. https://doi.org/10.1007/s10803-024-06408-0

Cross, L., Piovesan, A., Sousa, M., Wright, P., & Atherton, G. (2023). Your move: An open access dataset of over 1500 board gamer's demographics, preferences and motivations. *Simulation & Gaming, 54*(5), 554–575. https://doi.org/10.1177/10468781231189493

Cummins, C., Pellicano, E., & Crane, L. (2020). Autistic adults' views of their communication skills and needs. *International Journal of Language & Communication Disorders, 55*(5), 678–689. https://doi.org/10.1111/1460-6984.12552

Dey, I. (1999). Grounding grounded theory: Guidelines for qualitative inquiry. *Sanoma Diego: Academic Press*.

Donovan, T. (2018). *It's All a Game: A Short History of Board Games. Atlantic Books*.

El Baou, C., Bell, G., Saunders, R., Buckman, J. E., Mandy, W., Dagnan, D., O'Nions, E., Pender, R., Clements, H., & Pilling, S. (2023). Effectiveness of primary care psychological therapy services for treating depression and anxiety in autistic adults in England: a retrospective, matched, observational cohort study of national health-care records. *The Lancet Psychiatry, 10*(12), 944–954.

Featherstone, C. (2024). *Social Prescribing for Autistic Adults* (Doctoral dissertation, University of Plymouth). https://doi.org/10.24382/5131.

Fusar-Poli, L., Brondino, N., Politi, P., & Aguglia, E. (2022). Missed diagnoses and misdiagnoses of adults with autism spectrum disorder. *European Archives of Psychiatry and Clinical Neuroscience, 272*(2), 187–198. https://doi.org/10.1007/s00406-020-01189-w

Gelder, S. (2017). *Board games saved my life, now I'm making my own. Islington Gazette Retrieved, 24*(07), 2022 from ⟨https://www.islingtongazette.co.uk/news/board-games-saved-my-life-now-i-m-making-my-3780966⟩.

Glaser, B. G., & Strauss, A. L. (2017). *The discovery of grounded theory: Strategies for qualitative research*. Routledge,.

Griffiths, S., Allison, C., Kenny, R., Holt, R., Smith, P., & Baron-Cohen, S. (2019). The Vulnerability Experiences Quotient (VEQ): A study of vulnerability, mental health and life satisfaction in autistic adults. *Autism Research, 12*(10), 1516–1528. https://doi.org/10.1002/aur.2162

Hamdani, Y., Kassee, C., Walker, M., Lunsky, Y., Gladstone, B., Sawyer, A., Ameis, S. H., Desarkar, P., Szatmari, P., & Lai, M.-C. (2023). Roadblocks and detours on pathways to a clinical diagnosis of autism for girls and women: A qualitative secondary analysis. *Women's health (London, England), 19*, Article 17455057231163761. https://doi.org/10.1177/17455057231163761

Howes, A. E., Burns, M. E., & Surtees, A. D. (2021). Barriers, facilitators, and experiences of the autism assessment process: A systematic review of qualitative research with health professionals. *Professional Psychology: Research and Practice, 52*(5), 449. https://doi.org/10.1037/pro0000413

Ingham, B., Miller, P. K., Thwaites, R., Wilson, C., Greaves, J., McMeekin, P., Rodgers, J., Dewison, N., Bowden, S. L., & Dagnan, D. (2023). *Improving Talking therapies for autistic People*.

Kannabiran, M., & McCarthy, J. (2009). The mental health needs of people with autism spectrum disorders. *Psychiatry, 8*(10), 398–401. https://doi.org/10.1016/j.mppsy.2009.06.016

Lever, A. G., & Geurts, H. M. (2016). Psychiatric co-occurring symptoms and disorders in young, middle-aged, and older adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 46*, 1916–1930.

Levi, M. K., Schreuer, N., Granovsky, Y., Bar-Shalita, T., Weissman-Fogel, I., Hoffman, T., & Gal, E. (2023). Feeling unwanted, when nobody wants you around": Perceptions of social pain among people with autism. *The American Journal of Occupational Therapy, 77*(2). https://doi.org/10.5014/ajot.2023.050061

Lewis, L. F. (2017). A mixed methods study of barriers to formal diagnosis of autism spectrum disorder in adults. *Journal of Autism and Developmental Disorders, 47*, 2410–2424. https://doi.org/10.1007/s10803-017-3168-3

Lockwood Estrin, G., Milner, V., Spain, D., Happé, F., & Colvert, E. (2021). Barriers to autism spectrum disorder diagnosis for young women and girls: A systematic review. *Review Journal of Autism and Developmental Disorders, 8*(4), 454–470. https://doi.org/10.1007/s40489-020-00225-8

Maddox, B. B., Dickson, K. S., Stadnick, N. A., Mandell, D. S., & Brookman-Frazee, L. (2021). Mental health services for autistic individuals across the lifespan: Recent advances and current gaps. *Current Psychiatry Reports, 23*(10), 1–9. https://doi.org/10.1007/s11920-021-01278-0

McManus, S., Bebbington, P. E., Jenkins, R., & Brugha, T. (2016). *Mental Health and Wellbeing in England: the adult Psychiatric morbidity Survey, 2014*.

National Institute for Health and Care Excellence. (2012). Autism spectrum disorder in adults: diagnosis and management. ⟨https://www.nice.org.uk/guidance/CG142/chapter/Recommendations#interventions-for-coexisting-mental-disorders⟩.

National Institute for Health and Care Excellence. (2013). Autism spectrum disorder in under 19s: support and management. ⟨https://www.nice.org.uk/guidance/cg170/chapter/recommendations#interventions-for-coexisting-problems⟩.

N.H.S. England. (2019). The NHS Long Term Plan. Retrieved 22/02/2024, from ⟨www.longtermplan.nhs.uk/publication/nhs-long-term-plan⟩.

Papworth, A. (2018). How board games are being used to tackle loneliness and mental health problems. *Ipswich Star*. ⟨https://www.ipswichstar.co.uk/news/ipswich-library-using-board-games-to-tackle-mental-health-issues-2816202⟩.

Raymaker, D. M., Teo, A. R., Steckler, N. A., Lentz, B., Scharer, M., Delos Santos, A., Kapp, S. K., Hunter, M., Joyce, A., & Nicolaidis, C. (2020). Having all of your internal resources exhausted beyond measure and being left with no clean-up crew": Defining autistic burnout. *Autism in Adulthood, 2*(2), 132–143. https://doi.org/10.1089/aut.2019.0079

Sargeantson, E. (2023). *Why Board Games Are So Popular*. ⟨https://mykindofmeeple.com/why-are-board-games-popular/#:~:text=Tabletop%20gamers%20get%20access%20to,in%20common%20to%20focus%20on⟩.

Simonoff, E., Pickles, A., Charman, T., Chandler, S., Loucas, T., & Baird, G. (2008). Psychiatric disorders in children with autism spectrum disorders: prevalence, comorbidity, and associated factors in a population-derived sample. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*(8), 921–929. https://doi.org/10.1097/CHI.0b013e318179964f

Spain, D., & Happé, F. (2020). How to optimise cognitive behaviour therapy (CBT) for people with autism spectrum disorders (ASD): A Delphi study. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 38*(2), 184–208. https://doi.org/10.1007/s10942-019-00335-1

Streng, I. (2009). Using therapeutic board games to promote child mental health. *Journal of Public Mental Health, 7*(4), 4–16. https://doi.org/10.1108/17465729200800024

Trimmer, H., Heintz, S., & Williams, S. (2023). *Adapting Low Intensity Cognitive Behavioural Therapy for Autistic Adults: Lessons from Plymouth's NHS Talking Therapies and Autism Spectrum Service*. https://doi.org/10.31234/osf.io/xpca6

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press,.

World Health Organisation. (2001). World Health Organization. (2001). *International classification of functioning, disability and health. ICF*. World Health Organization,.

Wu, R., Meng, X., Chen, H., Zhu, Z., & Wang, B. (2024). Achieving fairness in team-based FPS games: A skill-based matchmaking solution. *Applied and Computational Engineering*. https://doi.org/10.54254/2755-2721/44/20230050